

## Research article

# Effectiveness of Health Promotion on the Prevention of COVID-19 in the Blacksmith Industry in Aceh Province

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## Abstract.

Covid-19 causes illnesses ranging from mild to severe symptoms. By May 15, 2020, in Aceh there had been 17 positive cases of Covid-19, with the death of one person and the recovery of 13 people. Blacksmith workers work without using PPE, do not wash their hands regularly and there is no health promotion from the local health center regarding ways to prevent Covid-19 in the workplace, so these workers are at risk of contracting Covid-19. This study aimed to determine the effect of health promotion on knowledge and attitudes about Covid-19 among blacksmith industry workers in Pangur Village. This was a pre-experimental study with a one group pretest-posttest without control group design. The sample consisted of workers in the blacksmith industry with a total of 25 respondents recruited through total sampling. Data were collected through a questionnaire which was prepared based on the Covid-19 guidelines and had been tested for validity and reliability. Univariate and bivariate data analyses were carried out and the dependent t test was used. The results demonstrated that 84% of the respondents were male, 68% were aged >30 years, and most had been working in the range of 6-10 years. According to the findings, there was an effect of health promotion on the knowledge and attitudes about Covid-19 among the blacksmith workers in Pangur Village ( $p$ -value = 0.0001). Blacksmith industry leaders are therefore advised to carry out health promotion programs for workers related to increasing knowledge about Covid-19 during the pandemic by using lecture methods and group discussions on how to prevent Covid-19 transmission on a regular and scheduled basis.

**Keywords:** Covid-19, knowledge, attitudes, health promotion

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## 1. Introduction

Novel coronavirus (2019-nCoV) is a new type of virus that has not been previously identified in humans. Coronavirus is zoonotic (transmitted between animals and humans). Research states that SARS-CoV is transmitted from civet cats (*civet cast*) to humans and MERS-CoV from camels to humans. Several known coronaviruses circulate in animals but have not been shown to infect humans.[1] Clinical manifestations usually appear within 2 to 14 days after exposure. Common signs and symptoms of coronavirus infection include symptoms of acute respiratory distress such as fever, cough, and shortness of

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breath. In severe cases, it can cause pneumonia, acute respiratory syndrome, kidney failure, and even death.[2]

Initially, this disease was temporarily named 2019 *novel coronavirus* (2019-nCoV), then WHO announced a new name on February 11, 2020, namely *coronavirus disease* (COVID-19) caused by the virus *Severe Acute Respiratory Syndrome Coronavirus-2* (SARS-CoV-2).[3] The virus can be passed from person to person and has spread widely in China and more than 190 other countries and territories. On March 12, 2020, WHO declared COVID-19 a pandemic. As of May 15, 2020, there were 4,307,287 cases and 295,101 deaths worldwide. Meanwhile, in Indonesia, 16,006 cases have been confirmed positive for COVID-19 and 1,043 deaths have been confirmed by 215 countries affected.[4]

The first COVID-19 was reported in Indonesia on March 2, 2020, with two cases. Data on March 31, 2020, showed that there were 1,528 confirmed cases and 136 deaths. The COVID-19 mortality rate in Indonesia is 8.9%, this figure is the highest in Southeast Asia. On May 15, 2020, there were 17 confirmed cases of COVID-19 in Aceh with the death of 1 person and the recovery of 13 people. Gayo Lues Regency is one of the areas in Aceh Province that has spread COVID-19 with an incidence of 2 positive COVID-19 people.[5] Efforts that can be done to reduce transmission are by doing prevention. Health promotion is an effort to market or introduce health to the public so that they are willing and able to maintain and improve their health independently. In health promotion, there are five arrangements, namely household arrangements, school arrangements, workplace arrangements, public places arrangements, and health facilities arrangements.[6]

Health promotion efforts are carried out in the workplace, in addition to being able to overcome, maintain, improve and protect their health. By implementing health promotion in the workplace, will increase work productivity and create a healthy work environment. Implementing health promotion in the workplace can have a positive impact on the work environment and society. [7]Health promotion in the workplace is a process that allows workers to increase control over their health, namely controlling the determinants or factors that affect their health.[8]

The home industry is an effort to find the benefits or benefits of the physical form of an item so that it can be used to meet needs and be done at home. Small industrial activities or household crafts are generally secondary jobs for farmers and villagers, which means they are an additional source of income.[9] Home industry is a place for processing iron into a machete. A machete is a sharp weapon made of ordinary iron and is used as a cutting tool or slashing tool, a machete is also commonly used for

agricultural tools by the community, where this home industry was founded in 1990 until now and began to be formed into the Occupational Health Unit Post (UKK). in 2017. This blacksmith business is a hereditary business and the workers are neighbors and the surrounding community.

The results of a preliminary study conducted in May 2020 at the Home Industry interviewed 7 workers and found that during their work they did not use masks because there was no PPE subsidy from the government, they also did not routinely wash their hands with soap and running water or use *hand sanitizer. sanitizer* due to the unavailability of soap and a place to wash hands at work, workers also do not pay much attention to health protocols due to Covid-19 cases which are not too high in the Gayo area, this home industry also only gets health checks and health promotions every three months even during the pandemic they did not receive any health promotion from the local puskesmas. The education of workers is still low. 3 workers did not graduate from elementary school, 3 graduated from elementary school, and 1 graduated from junior high school. Based on the results of interviews with 7 workers, they said that they were not too worried about the spread of Covid-19 because according to them Covid-19 only existed in big cities as they saw on television. The low level of knowledge of workers about how to prevent Covid-19 is one of the factors causing the behavior of not wanting to know about the importance of paying attention to health protocols in preventing the spread or transmission of Covid-19 in the workplace. Hakim's research (2021) shows that health promotion through social media has an effect on COVID-19 prevention behavior in urban communities in 2020. The more effective the media in providing health promotion, the individual's behavior in preventing COVID-19 will increase.[10]. Based on the explanation above, the researcher is interested in studying with the aim of know the effect of health promotion on knowledge and attitude of prevention of transmission Viruscorona (Covid-19) on Workers at Home Industry

## 2. Methods

### 2.1. Study Design

The research design used in this study *a pre-experimental design with one group pretest-posttest without control* that researchers do previous observations, then look at the changes that occur after the treatment.

## 2.2. Sample

This research was conducted in Pangur Village, Dabun Gelang District, Gayo Lues Regency, Aceh Province. The population in this study were workers who worked in the home blacksmith industry were 25 people. The sample used for the experiment was 25 people. The sampling technique used in this study was total sampling.

## 2.3. Instrument

The questionnaire was first tested for validity and reliability to get the right measuring instrument. The questionnaire test was conducted on 20 blacksmith workers in Bukit Village and Ulun Tanoh Village. A validity test was carried out at the home industry of blacksmiths in Bukit Village and Ulun Tanoh Village on 20 respondents with  $r$  table used as a comparison of 0.444. Based on the results of the validity test of the research instrument, it was found that from the 18 question items there were 4 valid questions, namely questions (3, 4, 6, and 7) the questions were valid because  $r$  count was greater than  $r$  table (0.444), and 14 items were invalid questions. namely questions number (1, 2, 5, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 18) where  $r$  count is smaller than  $r$  table (0.444), the final decision is taken. Question items numbered 1, 2, 5, 8, 9 to 18 question sentences were corrected and continued to be used considering that the question items were important to be used as research instruments.

## 2.4. Data collection procedure

All procedures carried out in this study, involving human participants complied with the ethical standards of national research committees and/or institutions. This study was designed and conducted by the ethical principles established by Stikes General Achmad Yani Cimahi. Therefore, ethical approval was obtained from the Ethics Research Committee of the General Achmad Yani Cimahi Sticks Ethics with No. 41 /KEPK/ VIII /2020. Before the intervention, respondents were given a questionnaire to measure their initial knowledge (*pretest*), then respondents were given intervention in the form of health promotion. Health promotion lasted for 60 minutes consisting of lectures and also 30 minutes consisting of group discussions. The main contents of health promotion topics include: understanding the coronavirus (Covid-19), symptoms of Covid-19, modes of transmission of Covid-19, clinical symptoms of Covid-19, prevention of Covid-19, treatment of Covid-19, and measures to prevent Covid-19. all workplaces. After

being given the intervention, respondents were given a questionnaire again for the final knowledge measurement (*posttest*). This was done to determine the effect of health promotion on knowledge about how to prevent the transmission of the coronavirus (Covid-19) to workers in the blacksmith home industry.

### 2.5. Data analysis

This study used univariate and bivariate data analysis. Univariate analysis was used to tabulate the frequency of demographic statistics. Bivariate analysis was conducted to examine the relationship between the independent variable and the dependent variable using the paired sample T-Test. This test was conducted to determine the effect of health promotion on knowledge and attitudes of preventing transmission of the Corona Virus (Covid-19) among Workers in the Home Industry of Blacksmiths.

## 3. Results

TABLE 1: Characteristics of Blacksmith Workers in Pangur Village.

No	Variable	F	%
1	<b>Gender</b>		
	Male	21	84
	Female	4	16
2	<b>Age</b>		
	<30 years	8	32
	>30 years	17	68
3	<b>Working period</b>		
	<1 year	2	8
	1-5 years	7	28
	6-10 years	12	48
	>10 years	4	16

Table 1 describes the characteristics of the respondents of the blacksmith workers in Pangur Village, male as much as 84%, the most age >30 years as much as 68%, while the working period the most in the range of 6-10 years is 48%..

Table 2 explains that the average knowledge score of blacksmith home industry workers before health promotion is 11.92 with a standard deviation of 2.51 and the average knowledge score of blacksmith workers after health promotion is 15.52 with a standard deviation 2.05, it can be seen that the mean difference in knowledge of blacksmith workers before and after health promotion is 3.60 with a standard deviation

TABLE 2: The Effect of Health Promotion on Knowledge About Prevention of Covid-19 Transmission in Blacksmith Workers

Variable	Mean	SD	SE	P-Value	N
Knowledge					
Before Health Promotion	11.92	2.51	0.50	0.0001*	25
After Health Promotion	15.52	2, 05	0.42		

\*p<0,05

of 1.87. The results of the statistical test P-value = 0.0001, it can be concluded that there is a difference significant increase in the average knowledge worker blacksmith before and after health promotion

TABLE 3: Health Promotion Effect Against Attitudes About How Prevenng Covid-19 In Pekeja Blacksmith.

Variables	Mean	SD	SE	P-Value	N
Attitudes					
Before Health Promotion	10.52	2.434	0.487	0.0001*	25
After Health Promotion	16.04	1.567	0.313		

\*p<0,05

Table 2 explains that the average score of attitudes of homeworkers in the blacksmith industry before health promotion is 10.52 with a standard deviation of 2.43 while the average score of the attitude of blacksmith workers after health promotion is 16.04 with a standard deviation of 1.56. The mean value of the difference in attitudes of blacksmith workers before and after health promotion is 5.52 with a standard deviation of 0.87. The results of the statistical test P-value = 0.0001, it can be concluded that there is a difference significant average increase blacksmith worker attitudes before and after health promotion

Figure 1 describe that of the 18 questions asked of the 25 respondents before treatment, questions that score the lowest answer is about how to protect workers from Covid-19 in the workplace by 28%, while the highest answer scores are questions about the management of sick workers, how to wash hands, actions against new workers who enter the red zone with each score 88%. After treatment, the lowest answer score was the question of protecting workers from Covid-19 in the workplace by 48%, while the highest score was on the question of the length of covid-19 and the length of incubation of covid-19 by 100%.

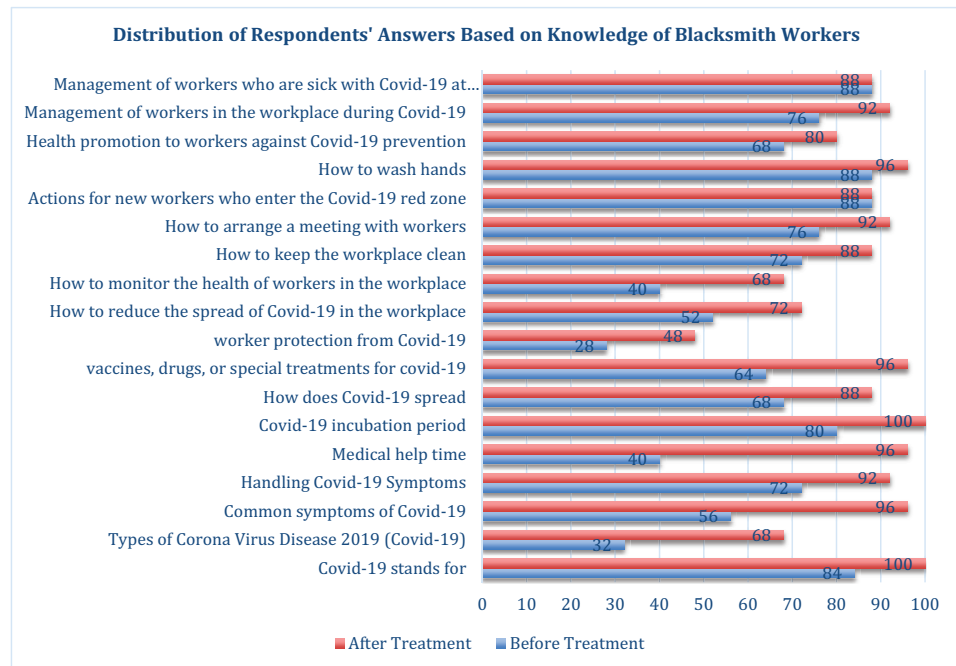


Figure 1: Distribution of Respondents' Answers Based on Knowledge of Blacksmith Workers.

## 4. Discussion

Knowledge of cognition is a very important domain in shaping one's actions (Overt behavior). Behavior that is based on knowledge will be more lasting than behavior that is not based on knowledge. So, if the respondent has good knowledge about preventing Covid-19, then the behavior of preventing COVID-19 in adolescents will become a normal thing and can become a good habit. Based on the results above, the researchers concluded that there was a significant effect of increasing the average knowledge of blacksmith workers before and after being given health promotion, the average score of knowledge before the promotion of occupational safety and health about covid-19 was 11.92 then increased to 15.52 with value  $P = 0.0001$ . A person's knowledge is mostly obtained through the senses of hearing and the senses of sight.[6] so that, with the two methods of health promotion carried out by researchers, the lecture method with slides and video media and the group discussion method with leaflet media that rely on the use of the senses of hearing and senses vision greatly allows the knowledge of blacksmith workers to increase after being given health promotion. This is proven based on graph 1 of the 18 questions asked, there is an increase in the percentage for each question, meaning that the respondent can understand the information conveyed at the time of the study. This study also found that the attitude of respondents after

giving education experienced a positive change, as evidenced by the results of the initial average score of 10.52 then increased to 16.04 after health promotion.

Health promotion with the lecture method is one of the direct or face-to-face counseling. When face to face respondents received all body messages well so that the power of memory was much stronger. The process of memory formation begins with the receipt of various stimuli received by the five senses by the memory sensors in the hypothalamus. The process of forming short-term memory (short term memory) begins in the hypothalamus. Information received by short-term memory is still easily forgotten, but if an object is considered important and meaningful, then the process of moving memory to long-term will begin. The process of forming long-term memory occurs in the anterior pituitary lobe. Long-term memory that is formed in the brain may be lost or forgotten, but it can be stimulated again so that it can be remembered.[11]

According to Silberman in Bahruddin [12] explains that learning requires mental involvement. Learning by listening alone will make someone forget, by looking will make someone remember a little, and having a discussion will make someone remember also understand what is being conveyed, the method used in this research is the lecture method and group discussion which is a form of learning. by listening, seeing as well as conducting discussions and based on the existing theory this research can make someone remember the new material or knowledge provided and understand it so that this can be a factor that makes the knowledge of blacksmith workers increase after being given health promotion. The results of this study are following the results of research conducted by Sugandi, Wahyuni which showed that there was a significant effect of health promotion using printed media (stickers) on increasing knowledge of bird traders with a p-value = 0.002. [13]

This study conducted by Syatiawati et al showed that health promotion through lecture and discussion methods was effective in increasing reproductive health knowledge in 7th-grade junior high school students with a p-value = 0.001.[14] Research conducted by Stauri also shows that there is an increase in the average knowledge of the use of PPE after being given health education. The average level of knowledge before being given health education was 7.40 (30.4%) into the category of lack of knowledge and after being given health education the average level of knowledge became 17.67 (78.2%) into the category of knowledge good, p-value = 0.0001 which means there is a significant difference in knowledge of Personal Protective Equipment before and after being given health education.[15]

Another study conducted by Siregar also showed that there was an increase in the average knowledge of welding workers before and after health promotion regarding



Personal Protective Equipment with the lecture method, namely 11.05 before health promotion was carried out to 15.71 after health promotion,  $p$ -value = 0.0001 which means that there is a significant difference in knowledge of Personal Protective Equipment before and after being given counseling using the lecture method and group discussion.[16]

## 5. Conclusion

In general, the characteristics of the respondents of the blacksmith workers in Pangur Village are 84% male, the most age >30 years is 68%, while the most working period is in the range of 6-10 years, which is 48%. There is a significant difference in the average knowledge and attitudes of homeworkers in the blacksmith industry before and after being given health promotion with a  $P$ -value = 0.0001. It is recommended to carry out a health promotion program for homeworkers in the blacksmith industry by using the lecture method and group discussions on how to prevent the transmission of Covid-19 on a regular and scheduled basis during the pandemic to break the chain of the spread of Covid-19 such as, routinely washing hands using soap and running water. or *hand sanitizer*, use a mask and maintain a minimum distance of 1 meter between one worker and another

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