*Prisma Sains: Jurnal Pengkajian Ilmu dan Pembelajaran Matematika dan IPA IKIP Mataram*
*https://e-journal.undikma.ac.id/index.php/prismasains/index*
*e-mail: prismasains.pkpsm@gmail.com*

*April 2023. Vol. 11, No. 2*
*p-ISSN: 2338-4530*
*e-ISSN: 2540-7899*
*pp. 440-449*

# Relationship between Using Masks and Incidence of *Acute Respiratory Infection* in Marble Stone Workers

*** Wiwid Yuliastuti, Suharyoto, Suciati, Leny Indrawati, Aesthetica Islamy**
STIKes Hutama Abdi Husada Tulungagung. Jl. Dr.Wahidin Sudiro Husodo Tulungagung, 66224, Indonesia

Corresponding Author e-mail: wiwidyuliastuti1@gmail.com

Received: March 2022; Revised: March 2023; Published: April 2023

**Abstract**

The use of personal protective equipment masks is an important factor in protecting workers from potential hazards while working in marble processing. Many diseases are caused by exposure to dust, especially acute respiratory infections (ARI). The purpose of this study was to determine the relationship between the use of masks and the incidence of ARI in marble stone workers in Besole village, Besuki Tulungagung district. The design of this study is an analytic association using a cross-sectional design. The population is all marble stone workers in Besole village, Besuki Tulungagung district. The sample size is 44 respondents, the sampling technique uses purposive sampling. The independent variable of this study is the use of masks and the dependent variable is the incidence of ARI. Data collection using a questionnaire was given to marble workers in Besole Village, Besuki Tulungagung sub-district. Data analysis used the Spearman Rho statistical test with Confidence Interval (CI): of 95% or □ = 0.05. The results showed that most of the respondents, 28 respondents (64%), wore masks and half of the respondents, 22 respondents (50%), had mild ARI. The statistical test results showed p value = 0.015 < α = 0.05 which means H0 was rejected so it can be stated that there is a relationship between the use of masks and the incidence of ARI in marble stone workers. The conclusion from the results of this study is the use of masks when working properly and correctly as self-protection from dust so that marble workers do not experience pain, especially ARI.

**Keywords**: Use of masks, ARI, Workers

**How to Cite:** Yuliastuti, W., Suharyoto, S., Suciati, S., Indrawati, L., & Islamy, A. (2023). Relationship between Using Masks and Incidence of Acute Respiratory Infection in Marble Stone Workers. *Prisma Sains : Jurnal Pengkajian Ilmu dan Pembelajaran Matematika dan IPA IKIP Mataram, 11*(2), 440-449. doi:https://doi.org/10.33394/j-ps.v11i2.7353

https://doi.org/10.33394/j-ps.v11i2.7353



## INTRODUCTION

Manpower as a human resource needs special attention in terms of its ability, safety, and occupational health. The risks faced by workers are the danger of accidents and occupational diseases (Budiono, 2010). The use of personal protective equipment is an important factor in protecting workers from potential hazards while working. Masks are used to protect dust or larger particles that enter into the breath, and can be made of cloth with a certain size (A.M. Sugeng Budiono, 2013).

The workforce working in the manufacture of marble requires dust protection in the form of a mask, but the reality is that only a small proportion of marble processing plants wear masks as personal protection. Dust from sawing marble can cause various health problems, if dust gets into the eyes it causes eye infection, if inhaled it enters the respiratory tract causing coughing if allowed to cause acute respiratory infection (ARI) (Anugrah, 2013).

ARI is an infectious disease of the upper and lower respiratory tract, the incidence of which can be caused by air pollution or dust. Dust mixed with viruses and bacteria is inhaled through the nose into the lungs so many workers who work in places with high air pollution

and stone workers experience ARI due to not wearing masks (Departemen Kesehatan RI, 2013)

From WHO data, only 25% of workers use masks, or not half of the total working population in the world. In Indonesia, the number of masks used is quite low, only 37% of workers wear masks while working (Departemen Kesehatan RI, 2013). From data from the Tulungagung district health office in 2013, only 15% of workers in Tulungagung used masks, from interviews in Besole Village, out of 10 workers, only 3 workers wore masks.

For ISPA incident data according to WHO (2013), Among all occupational diseases, 30% to 50% are silicosis and pneumoconiosis (respiratory tract disease) caused by exposure to workplace dust, which occurs worldwide every year. In Indonesia, ARI is in third place with an incidence of 2,750,891 people after heart disease and lung disease (Departemen Kesehatan RI, 2013). Data from the Tulungagung Health Office, the incidence or incidence of ISPA cases in 2014 was 21,486 cases out of a total of 59,847 (35.9%) toddlers (Dinas Kesehatan Tulungagung, 2017). From the Besole Health Center register data, the incidence of ARI for all ages was 398 people, from this data there were 215 cases (54%) of the sufferers who came from families who worked as marble stone workers.

The impact of ARI is damage to lung tissue that is more progressive and has the potential to spread throughout the lung fields which is characterized by symptoms of cough that doesn't heal and wet crackles. ARI is a combination of respiratory diseases such as tracheitis, bronchitis, bronchopneumonia, and asthma bronchiale. And will continue to a more severe prognosis if it does not get treatment immediately even to the point of causing death (Departemen Kesehatan RI, 2011).

ARI disease is a highly contagious disease, this occurs due to decreased immune system or body resistance, for example, due to fatigue or stress. Curative prevention efforts by administering drugs and meeting adequate nutritional needs to increase endurance. Preventive prevention of marble workers by using personal protective equipment masks as an effort to avoid ARI or prevent the further spread of ARI (Departemen Kesehatan RI, 2011).

Previous research that has been conducted by Retno Pujiani (2016) the incidence of ARI in used paper packing centers found a relationship between the use of PPE masks and the incidence of ARI in workers. And research conducted by Hasanah (2019) Of furniture workers who did not wear masks, there were 46 people (95.83) from 48 respondents. Complaints from workers who did not wear masks were that their chests felt heavy and tight. Based on the facts above, researchers are interested in examining the relationship between the use of masks and the incidence of acute respiratory infections (ARI) in marble stone workers in Besole Village, Besuki District, Tulungagung Regency.

## METHOD

The research design used in this study is an analytic association research design, namely the researcher tries to find a relationship between two or more variables by making an analytic relationship. This research needs to be analyzed on the data that has been collected, and how big the relationship between the variables is. Therefore, in this study, it is necessary to have a hypothesis (Nursalam, 2011)

In this study, the researchers wanted to know the associative problem with the cross suctional approach to measure all variables, which aims to determine the relationship between the use of masks and the incidence of acute respiratory infections (ARI) in marble stone workers in Besole village, Besuki district, Tulungagung.

The population of this study was all stone workers in Besole Village, with a total of 50 respondents. The sample used in this study were some marble workers in Besole Village, with the inclusion criteria of workers who were willing to be examined or to be respondents, respondents who did not experience mental disorders, and respondents aged over 25 years. Exclusion criteria are respondents with complications and severe illness, and respondents

who are not at the place or are away for an unspecified time limit. The sampling technique in this study was purposive sampling.

In this study, the type of data used was primary data to determine the relationship between the use of masks and the incidence of acute respiratory infections by using a questionnaire sheet. The questionnaire used consisted of 2 types of questions, namely 1. Questions about wearing masks and 2. Questions about ARI incidents. In the mask use variable, there are 4 questions consisting of the type of mask, the size of the mask, the frequency of changing the mask, and the fixation of the mask when there is head movement. These questions were adopted from the research results Hasanah (2019). Meanwhile, the ARI incident variable consisted of 7 checklist questions about the symptoms of ARI experienced by the respondent, namely fever, sneezing, coughing, runny nose (runny nose), hoarseness, sore throat, and shortness of breath (Sri Fuqoha, 2017). The results of the respondents' answers were given a score and then categorized into 3 categories, namely the use of masks was good, sufficient, and not good (mask use variable) and no ARI, mild ARI, moderate ARI (ARI incident variable). Before the questionnaire was given to the respondents, validity and reliability tests were carried out on the questionnaire. The validity test was carried out on a population of clothing convection workers.

Data processing is done by editing, namely by re-examining the data from the observer. Coding is done by giving a code to each characteristic then the data collected is given a score and the data is arranged in tabular form. The next process is data analysis. Data analysis was carried out using the Spearman Rho test analysis using a computer to assess the relationship between the use of masks and the incidence of acute respiratory infections (ARI) in marble stone workers in Besole Village, Besuki Tulungagung District.

## RESULTS AND DISCUSSION

### Results

Characteristics of the subjects in this study included age, education, length of work, use of masks and incidence of acute respiratory infections (ARI). Characteristics of the subject based on the age of almost half of the respondents aged 41-50 years amounted to 20 respondents (46%). Characteristics of subjects based on education, almost half of the respondents had high school education, a total of 21 respondents (48%). Characteristics of the subject based on the length of work most of the respondents worked > 5 years with a total of 27 respondents (61%). According to the characteristics of the subject based on the use of masks, the majority of respondents occasionally use masks properly, with a total of 28 respondents (64%). Characteristics of the subjects based on the incidence of acute respiratory infections (ARI) half of the respondents had mild ARI, a total of 22 respondents (50%).

***General Data***

*Characteristics of Respondents by Age*

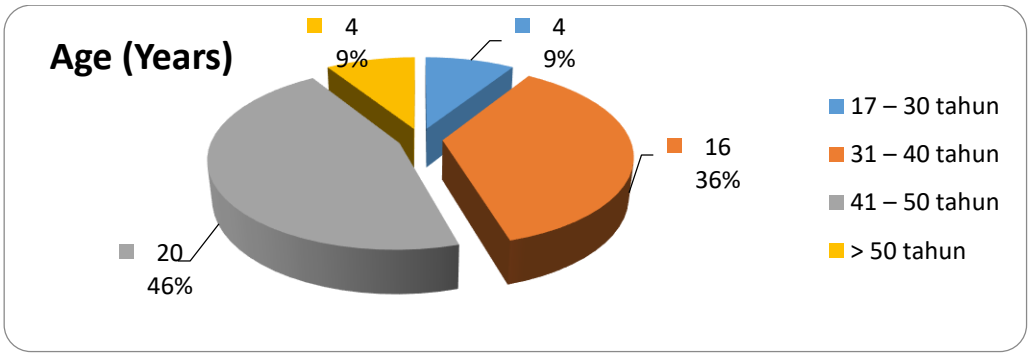


Diagram 1. Distribution of respondents based on age in Besole Village, Besuki District

Diagram 1 above can be interpreted that almost half of the respondents aged 41-50 years amounted to 20 respondents (46%).

*Characteristics of Respondents Based on Education*

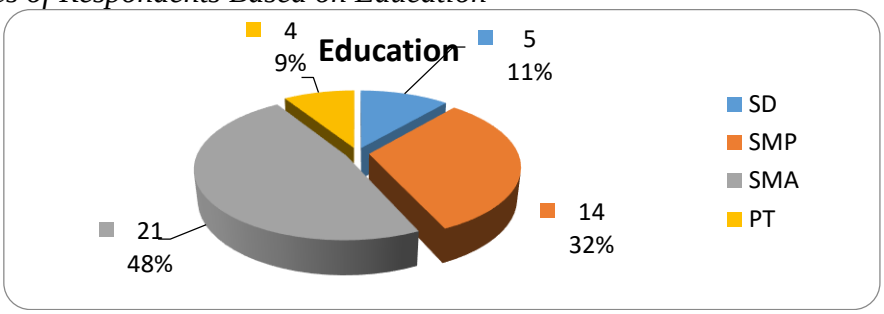


Diagram 2 Distribution of respondents based on education in Besole Village, Besuki District

Diagram 2 above can be interpreted that almost half of the respondents have a high school education, a total of 21 respondents (48%).

*Characteristics of Respondents Based on Length of Work*

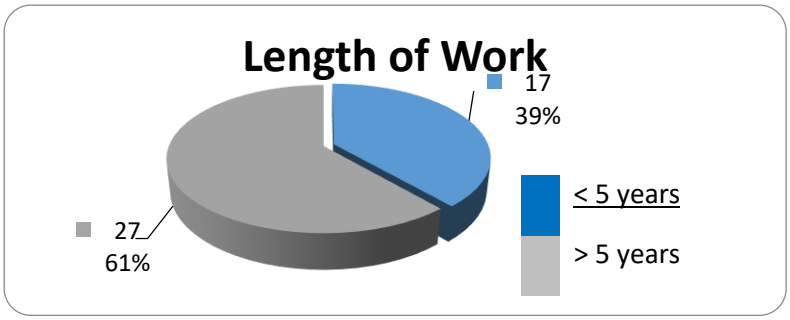


Diagram 3 Distribution of respondents based on length of work in Besole Village, Besuki District

Diagram 3 above can be interpreted that most of the respondents worked > 5 years with a total of 27 respondents (61%).

***Special Data***

*Use of Masks*

Table 1 Frequency Distribution of Respondents Based on Mask Use in Besole Village, Besuki District

| No | Use of Masks | Frekuensi (f) | Persentase (%) |
|---|---|---|---|
| 1 | Use masks properly | 9 | 20 |
| 2 | Occasionally use a mask properly | 28 | 64 |
| 3 | Not using masks properly | 7 | 16 |
| | Amount | 44 | 100 |

Table 1 above can be interpreted that the majority of respondents occasionally use masks properly with a total of 28 respondents (64%).

*ARI incident*

Table 2 Frequency Distribution of Respondents Based on ISPA Incidents in Besole Village, Besuki District

| No | ARI incident | Frekuensi (f) | Persentase (%) |
|---|---|---|---|
| 1 | No ARI | 17 | 39 |
| 2 | Mild ARI | 22 | 50 |
| 3 | Severe ARI | 5 | 11 |
| | N | 44 | 100 |

Table 2 above can be interpreted that half of the respondents had a mild ARI with a total of 22 respondents (50%).

*The Relationship between the Use of Masks and the Incidence of ARI in Marble Stone Workers*

Table 3 Cross-tabulation of the Relationship between Mask Use and ISPA Incidence in Marble Stone Workers in Besole Village, Besuki District

| No | Use of Masks | Incidence of ARI | | | | | | Amount | |
|---|---|---|---|---|---|---|---|---|---|
| | | No ARI | | Mild ARI | | Severe ARI | | | |
| | | f | % | f | % | f | % | f | % |
| 1 | Use masks properly | 3 | 7 | 6 | 13 | 0 | 0 | 9 | 20 |
| 2 | Occasionally use a mask properly | 14 | 32 | 14 | 32 | 0 | 0 | 28 | 64 |
| 3 | Not using masks properly | 0 | 0 | 2 | 5 | 5 | 11 | 7 | 16 |
| | N | 17 | 39 | 22 | 50 | 5 | 11 | 44 | 100 |

Table 3 above shows that 3 respondents (7%) were not exposed to ARI and as many as 6 respondents (13%) wore masks with mild ARI. As many as 14 respondents (32%) occasionally use masks well and are not exposed to ARI and as many as 14 respondents (32%) use masks occasionally and are not exposed to mild ARI. As many as 2 respondents (5%) did not use mild ARI and as many as 5 respondents (11%) did not use masks exposed to severe ARI.

***Cross Tabulation between Variables and Respondent Characteristics***

*Cross tabulation between the use of masks and the age of the respondents*

Table 4 Cross-tabulation between the use of masks and the age of the respondents in Besole Village, Besuki sub-district

| Use of Masks | Age | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 17-30 y | | 31-40 y | | 41-50 y | | >50 y | | N | |
| | N | % | N | % | N | % | N | % | N | % |
| Use masks properly | 1 | 2 | 1 | 2 | 5 | 11 | 2 | 5 | 9 | 20 |
| Occasionally use a mask properly | 1 | 2 | 12 | 28 | 14 | 32 | 1 | 2 | 28 | 64 |
| Not using masks properly | 2 | 5 | 3 | 7 | 1 | 2 | 1 | 2 | 7 | 16 |
| N | 4 | 9 | 16 | 36 | 20 | 45 | 4 | 9 | 44 | 100 |

Table 4 above can be interpreted that there are 14 respondents (32%) occasionally use masks properly and are 41-50 years old.

*Cross tabulation between the use of masks and the education of respondents*

Table 5 Cross-tabulation between the use of masks and the education of respondents in Besole Village, Besuki Tulungagung District

| use of masks | Education | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | SD | | SMP | | SMA | | PT | | N | |
| | N | % | N | % | N | % | N | % | N | % |
| Use masks properly | 1 | 2 | 1 | 2 | 4 | 9 | 3 | 7 | 9 | 20 |
| Occasionally use a mask properly | 3 | 7 | 9 | 20 | 15 | 34 | 1 | 2 | 28 | 64 |
| Not using masks properly | 1 | 2 | 4 | 9 | 2 | 5 | 0 | 0 | 7 | 16 |
| N | 5 | 11 | 14 | 32 | 21 | 48 | 4 | 9 | 44 | 100 |

Table 5 above can be interpreted that there are 15 respondents (34%) occasionally use masks properly and have high school education.

2) Cross tabulation between the use of masks and the duration of work

Table 6 Cross-tabulation between the use of masks and length of work in Besole Village, Besuki Tulungagung District

| Use of Mask | Length of working | | | | | |
|---|---|---|---|---|---|---|
| | ≤ 5 year | | >5 year | | Amount | |
| | N | % | N | % | N | % |
| Use masks properly | 4 | 9 | 5 | 11 | 9 | 20 |
| Occasionally use a mask properly | 8 | 18 | 20 | 45 | 28 | 64 |
| Not using masks properly | 5 | 11 | 2 | 5 | 7 | 16 |
| N | 17 | 39 | 27 | 61 | 44 | 100 |

Table 6 above can be interpreted that there are 20 respondents (45%) occasionally use masks properly and work > 5 years.

*Cross tabulation between ARI and age of respondents*

Table 7 Cross-tabulation between the incidence of ARI and the age of the respondent in Besole Village, Besuki Tulungagung District

| Incident of ARI | Age | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 17-30 th | | 31-40 th | | 41-50 th | | >50 th | | Amount | |
| | N | % | N | % | N | % | N | % | N | % |
| No | 1 | 2 | 7 | 16 | 7 | 16 | 2 | 5 | 17 | 39 |
| Mild | 1 | 2 | 8 | 18 | 12 | 27 | 1 | 2 | 22 | 50 |
| Severe | 2 | 5 | 1 | 2 | 1 | 2 | 1 | 2 | 5 | 11 |
| Amount | 4 | 9 | 16 | 36 | 20 | 45 | 4 | 9 | 44 | 100 |

Table 7 above can be interpreted that there were 12 respondents (27%) affected by mild ARI and aged 41-50 years

*Cross tabulation between ARI incidents and respondent's education*

Table 8 Cross-tabulation between the incidence of ARI and the education of respondents in Besole Village, Besuki Tulungagung District

| Incident of ARI | Education | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | SD | | SMP | | SMA | | PT | | Amount | |
| | N | % | N | % | N | % | N | % | N | % |
| No ARI | 1 | 2 | 8 | 18 | 6 | 14 | 2 | 5 | 17 | 39 |
| Mild ARI | 3 | 7 | 3 | 7 | 14 | 32 | 2 | 5 | 22 | 50 |
| Severe ARI | 1 | 2 | 3 | 7 | 1 | 2 | 0 | 0 | 5 | 11 |
| Amount | 5 | 11 | 14 | 32 | 21 | 48 | 4 | 9 | 44 | 100 |

Table 8 above can be interpreted that there are 14 respondents (32%) affected by mild ARI and have high school education.

*Cross tabulation between ARI events and length of work*

Table 9 Cross-tabulation between the incidence of ARI and length of work in Besole Village, Besuki Tulungagung District

| Incident of ARI | Length of Work | | | | | |
|---|---|---|---|---|---|---|
| | ≤ 5 year | | >5 year | | N | |
| | N | % | N | % | N | % |
| No | 7 | 16 | 10 | 22 | 17 | 39 |
| Mild | 7 | 16 | 15 | 34 | 22 | 50 |
| Severe | 3 | 7 | 2 | 5 | 5 | 11 |
| N | 17 | 39 | 27 | 61 | 44 | 100 |

Table 9 above can be interpreted that there were 15 respondents (34%) affected by mild ARI and working duration > 5 years.

***Analysis***

Statistical test results for the relationship between the use of masks and the incidence of ARI among marble stone workers in Besole Village, Besuki Tulungagung District

Table 10 Spearman Rho Statistical Test Tabulation of the Relationship between Mask Use and ARI Incidence in Marble Stone Workers in Besole Village, Besuki District

| Spearman's rho | | Penggunaan masker | Kejadian ISPA |
|---|---|---|---|
| Penggunaan masker | Correlation Coefficient | 1.000 | .365* |
| | Sig. (2-tailed) | . | .015 |
| | N | 44 | 44 |
| Kejadian ISPA | Correlation Coefficient | .365* | 1.000 |
| | Sig. (2-tailed) | .015 | . |
| | N | 44 | 44 |

*. Correlation is significant at the 0.05 level (2-tailed).

Table 10 shows that the Spearman Rho statistical test obtained p value = 0.015 <α = 0.05. This shows that there is a relationship between the use of masks and the incidence of ARI in marble stone workers in Besole Village, Besuki Tulungagung District.

Subject characteristics based on cross-tabulation between mask use and age, there were 14 respondents (32%) who used masks occasionally and were 41-50 years old. Subject characteristics based on cross-tabulation between the use of masks and education, there were 15 respondents (34%) who used masks occasionally and had high school education. Subject characteristics based on cross-tabulation between mask use and length of work, there were 20 respondents (45%) who used masks occasionally and worked > 5 years. Subject characteristics based on cross-tabulation between the incidence of acute respiratory infections (ARI) and age, there were 12 respondents (27%) who had mild ARI and were aged 41-50 years. Subject characteristics based on cross-tabulation between the incidence of acute respiratory infections (ARI) and education, there were 14 respondents (32%) who had mild ARI and had high school education. Subject characteristics based on cross-tabulation between the incidence of acute respiratory infections (ARI) and length of work, 15 respondents (34%) had mild ARI and worked > 5 years.

Spearman Rho statistical test results obtained p value = 0.015 <α = 0.05. This shows that there is a relationship between the use of masks and the incidence of ARI in marble stone workers in Besole Village, Besuki Tulungagung District.

**Discussion**

From the results of research conducted on 44 respondents, the majority of respondents, namely 28 respondents (63.6%), occasionally used masks properly for marble stone workers in Besole Village, Besuki Tulungagung District.

According to Tarwaka 2008, personal protective equipment is useful for protecting all or part of the body from the possibility of exposure to potential work environment hazards from work-related accidents and diseases. Respiratory protective equipment is used to protect the respiratory from the risk of exposure to contaminated or toxic gases, vapors, dust or air, corrosion, or stimuli. According to Harnawanti in 2009, masks are used to reduce exposure to dust or larger particles that enter the respiratory tract. According to Miftakhurizka (2014) tenure has a positive effect on performance, with the longer the personal tenure the more experienced in carrying out their duties.

The education of most respondents with high school education was 21 respondents (47.7%). The respondent's education includes the middle level where someone with secondary education knows a lot about the risks of work so be careful in carrying out work by following applicable rules and knowing how to maintain health for yourself.

Education can be interpreted as a process of assistance provided by adults to immature children reach maturity. The higher a person's education level, the easier it is for person to receive information so the more knowledge he has (Notoatmodjo, 2010).

Someone understands about personal protective equipment when working which is useful for avoiding work accidents, where work accidents can occur at any time. If we are negligent in wearing personal protective equipment in the event of a work accident, our bodies are not protected, especially those working in the manufacture of marble, which produces dust and dust particles that can irritate the eyes and respiratory tract.

Based on the length of work at the marble stone company, the majority of respondents worked > 5 years, a total of 27 respondents (61.4%), someone who has worked for more than 5 years will understand and understand more about the benefits of using personal protective equipment in the form of masks where respondents who have worked for a long time in a marble stone company understand about their work and the risks arising from working in a marble stone company. Exposure to dust is hazardous and can be avoided by wearing personal protective equipment in whole or in part to isolate the body from potential hazards from the workplace.

According to Abraham (2008) someone does something because of a certain encouragement or motive. This urge arises because it is based on needs, which are grouped as follows: Biological needs, these needs are basic needs or physiological needs (the need to eat and drink, the need for housing, the need for clothing, the need for sex), Social needs, which include for protection, the need to get along with other people, the need for affection/love, the need to be recognized by their group, and the third is a spiritual need which includes the need for religion, the need for education, the need for prestige/prestige and so on.

Working period > 5 years, most of the respondents, 20 people (45%), use masks occasionally, someone who has working experience > 5 years should be more professional by using masks while working. This is not in accordance with the theory because respondents who work in marble stone companies feel uncomfortable wearing masks every day, with this discomfort it makes people lazy to wear masks. It is assumed that someone who wears a mask rarely experiences complaints of illness, especially ARI.

From the results of research conducted on 44 respondents, half of the respondents, namely 22 respondents (50%) were exposed to mild ARI in marble stone workers in Besole Village, Besuki Tulungagung District.

Based on table 7 regarding the cross-tabulation between the incidence of ARI and age, there were 12 respondents (27%) affected by mild ARI aged 41-50 years. According to Departemen Kesehatan RI (2011) ARI can attack all humans, both men, and women at all age levels, especially at the age of less than 5 years and the elderly because in toddlers the immune system of toddlers is more vulnerable than adults so they are easy to suffer from ARI, while in the elderly there is a decrease in immunity.

At the age of 41-50 years, including pre-elderly, where at this age there has been a decrease in body resistance so that they often experience mild ARI. Based on Table 8 concerning the cross-tabulation between the incidence of ARI and education, there were 14 respondents (32%) with mild ARI in high school education.

According to Departemen Kesehatan RI (2011) ISPA is also influenced by education. Most of the respondents had a high school education and 21 respondents (47.7%) with secondary education. The respondents knew the causes of the emergence of ARI caused by viruses. The higher a person's education, the more concerned with health, and perceptions about health and illness. For someone who is sick, the important thing is to deal with the disease and determine the treatment measures to be taken, how to treat if you get sick, and prevent you from getting sick, namely by maintaining the cleanliness of the home and work environment to maintain humidity, room temperature, lighting, adequate ventilation. when working indoors, the presence of cigarettes and dust. Some respondents suffer from mild ARI because it can be caused by a lack of knowledge in preventing and treating ARI.

Based on Table 9 concerning the cross-tabulation between the incidence of ARI and the length of work, there were 15 respondents (34%) who had mild ARI and worked for > 5

years. According to Yudarmawan (2012) working for many years can exacerbate the respiratory health conditions of workers due to the frequent exposure to dust every day

Long working hours in the manufacture of marble will make a person often exposed to dust, frequent exposure to dust will cause a person to be susceptible to disease, especially ISPA. According to Departemen Kesehatan RI (2013) ISPA can be caused by air pollution or dust. Dust mixed with viruses and bacteria is inhaled through the nose into the lungs so many workers work in places with high air pollution. According to the WHO in 2012, ISPA sufferers experience fever, cough, and often sore throat, coryza (runny nose), shortness of breath, wheezing, or difficulty breathing. According to the RI Ministry of Health in 2011 dust particles can cause pneumonia, respiratory system disorders, eye irritation, allergies, and chronic bronchitis. According to Yudarmawan (2012), ARI is also influenced by economic status and education.

Based on the results of research on 44 respondents, the results of the Spearman Rho statistical test obtained p value = 0.015 <α = 0.05. This shows that there is a relationship between the use of masks and the incidence of ARI in marble stone workers in Besole Village, Besuki Tulungagung District.

According to A.M. Sugeng Budiono (2013) workers feel uncomfortable wearing masks. Feelings and complaints that are felt give different responses, resulting in a reluctance to use it. According to Febrianto W., (2015) reluctance to use personal protective equipment (PPE) can cause ARI because dust contained in the workplace enters through the respiratory tract which then circulates throughout the body or important organs such as the lungs. Harmful dust inhalation can be associated with certain jobs that can harm lung health.

From the explanation above, it can be seen that the use of masks by marble stone workers provides protection against themselves from the emergence of diseases caused by the processing of marble stone. Self-protection by using a mask will reduce the risk of work and the results of work. The use of personal protective equipment masks are often ignored because they feel uncomfortable and uncomfortable. and t-shirts that feel comfortable make workers enjoy doing their jobs. Wearing masks made by factories feels uncomfortable so workers are lazy to wear them.

An environment that contains a lot of dust makes a person have to be more careful because dust particles can cause pneumonia, respiratory system disorders, eye irritation, allergies, chronic bronchitis. Self-protection by wearing a mask provides protection from disease so that workers can work properly. Marble stone workers understand the benefits of wearing masks so that disease rarely affects workers so that workers can make a good living without having to experience illness or illness caused by work risks.

Someone who wears a mask occasionally can get sick because exposure to dust that enters the respiratory tract will settle in the lungs for a long time, causing respiratory problems, namely mild ARI where respondents often experience fever, coughs and colds. The cough that is often experienced by respondents is rarely felt. If you experience a cough, you are only given a cough medicine purchased at the shop and you are still carrying out your usual activities and still working. If the cough does not get optimal treatment for a long time, over time other respiratory diseases will appear such as asthma, bronchitis, tuberculosis and other respiratory disorders that affect workers' health and work productivity.

## CONCLUSION

The use of masks by marble stone workers in Besole Village, Besuki District, the majority of respondents, namely 28 respondents (64%) occasionally used masks properly. The incidence of ISPA in marble stone workers in Besole Village, Besuki District, half of the respondents, namely 22 respondents (50%) had mild ISPA. The relationship between the use of masks and the incidence of ISPA among marble stone workers in Besole Village, Besuki subdistrict, with the results of the Spearman Rho statistical test, obtained a probability p value

of $0.015 < \alpha = 0.05$. This shows that there is a relationship between the use of masks and the incidence of ARI in marble stone workers.

## RECOMMENDATION

Recommendations that can be given for further research is to provide knowledge to the owner of the company about the risks of harm to his workers.

## ACKNOWLEDGMENT

We thank the various parties who have helped carry out this research so that this research activity runs smoothly.

## REFERENCE

A.M. Sugeng Budiono. (2013). *Bunga Rampai Higiene Perusahaan Ergonomi (HIPERKES) dan Kesehatan dan Keselamatan Kerja*. Universitas Diponegoro.

Abraham, M. (2008). *Seri manjemen sumber daya manusia* (12th ed.). Penerbit Salemba Empa.

Anugrah. (2013). *Manajemen Kesehatan Kerja dan Alat Pelindung Diri*.

Budiono. (2010). *No Title*. http://milyandra.wordpress.com/2009/02/27/kesehatan- dan keselamatankerja

Departemen Kesehatan RI. (2011). *Pedoman Pemberantasan Penyakit ISPA untuk Penanggulangan Pneumonia*. Departemen Kesehatan RI.

Departemen Kesehatan RI. (2013). Upaya Kesehatan Kerja Sektor Informal di Indonesia. In *Materi Upaya Kesehatan Kerja*. Kementrian Kesehatan RI.

Dinas Kesehatan Tulungagung. (2017). *Laporan Tahunan Tahun 2016 Edisi 2017* (pp. 27–35). DKK Tulungagung.

Febrianto W., M. I. dan M. (2015). Pada Balita di Wilayah Kerja Puskemas Wonosari I Kabupaten Gunungkidul 2014. *Jurnal Gizi Dan Dietetik Indonesia*, *3*(2), 113–118.

Hasanah, L. (2019). Pengaruh Penggunaan APD Masker dengan Kejadian ISPA pada Pekerja Meubel di Desa Karduluk Tahun 2019. *Wiraraja Medika: Jurnal Kesehatan*, *9*(2), 63–66. https://doi.org/https://doi.org/10.24929/fik.v9i2.800

Miftakhurizka, M. (2014). *Hubungan lama paparan debu kayu dan kedisiplinan pemakaian masker dengan penurunan kapasitas fungsi paru pada pekerja mebel ud. mita furniture kalinyamatan jepara*. Universitas Muhammadiyah Surakarta.

Notoatmodjo, S. (2010). *Ilmu Perilaku Kesehatan*. Rineka Cipta.

Nursalam. (2011). *Konsep dan penerapan metodologi penelitian ilmu keperawatan*. Salemba Medika.

Retno Pujiani, T. (2016). *HUBUNGAN ANTARA PENGGUNAAN APD MASKER, KEBIASAAN MEROKOK, DAN VOLUME KERTAS BEKAS DENGAN KEJADIAN ISPA (Studi Kasus di Sentra Pengepakan Kertas Bekas Desa Terban Kecamatan Jekulo Kabupaten Kudus)* [Universitas Negeri Semarang]. http://lib.unnes.ac.id/28142/1/6411412148.pdf

Sri Fuqoha, I. et al. (2017). Hubungan Paparan Debu Kayu Dengan Kejadian Infeksi Saluran Pernapasan Akut (Ispa) Pada Pekerja Mebel Di Pt. X Jepara Peminatan Keselamatan dan Kesehatan Kerja. *Jurnal Kesehatan Masyarakat (e-Journal)*, *5*(1). http://ejournal-s1.undip.ac.id/index.php/jkm 378

WHO. (2013). *Pencegahan dan Pengendalian Infeksi Saluran Pernafasan Akut (ISPA) yang Cenderung Menjadi Epidemi dan Pandemi di Fasilitas Pelayanan Kesehatan*.

Yudarmawan, I. N. (2012). *Pengaruh Faktor-Faktor Sanitasi Rumah Terhadap Kejadian Penyakit ISPA Pada Anak Balita (Study Dilakukan pada Masyarakat di Desa Dangin Puri Kangin Kecamatan Denpasar Utara Kota Denpasar Tahun 2012)*.