Provision of N95 and N100 Masks Against Complaint ISPA on Worker Sub-District Lindah Furniture Gadingrejo Pasuruan City

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ABSTRACT
The research hypothesis is to find out there is a difference in giving N95 particle masks and N100 particle masks to complaints of acute breathing infection in Lindah Furniture workers in Gadingrejo District, Pasuruan City. Data were collected by experimental methods with quasi-experimental or quasi-experimental designs with a 3x1 factorial design involving three groups with the maximal to distinguish the influence of independent and bound variables. The results of the study are the results of the ANOVA test calculations are obtained by the Sig. 0,000<0.05. Besides that, also based on the Post Hoc Test, it is known that Sig (0.01) < 0.05, it can be concluded that there is a significant difference in the frequency of complaints of acute breathing infection after being given an intervention in the form of an N95 particle mask intervention with an N100 particle mask intervention.

***Keywords**: Complaints of acute breathing infection, Mask.*

1. INTRODUCTION

According to the data of acute respiratory infections (ISPA) from the Public Health Office of Pasuruan, the incidence of ISPA in 2017 reached 55,420 cases, with Gadingrejo sub-district as a contributor to the highest incidence of ISPA 9708 cases (Coral Health Center Ketug) and 8828 cases (Gadingrejo Health Center). Linda Furniture is located in the Gadingrejo district of Pasuruan city with the highest incidence rate of 9708 cases and 8828 cases. Through observations and interviews made to some workers, there are results of 7 out of 10 people or about 70% of furniture workers experiencing ISPA symptoms. The emergence of ISPA symptoms in Lindah furniture is because the worker in Lindah furniture does not use personal protective equipment (PPE) in the form of masks or respirators. Although the incident does not cause casualties, of course, it will cause an incident if left continuously without the proper countermeasures, it can cause death as the fatal for furniture owners because of the uncompromising process Production.

The study aims to see the influence of the N95 particle masks and N100 particle masks against ISPA complaints on workers in the district of Gadingrejo furniture in Pasuruan. Research conducted on 30 workers in the district of Gadingrejo furniture in Pasuruan city. Research conducted using the experimental method with quasi-experiment design or pseudo-experimental design with a 3x1 factorial draft. Sampling techniques use non- probability sampling techniques in the form of saturated samples where the entire population is used as samples. Analysis of data using the test Anova One Way to find out the group's differences in treatment groups with normal distribution data, with a level of significance 0.05.

2. METHOD

In this study, the method used an experimental method with a quasi-experiment design or a pseudo experimental design with a 3x1 factorial draft involving three which group of treatment to distinguish the influence of independent variables and dependent variables. The independent variables in the study are the giving of masks (T-shirts, N95 particle masks and N100 particle masks), while dependent variables are complaints of acute respiratory tract infections. The three groups assumed the same. According to Budiyono, the purpose of the quasi-experimental research is to obtain information that is an estimate of information that can be obtained with an actual experiment in circumstances that it is not possible to control or manipulate all the relevant variables [1].

This study was held in February to March 2019 against 30 furniture workers in Gadingrejo District in Pasuruan City. The 30 workers were divided into 3 groups where one group consisted of 10 people. Group 1 was given treatment by giving T-shirts as a nasal cover, group 2 given the treatment by giving mask with number N95 and group masks numbered N100. 3 given before the treatment was given, the group was given a pretest. The pretest is used to see the initial conditions same or not, if same research can be resumed and after being given the researcher's treatment observe and compare between the results of Group 1 with Group 2, Group 2 with Group 3, and Group 1 with Group 3 by giving a posttest to see the results. Posttest is used to see the difference in treatment results.

Before conducting the following research there are the steps that taken: (1) Determine the problems experienced by the sample. (2) Determine the sample that is used as the experiment unit. (3) Preparing research instruments in the form of checklists and interviews in conducting pretest, creating and validating instruments and assessment scales in conducting observations where the data source of primary data is directly taken when Observation. (4) Perform pretests to obtain pretests result before the intervention of the giving mask. (5) Intervene with the introduction of masks on the furniture Lindah district workers Gadingrejo Town Pasuruan. (6) Perform a posttest. (7) After that, all data is collected then data is processed and analyze the data. (8) The conclusions by researchers.

The type of data in this study is quantitative data, where the data of numbers will be tested using the ANOVA test (One Way). This is because the rate- scale data is the result of the number of frequency complaints experienced by workers Lindah furniture. Then the result of the processing was interpreted and concluded. The data source used is primary data. Primary data is data obtained directly from respondents related to the measurement of acute respiratory infection complaints. Data taken from observations on workers of furniture Lindah district of Gadingrejo town Pasuruan with sampling time is between February-April 2019. Researchers also use the documentation data, which is a record of past events, written documents, drawings, or monumental works [2]. In this research, the data of the documentation that will be attached by researchers are images or photographs during the research activity.

The purpose of the analysis of data from research is to know the effect of giving N95 particle masks and particle masks N100 against the decline of acute respiratory infections (ISPA) complaints at the Lindah furniture in the district of Gadingrejo Pasuruan. The data analysis techniques used in this research aid use IBM SPSS Statistic 23 computer software with several tests conducted among others: parametric statistical test, namely Anova One Way test. This test is used to determine the difference between group treatment groups. When every test of all aspects is assessed results in a signification value, if p-value (sig 2-tailed) shows results smaller than 0.05 then the research hypothesis is accepted or there is an influence. If the hypothesis is accepted or Ho is rejected then it can be concluded that the mask may decrease the complaint of acute respiratory tract infection in the Lindah sub-district of the town of Pasuruan and carried out a further test, namely Test Post HOC to see 3 significant differences in treatment groups.

3. RESULTS

The data used in this study is data with a ratio scale. After conducting a test the normality is known that the data is normal distribution (sig. value.> 0.05). After testing the normality of the data then carried out a test of homogeneity until the hypothesis test using the one way ANOVA test significance 0.05. Here is one way ANOVA test:

Table 1. The results of one-way anova

Test Result	Df	Mean Square	Sig
Beetween Group	5	41.617	0.0001*
Within Group	54	4.076	
Total	**59**		

From table 1 calculation result of Sig. Result of significance obtained 0.000 <0.05 then this indicator indicates that there is a significant difference between before and after being given a T-shirt, mask N95 and mask N100, so that the hypothesis "There is an influence on the mask of N95 and mask N100 against ISPA complaints in furniture workers Lindah in Gadingrejo district, Pasuruan City" received.

Then to know the difference between groups one and two, one and three, and two and three performed the following Post Hoc test is a Post HOC test:

Table 2. Post-hoc test result

	Group	Sig.
Complaints	T-Shirt	0,065
	N95 Mask	

Based on a post hoc test known to Sig (0.01) < 0.05, it can be noted that there is a significant difference in the frequency of ISPA complaints after the intervention of the N95 particle mask given with intervention of N100. So that H0 which said "There is no significant difference to the ISPA complaint after the intervention in the form of T-shirts as respiratory cover and mask N95 on workers Lindah furniture" accepted. While Ha which said "There is a significant difference to the ISPA

complaint after being given a T-shirt intervention as a respiratory cover and an N95 particle mask on the workers of Lindah furniture" rejected.

The conclusion of the Post Hoc test frequency of the ISPA complaint is the group with the N95 particle mask intervention and the N100 particle mask intervention has a sig value of 0.065 so it can be concluded that the N95 particle mask intervention is not Have a difference in the ability to reduce the frequency of ISPA complaints with the N100 particle mask intervention.

4. DISCUSSION

In this study, respondents or samples are 30 of the Lindah furniture workers in Gadingrejo District, Pasuruan City. All of the 30 workers of Lindah Furniture District of Gadingrejo Kota Pasuruan before the intervention all of the respondents do the pre-test, which includes 5 questions about the respondent's history and 8 questions regarding the complaint of acute respiratory tract infection (ISPA). The pretest was conducted on 11 February 2019 by observing when the worker started the work until finished doing the work at 07.00-16.00. After the pre-test result, respondents numbered 30 people in 3 members. The intervention by researchers is the provision of personal protective equipment (PPE) in the form of T-shirts as a nasal cover, mask N100, masks N95. Then for a month, each day researchers watched for the use of such personal protective equipment, then after 30 days, researchers did a posttest.

The distance between the posttest is 30 days, this opinion is based on the statement Notoatmodjo that the introduction of the instrument before and after the intervention with a distance of 15- 30 days [3]. For this posttest is the same as pretests that were previously given by the researcher before the treatment to see how many complaints suffered by the workers whether there is a difference before and after treatment and APD where That works best and effectively to lower the frequency of ISPA complaints.

4.1 Age of Lindah Furniture Worker

Age is one of the characteristics of individuals who can give an overview of the factors and describe the cause of illness or secondary factors that should be taken to examine the frequency differences of disease with other variables (Halim, 2012).

According to Nelson et al, (2005) as the age growing then there will be degeneration of the respiratory muscles and tissue elasticity. So that the strength of the breathing muscles inhale oxygen becomes decreased. Then because of the increasing age factor, more and more alveoli are damaged and the body resistance is getting lower. Therefore the person is vulnerable to the ISPA.

In general, the age of workers at furniture Lindah ranges from 22 to 58 years. With most workers ranging from 29 to 34 years. The range between workers is quite large, ranging from young adults to old adults).

4.2 Characteristics Of Workplaces In Lindah Furniture

Workers in Lindah furniture usually work with the environment and characteristics of the same workplace. According to the results of the researcher's interviews and observations, the working atmosphere of temperature, lighting, and humidity are all the same for every day. This can happen because if the work environment is raining, then the wood processing becomes obstructed even can stop operating due to wet raw materials that damage the quality of furniture produced.

The results of the measurement of air temperature at the workplace or workstation in furniture Lindah obtained results 32,50C-34,00C. According to Ardianto Research on the genesis of acute respiratory tract infections in plant workers is known results of multivariate analysis obtained by the results that respondents working with an uncomfortable temperature (<180C or > 300C) risky The ISPA is 14.97 times higher than that of comfortable temperatures [4]. Ineligible temperatures can cause ISPA because high temperatures are one of ISPA supporting factors because without air circulation causes hot air, pathogenic microorganisms, as well as other pollutants that are indoors, can not come out So that the concentration of microorganisms increases and makes workers easily exposed to ISPA.

According to Yusnabeti, on Pm10 and acute respiratory infections in industrial worker furniture, low temperatures can cause pollutants in an atmosphere trapped and not spread because the increases of temperatures can accelerate chemical reactions Change of an air pollutant [5]. The average air temperature of the measured results in Yusnabeti's study amounted to 31,8°C [5]. The working room temperature complies with the standard of 18°C-28°C at Kepmenkes No. 1405/Menkes/SK/XI/02.17. It can be said that the temperature of the workspace at the research site is high. The high temperature of the air and the temperature of the air will cause dust particles (PM10) to last longer in the air so it is possible to be sucked by large workers. That makes it a risk factor for ISPA.

The result of measurement of air humidity at the workplace or workstation in furniture Lindah obtained the result 61.8%-63.8%. According to the research of Yusnabeti, on PM10 and acute respiratory tract infections in industrial workers furniture is known by the measurement of air humidity in West Cilebut in Bogor village furniture by 74.0% It is not following the condition of humidity The workspace is 40-60% [5].

The measurement results of Yusnabeti are the same as the result of moisture-metering conducted by the researchers, i.e. 61.8%-63,8% which indicates that it does not comply with the condition of working space humidity of 40-60% [5]. According to Yusnabeti moisture, the workspace is associated with an ISPA on workers [5]. Humid air causes particle- shaped pollutants to bind to water in the air, forming larger particles. These particles are easy to settle and as a mushroom and bacterial hive. Then for the intensity of light in Lindah furniture ranging from 185 Sampa 195 lux, In this case, can be said the intensity of light in furniture Lindah is appropriate to the area of the workspace.

5. CONCLUSION

This study found that the use of masks could prevent complaints of acute respiratory tract infections (ISPA) in Lindah Furniture workers in Gadingrejo District, Pasuruan City. The recommendation for Lindah Furniture in Gadingrejo District, Pasuruan City is it expected to pay more attention to workers from the health sector to work so that workers can work properly and properly to improve work efficiency. Workers have to use a mask when starting until finished doing the work. Also, always taking care of masks given to be used optimally to prevent or suppress complaints of acute respiratory infections (ARI).

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