

Comparison of Covid-19 knowledge level between high school and college student in Remaja Bergerak webinar

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Abstract

The adolescent age group plays a vital role in tackling the pandemic, one of which is in high school and college students. Through the Remaja Bergerak webinar with the theme of COVID-19, it is hoped that it will increase the knowledge of high school and college students in Indonesia regarding the epidemiology of COVID-19 cases and the COVID-19 vaccine. The purpose of this study was to compare the COVID-19 knowledge level between high school and college students. This type of research is a cross-sectional study with a pretest-posttest design. The first group consisted of 262 high school students and the second group consisted of 301 college students who have then compared the pretest and posttest scores. As a result, the high school student pretest scores were higher than the college student, but it was not significant ($p>0.05$). Likewise, in the posttest result, it was shown that the high school student experienced a higher score than the college student, but it was not significant ($p>0.05$). In conclusion, there was no difference in knowledge level in both high school and college students, but there was an increase in knowledge of each group.

Keywords: College Students; COVID-19; High School Students; Remaja Bergerak; Webinar

1. Introduction

Currently, people around the world are battling a new virus known as the COVID-19 virus. The emergence of this virus originated from a report by the Chinese state that there were at least 44 severe pneumonia patients in Wuhan, Hubei Province, China, to the World Health Organization (WHO) at the end of 2019. After being identified, it turned out that the genetic code was obtained, namely a variant of the new coronavirus. The threat of this virus is even more remarkable when various cases show human-to-human transmission. As a result of this human-to-human transmission, it caused an extraordinary increase in the number of cases until the end of January 2020, WHO declared a Global Emergency status. In February 2020, WHO referred to this variant as COVID-19. In March 2020, the number of cases of COVID-19 infection reached 571,678 cases. This virus has spread to 199 countries with a mortality rate of 4-5%, and most deaths are in the age group of 65 years and over. The first case in Indonesia was reported on March 2, 2020, allegedly transmitted by foreigners visiting Indonesia [1]. As of January 21, 2021, there were 97.2 million cases of COVID-19 in the world, with a death rate of 2.08 million. Meanwhile, on January 29, 2021, positive cases of COVID-19 in Indonesia increased by 13,802 cases, with a total of 1,051,795 cases and total death cases of 29,518 people [2].

Various efforts have been made to deal with the COVID-19 pandemic. When the status of the case of COVID-19 infection was announced as a pandemic, the government made various policies for all levels of society to deal with and overcome them, such as physical distancing, social distancing, staying at home, the use of personal protective equipment or masks,

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maintaining personal hygiene by washing hands, working and studying from home, postponing gathering activities, Large-Scale Social Restrictions, and the implementation of the New Normal policy. These various policies are certainly very contrary to the habits of the people before the pandemic [3]. It will certainly force people to change and adapt to new habits and lifestyle behaviors. In addition to policies carried out by governments around the world, scientists are also trying to create and develop a COVID-19 vaccine as one of the protection efforts in tackling the pandemic. Making a vaccine requires various stages until the vaccine can be accepted and then produced globally, including the COVID-19 vaccine. The stage of making a vaccine to overcome COVID-19 infection is urgently needed because vaccines are the most effective and economical way [4]. To date, there are five types of COVID-19 vaccines that have received distribution permits in Indonesia, namely Sinovac (CoronaVac), AstraZeneca, Sinopharm, Moderna, and Pfizer.

The case of the COVID-19 pandemic does not only cause symptoms and physical illness. It causes psychological impacts for patients or society, such as stress, anxiety, and feelings of depression. This condition is undoubtedly dangerous for individuals. Therefore it is necessary to anticipate or prevent the impact of this pandemic, one of which is through the role of teenagers. Adolescence is a period of transition from children to adults. Various hormonal, physical, psychological, and social changes occur very quickly during this period [5]. According to WHO, adolescents are people who are in the age range 12-24 years. Meanwhile, according to the Regulation of the Minister of Health of the Republic of Indonesia Number 25 of 2014, adolescents are residents aged 10-18 years. According to the National Population and Family Planning Agency, the age range for adolescents is 10-24 years old and unmarried. Teenagers can play one of the most critical roles in this pandemic period, especially in a small scope such as family. Family is the safest, most comfortable, and closest shelter for its members. There are many things that teenagers can do to help prevent the transmission of COVID-19, such as reminding each other to keep their distance when outside the house, wash their hands after coming into contact with anything, and limit contact as much as possible [6]. Apart from that, it is to provide knowledge about COVID-19 and its vaccines, spread facts to get rid of hoaxes that may circulate in families and even the community, and encourage people closest to them to carry out vaccination programs.

Adolescent age groups play an essential role in tackling the pandemic, one of which is in high school and college or university students. The two groups can play an important role even though they have different educational backgrounds. Groups of high school and college students usually have high-speed access to information and knowledge circulating in the community. In addition, they have complete self-awareness and can sort out what is good and the fact to be a reminder for the family and even the surrounding community.

Through the Remaja Bergerak webinar with the theme 'COVID-19', it is hoped that it will be able to increase the knowledge of the participants, especially high school and college students in Indonesia, regarding epidemiology cases of COVID-19 and the COVID-19 vaccine, which can then be applied in social life. The purpose of this study was to compare the COVID-19 knowledge level between high school and college students.

2. Material and methods

This study uses a descriptive-analytic approach. The type of this research is a cross-sectional study with a pretest-posttest design. A total of 563 participants were included in this research. We compared the pretest and posttest of the two groups: the first group was 262 high school students, and the second group was 301 college students. The Remaja Bergerak webinar provided information about the epidemiology and vaccine of COVID-19 and was lectured by a pediatrician and psychologist. The pretest and posttest quizzes were created by Google Form. The pretest was shared before the webinar started, and the posttest was shared after the delivery of the material by the two lecturers. Data were collected on July 17, 2021. Data were analyzed using Statistic Package for Social Science (SPSS) version 16 (SPSS Inc., Chicago, IL, USA). The data was presented as the mean±SD, then used the normality test by Kolmogorov-Smirnov test. The statistical differences were measured using the Wilcoxon Signed Ranks Test and Mann-Whitney test. $P < 0.05$ was considered to show a statistically significant difference.

3. Results

3.1. Characteristics of webinar participants

A total of 563 participants have joined the Remaja Bergerak webinar. The participants consist of high school and college students who spread throughout Indonesia. The pre- and posttest created by Google Form shared in Zoom Meeting and live chat Youtube must be filled in by all participants to be used to measure the level of knowledge of each participant. The average participants' age was 17.897 ± 1.968 with the youngest and oldest respectively being 14 and 29 years old. Complete data regarding the characteristics of the webinar participants can be seen in Table 1.

Table 1 Characteristics of the webinar participant

Characteristics	SHS (Total=262)		College Student (Total=301)	
	n	%	n	%
Gender				
Male	14	5.3	54	17.9
Female	248	94.7	247	82.1
Type of school/university				
Public	187	71.4	155	51.5
Private	75	28.6	146	48.5

Abbreviation: SHS, Senior High School

Table 2 Pretest score frequency distribution between the students

Status	SHS (Total=262)		College Student (Total=301)	
	n	%	n	%
Not passed	61	23.3	81	26.9
Passed	201	76.7	220	73.1

Abbreviation: SHS, Senior High School

The distribution of data showed that in the pretest, it was found that more participants exceeded the minimum mastery criterion than those who had not both in high school and college student (minimum mastery criterion 80). However, more college students presented did not pass the pretest than the high school students.

Table 3 Posttest score frequency distribution between the students

Status	SHS (Total=262)		College Student (Total=301)	
	n	%	n	%
Not passed	17	6.5	21	7
Passed	245	93.5	280	93.0

Abbreviation: SHS, Senior High School

In the pretest, college students were a group that had a higher percentage of not passed status than high school students (minimum mastery criterion 80). After getting the material, the posttest results showed that the number of not passed statuses decreased. However, the percentage of not passed status in college students is still higher than that of high school students.

3.2. The knowledge level of high school student

Our result study showed that the pretest score of 262 high school students were 82.79 ± 13.314 with the minimum and maximum scores being 30 and 100, respectively (Total score 100). After the webinar presentation, the posttest score increased significantly, it was 93.550 ± 11.003 with the minimum, and maximum scores were 10 and 100, respectively ($p=0.000$). It was found that 184 participants experienced an increase in posttest results, seven decreased, and the remaining received the same pre-and posttest results.

Table 4 Test score of high school student by school type

School Type	N	Pretest	Posttest
Public	187	82.89 ± 13.247	94.06 ± 96.47
Private	75	82.53 ± 13.566	92.27 ± 13.811
<i>p-value</i>		0.905	0.321

Based on Table 4, many students came from public schools. We can see no significantly different scores between public and private school participants ($p>0.05$).

3.3. The knowledge level of college student

Our result study showed that the pretest score of 301 college students was 80.960 ± 14.699 with the minimum and maximum scores being 20 and 100, respectively (Total score 100). After the webinar presentation, the posttest score increased significantly, it was 92.92 ± 11.551 with the minimum, and maximum scores were 10 and 100, respectively ($p=0.000$). It was found that 217 participants experienced an increase in posttest results, seven decreased, and the remaining received the same pre-and posttest result.

Table 5 Test score of college student by university type

University Type	N	Pretest	Posttest
Public	155	82.71 ± 14.064	94.45 ± 9.476
Private	146	79.11 ± 15.174	91.30 ± 13.249
<i>p-value</i>		0.021*	0.023*

*shows a significant difference ($P<0.05$)

Based on Table 5, many students were come from public university, although the total is not adrift. We can see significantly different scores between public and private university participants ($p<0.05$).

3.4. Comparison of knowledge level between high school and college student

From the data that have been processed using the Mann-Whitney test, the result showed that the high school student pretest scores were higher than the college student, but it was not significant ($p=0.161$) (Fig. 1). Likewise, in the posttest result, it was shown that the high school student experienced a higher score than the college student, but it was not significant ($p=0.561$) (Fig. 2).

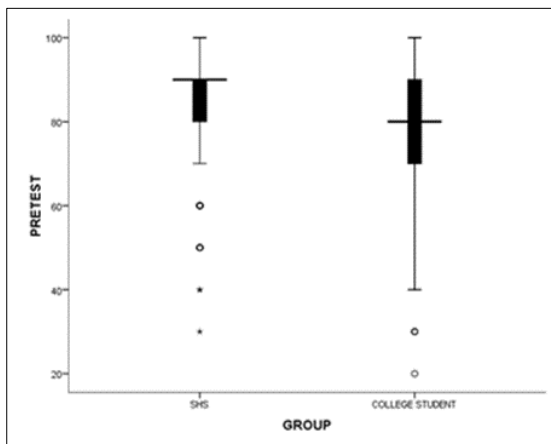


Figure 1 Comparison between pretest score high school and college student

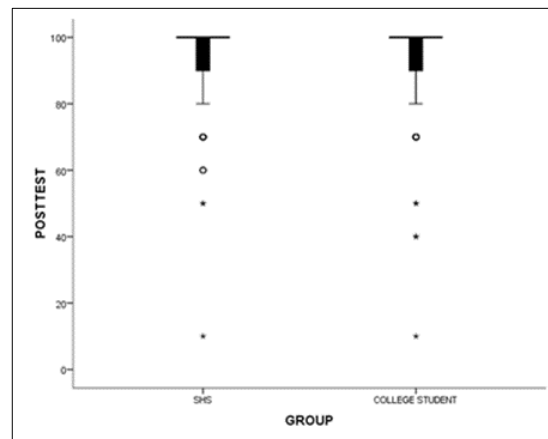


Figure 2 Comparison between posttest score high school and college student

4. Discussion

Today, the government has guaranteed that the government guarantees equal status to all its citizens, regardless of gender, socioeconomic status, or origins in playing a role and participating in education [7]. However, some of the things underlie participation in this educational activity can come from the individual or group level.

At the individual level, it can be explained through the Health Believe Model theory. Some of the influencing factors include acceptance of the level of alertness and severity of a health problem and abilities, benefits, and instructions for participating in webinar activities to be followed [8].

At the community or social level, it can be explained through Social Cognitive Model theory. In this theory, an individual's participation in attending a webinar can be formed because of the relationship between the individual, environmental influences, and behavior. Several factors that influence it are observations of the surrounding environment, individual abilities and abilities, individual reinforcement, and control [8].

The seminar website (webinar) is one of the innovations in the information transfer process, both in formal and informal contexts during the COVID-19 pandemic. In addition to bringing students closer to teachers/presenters in obtaining information or knowledge, webinars also help students who have busy schedules and have high mobility [9]. Because in webinars, students can learn anywhere and the material can also be recorded or documented. In this study, the participants who attended were university students and high school students from inside and outside the city in Indonesia. In addition, the characteristics of the participants who attended were also varied, with the participation level of high school students and university students from all levels.

In addition to providing material, the test in the webinar, both before (pretest) and after (posttest) the material is given for several reasons. In general, the test aims to determine the level of participants' motivation in participating in the webinar, assessing the quality and quantity of student quality, and evaluating material transfer activities during the webinar [10]. In particular, giving a pretest can help webinar participants integrate and assimilate the knowledge they already have on the material to be given. On the other hand, giving a posttest can be used as a benchmark in measuring learning progress or achievement following students' abilities [10].

Based on Effendy's [10] research, participants who received pretest and posttest had higher learning outcomes than students who did not receive pretest and posttest (74.21 vs. 59.05). The increase in knowledge level in this research is also in line with Aly et al. [11] that COVID-19 webinar can increase in posttest score of the participants from 79.25 to 88.98. Seputro et al. [12] also stated that after giving urology webinar, there was an increase in posttest scores. On the other hand, Yati et al. [13] showed decreased scores from pretest to posttest (127.5 vs. 85).

According to Effendy [10], this explanation shows that the application of the pretest can help participants prepare the material to be listened to during the zoom implementation. However, preparation alone is not enough because the learning process is essentially divided into three stages: assimilation, accommodation, and equilibration. Of course, the utilization of these stages is returned following the motivation, abilities, and learning he received during the material. If these factors are appropriately used, students will get better pretest and posttest results [10].

The comparison of knowledge level between high school and college students in our research did not look different, and the high school students presented slightly higher than the college students. This result was contradictory with Pertiwi's [14] result that stated that the knowledge level of green cosmetics in college students was higher than that of high school students. As well as the Suwaryo & Yuwono [15] study, the higher the level of education, the higher the knowledge level. The higher a person's education level, the more information, and experience a person will get. Someone who is highly educated also has high cognitive reasoning [16].

However, because COVID-19 is a new disease, it is natural that participants' knowledge level is not like previous studies. So that, it is hoped that in the future, through this webinar, teenagers, especially high school and college students, can be more aware of increasing their knowledge about COVID-19. Thus the youth can disseminate the information that has been obtained through the Remaja Bergerak webinar to the people around them. So that many people will be more educated about COVID-19 and avoid the spread of hoax news.

5. Conclusion

In this webinar, there was an increase in participants' knowledge, both high school and college students. However, there was no difference in the COVID-19 knowledge level between high school and college students' pretest and post-test. Further studies are still needed to increase the participants' knowledge level, other than webinar for an educational tool such as forum group discussion, training, and others.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors have no conflicts of interest to declare.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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