

The Relationship between Knowledge Level and Work Attitude with the ISPA Event at Batusplit Breaker

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Abstract: Background: Pulmonary disease disorders happened in working activity are mostly caused by dusts, though there is the lack of existing data. Acute Respiratory Tract Infection (ARI) is an acute respiratory infection which was occurred in 14 days which infect one of the respiratory track. More than 4,250,000 deaths were caused by ARI. Indonesia in the 6th position with the most cases of ARI with 6 million cases. **Research Purposes:** This research is aimed to determine the relation between knowledge and working attitude to ARI incidents experienced by split stone breakers. **Research Methods:** This research was a case control research. The case group of this research was the split stone breakers which are positively diagnosed ARI by doctor and have been recorded in the medical report of Lalowaru health center, Moramo sub-district. The control group of this research was the split stone breakers which are not positively diagnosed ARI by doctor and have been recorded in the medical report of Lalowaru health center, Moramo sub-district. The total of samples in this research were 152 people, consisting of 76 people in case group and 76 people in control group. The instrument of this research was questionnaire consist of knowledge and working attitude question. The data analysis of this research was used to determine the relation between variables which was seen from odds ratio value.. **Research result:** The result of the bivariate analysis showed that there was a relation between knowledge level and ARI incident (P-Value: 0,000, OR : 4,016, CI 95% : 2,032-7,938), and there was a relation between working attitude and ARI incident (P-value: 0,001, OR : 3,111, CI 95% : 1,575 – 6,146). **Conclusion:** The conclusion of this research is there was a relation between the knowledge and the working attitude with the ARI incidents experienced by split stone breakers.

Keywords: ARI, Knowledge, Working Attitude.

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I. Introduction

Occupational Disease (PAK) is a disease caused by work-related environmental factors. This includes acute and chronic diseases caused by respiration, digestion, or direct contact with toxic chemicals or (Dessler in Kusuma, 2010). Pulmonary disease is one of the Work Diseases, with a proportion of 10-30%. The ILO has detected that about 40,000 new cases of pneumoconiosis occur worldwide each year. In 1996 in the UK found 330 new cases of occupational lung disease (Hapsari, 2009).

Lung disease or occupational lung disorders in Indonesia caused by dust are expected to be considerable although there is insufficient data. The morbidity rate reaches 70% of workers exposed to high dust. Most occupational lung disease has a serious consequence of pulmonary function decline, with the main symptoms being shortness of breath (Hapsari, 2009). Acute Respiratory Infection (ARI) is an acute infection process lasting for approximately 14 days that attacks one part and / or more of the respiratory tract from the nose to the lung bag (alveoli) such as adnexal tissue such as sinuses / cavities around the nose, middle ear cavity and pleura (MOH RI, 2011).

ISPA ranks third cause of death in the world (7.1%) and the first cause of death in developing countries (11.2%). Over 4,250,000 deaths worldwide each year are caused by ISPA. Pneumonia including ARI in the United States ranks sixth from all causes of death, and is ranked first among infectious diseases (Agussalim, 2012). Indonesia ranks 6th countries with the most cases of ARI in the world reach 6 million cases per year (Rudanet.al Bulletin WHO, 2008). The prevalence of national ARI disease is 25.50% (MOH, 2008). ARI cases among workers are also commonly found, around 17,600 people from 22,000 members of Metro Jaya Police suffer from ISPA due to exposure to smoke of motor vehicles and other air pollution in a long time (Dewi, 2009). Based on polyclinic visit data at PT TAM SPLD in 2012 shows that ARI is the most common disease

that is 24% (Fitri and Anggarini, 2013). Clinical data of PT. Unitex in 2013 mentioned that ARI disease is a disease with the most patient visits (Monthly Report of PT Unitex, 2013).

ISPA is the most common disease in the list of 10 most diseases in Puskesmas or Hospital in Southeast Sulawesi Province. Based on the 10 most diseases in Southeast Sulawesi, the ISPA ranks first with the number of cases 137,123 (Southeast Sulawesi In Figures, 2013). The initial observation conducted in North Moramo Sub-district of South Konawe Regency found that the total number of stone-breaking workers was 571 people, with an average age above 18 years. From Lalowaru Puskesmas data, North Moramo sub district in 2015 obtained ISPA disease is the most disease with 803 cases / visit. The results of interviews on 30 stone breakers showed that the whole stone breakers had less knowledge about ISPA, and all of them were unaware of a good working attitude in doing their work to avoid the disease.

The results of Basri and Erniatin (2014) study on the relationship of knowledge and occupational health attitude with PAK indicate that there is a correlation between knowledge and attitude of occupational health with PAK incidence in brick workers in Plosokerep village Lungsalam block Terisi districts Indramayu 2014.

Other research conducted by Fitri and Anggarini (2013) on the relationship between behavior and physical environment of the workplace to the incidence of ARI states that there is no relationship of knowledge to the occurrence of ARI on PTTAM SPLD workshop, and there is a relationship between work attitude towards the incidence of ARI in employees PT .TAM SPLD 2013.

Based on this and the absence of data on the incidence of ARI in stone breakers in Southeast Sulawesi, the authors are interested in conducting research to examine and analyze how big the "Relationship Level Knowledge and Work Attitudes with ARI Incidents On Superb Stone Breaker"

II. Research Methods

The type of this study was an observational analytical study with a case-control study in which the study began by identifying the affected group of disease or certain effects (cases) and the group without effects (control) then identifying the risk factors occurring in the past, so as to explain why the case exposed effect while the control is not affected effect.

This research was conducted in November - December 2016, with the location or place of research is North Moramo Sub - District of South Konawe Southeast Sulawesi Province. The population in this study were 152 people consisting of 76 people in the case group, and 76 people in the control group, the sampling technique using proportional sampling technique

III. Results

UNIVARIATE ANALYSIS

a. Characteristics of respondents by Sex

Based on the results of research that has been done in North Moramo District, the characteristics of respondents by sex can be seen in Table 1

Table 1. Characteristics of respondents by Sex

Sex	Casse		Control	
	n	%	n	%
Male	35	46,05	37	48,68
Female	41	53,95	39	51,32
amount	76	100	76	100

Resource : Primary data, December 2016

From table 1 above it is known in the case group, female respondents more dominant than male respondents that is as much 41 respondents (53,9%), as well as in control group, get female respondent more dominant than male respondent that is as much 39 respondents (51.3%).

b. Characteristics of respondents by Age

Table 2 shows the characteristics of respondents based on their age.

Table 2 Characteristics of respondents by Age

Usia (Tahun)	Kasus		Kontrol	
	n	%	n	%
19-25	14	18,42	15	19,74
26-30	13	17,11	14	18,42
31-35	17	22,37	10	13,16
36-40	13	17,11	15	19,74
41-45	11	14,47	11	14,47

46-50	3	3,95	6	7,89
51-55	5	6,58	5	6,58
Jumlah	76	100	76	100

Resource : Primary data, December 2016

Based on table 2 above is known in the case group, dominated by respondents with age 36-40 years as many as 17 respondents (17.1%). While the control group, dominated by respondents aged 19-25 years as many as 15 respondents (19.7%), and respondents aged 36-40 years as many as 15 respondents (19.7%).

c. Characteristics of respondents by education level

Based on table 3 respondents recorded according to level of education in case group, dominated by respondents with level of education finished elementary school as much 22 respondents (28,9%). While in the control group, dominated by respondents with junior high school education level as much as 29 respondents (38.1%).

Table 3. Characteristics of Respondents Based on Education Level

Level of Education	Case		Control	
	n	%	n	%
Not finished primary school	20	26,32	4	5,26
Graduated from elementary school	22	28,95	13	17,11
Not finished junior high school	7	9,21	17	22,37
Graduated from junior high school	18	23,68	29	38,16
Not finished high school	6	7,89	5	6,58
Graduated from high school	3	3,95	8	10,53
Jumlah	76	100	76	100

Resource : Primary data, December 2016

d. Characteristics of respondents by sex and education level

Based on Table 4 it is known that in case respondents, respondents knowledge about ARI is generally (60.53%) less, especially in respondents with female gender that is as much as 34.21%. While on the control respondent, respondents knowledge about ISPA is generally good (72,37%), especially on responden with female gender that is as much as 38,16%.

Table 4. Characteristics of respondents by sex and education level

Jenis Kelamin	Kasus				Kontrol			
	Kurang	%	Baik	%	Kurang	%	Baik	%
Laki-laki	20	26,32	15	19,74	11	14,47	26	34,21
Perempuan	26	34,21	15	19,74	10	13,16	29	38,16
Jumlah	46	60,53	30	39,47	21	27,63	55	72,37

Resource : Primary data, December 2016

Based on Table 4 it is known that in case respondents, respondents knowledge about ARI is generally (60.53%) less, especially in female respondents that is as much as 34.21%. While on the control respondent, knowledge of responder about ISPA is generally good (72,37%), especially on female respondents that is as much as 38,16%.

e. Characteristics of Respondents by age and level of knowledge

Based on Table 5 it is known that in case respondents, respondents knowledge about ARI is generally (60,53%) less, especially at age between 19 year to 45 year that is as much as 55,26%. While on the control respondent, knowledge of responder about ISPA generally (72,37%) good, especially at age between 19 year to 45 year that is 61,85%.

Tabel 5. Karakteristik Responden Berdasarkan Usia Dan Tingkat Pengetahuan

Usia	Kasus				Kontrol			
	Kurang	%	Baik	%	Kurang	%	Baik	%
19-25	9	11,84	5	6,58	3	3,95	12	15,79
26-30	7	9,21	6	7,89	3	3,95	11	14,47
31-35	13	17,11	4	5,26	3	3,95	7	9,21
36-40	6	7,89	7	9,21	6	7,89	9	11,84
41-45	7	9,21	4	5,26	3	3,95	8	10,53
46-50	1	1,32	2	2,63	2	2,63	4	5,26
51-55	3	3,95	2	2,63	1	1,32	4	5,26
Jumlah	46	60,53	30	39,47	21	27,63	55	72,37

Resource : Primary data, December 2016

f. Characteristics of respondents by level of education and level of knowledge

Based on Table 6 it is known that in case respondents, respondents' knowledge about ISPA is generally (60.53%) less, especially for those who do not finish primary school and elementary school is 34.21%. While on the control respondent, the knowledge of responder about ISPA is generally (72,37%) good, especially on the respondents who do not finish junior high and finish junior high as much as 44,74%.

Tabel 6. Karakteristik Responden Berdasarkan Jenjang Pendidikan Dan Tingkat Pengetahuan

Jenjang Pendidikan	Kasus				Kontrol			
	Kurang	%	Baik	%	Kurang	%	Baik	%
Tidak Tamat SD	10	13,16	10	13,16	1	1,32	3	3,95
Tamat SD	16	21,05	6	7,89	3	3,95	10	13,16
Tidak Tamat SMP	4	5,26	3	3,95	4	5,26	13	17,11
Tamat SMP	11	14,47	7	9,21	8	10,53	21	27,63
Tidak Tamat SMA	4	5,26	2	2,63	5	6,58	0	0,00
Tamat SMA	1	1,32	2	2,63	0	0,00	8	10,53
Jumlah	46	60,53	30	39,47	21	27,63	55	72,37

Resource : Primary data, December 2016

g. Characteristics of respondents by sex and work attitude

Based on Table 7 it is known that the respondents in the case, respondents working attitude generally (52.63%) negative, especially on female respondents that is as much as 28.95%. While on the control respondent, respondents working attitude generally (73.68%) positive, especially on female respondents that is as much as 39.47%.

Tabel 7. Karakteristik responden berdasarkan jenis kelamin dan sikap kerja

Jenis Kelamin	Kasus				Kontrol			
	Negatif	%	Positif	%	Negatif	%	Positif	%
Laki-laki	18	23,68	17	22,37	11	14,47	26	34,21
Perempuan	22	28,95	19	25,00	9	11,84	30	39,47
Jumlah	40	52,63	36	47,37	20	26,32	56	73,68

Resource : Primary data, December 2016

h. Characteristics of respondents by age and work attitude

Based on Table 8 it is known that the respondents in the case, respondents working attitude generally (52.63%) negative, especially at age between 19 years to 40 years that is as much as 40.78%. While on the control respondents, respondents working attitude generally (73.68%) positive, especially at age between 19 years to 40 years that is as much as 63.15%.

Tabel 8. Karakteristik Responden Berdasarkan Usia dan Sikap Kerja

Usia	Kasus				Kontrol			
	Negatif	%	Positif	%	Negatif	%	Positif	%
19-25	6	7,89	8	10,53	3	3,95	12	15,79
26-30	6	7,89	7	9,21	3	3,95	11	14,47
31-35	13	17,11	4	5,26	3	3,95	7	9,21
36-40	6	7,89	7	9,21	6	7,89	9	11,84
41-45	5	6,58	6	7,89	2	2,63	9	11,84
46-50	2	2,63	1	1,32	2	2,63	4	5,26
51-55	2	2,63	3	3,95	1	1,32	4	5,26
Jumlah	40	52,63	36	47,37	20	26,32	56	73,68

Resource : Primary data, December 2016

i. Characteristics of respondents by education and work attitude

Based on Table 9 it is known that respondents in the case, respondents working attitude generally (52.63%) negative, especially on respondents who did not complete primary school, finished primary school, and finished SMPA that is as much as 43.42%. While on the control respondents, respondents working attitude generally (73.68%) positive, especially in respondents who did not complete junior high school and junior high as much as 46.06

Tabel 9.Karakteristik Responden Berdasarkan Jenjang Pendidikan Dan Sikap Kerja

Jenjang Pendidikan	Kasus				Kontrol			
	Negatif	%	Positif	%	Negatif	%	Positif	%
Tidak Tamat SD	9	11,84	11	14,47	1	1,32	3	3,95
Tamat SD	14	18,42	8	10,53	3	3,95	10	13,16
Tidak Tamat SMP	3	3,95	4	5,26	4	5,26	13	17,11
Tamat SMP	10	13,16	8	10,53	7	9,21	22	28,95
Tidak Tamat SMA	4	5,26	2	2,63	5	6,58	0	0,00
Tamat SMA	0	0,00	3	3,95	0	0,00	8	10,53
Jumlah	40	52,63	36	47,37	20	26,32	56	73,68

Resource : Primary data, December 2016

IV. Results of Vicariate Analysis

a. Relationship between Knowledge Level and ISPA Event

Based on Table 10 it is known that from 76 case respondents, who have knowledge level less than 46 people (60,53%) and who have good knowledge level as much 30 people (39,47%). While from 76 respondents control, which has less knowledge level as much as 21 people (27,63%) and who have good knowledge level as much as 55 person (72,37%).

The probability value (p-value) generated is 0,000, smaller than the significance level (α) threshold value of 0.05. Furthermore, the value of Odd Ratio generated equal to 4,016 with 95% confidence level of OR value at interval 2,032 - 7,938 indicates that lower limit and upper limit value do not include value 1. The value indicates that batusuplit breaking community with knowledge level is less 4,016 times more risky exposed to incidence of ISPA from the suplit rock-breaking community who have a good level of knowledge.

Based on the p-value and odd ratio produced, then H_0 is rejected and it is known that there is a significant relationship between the level of knowledge with the incidence of ISPA. The resulting odd ratio is greater than one ($OR > 1$), meaning that knowledge level is a risk factor for incidence of ISPA.

Tabel 10. Hubungan Tingkat Pengetahuan Dengan Kejadian ISPA

Tingkat Pengetahuan	Kejadian ISPA		P-Value	Odd Ratio	Convident Interval (95%)
	Kasus	Kontrol			
Kurang	46 (60,53%)	21 (27,63%)	0,000	4,016	2,032-7,938
Baik	30 (39,47%)	55 (72,37%)			
Jumlah	76 (100%)	76 (100%)			

Resource : Primary data, December 2016

b. Relationship Between Work Attitudes with Incidence of ISPA

Based on Table 11 it is found that in the case group, which has a negative work attitude of 40 people (52.63%) and who has a work attitude of 36 people (47.37%). While in the control group, which has negative work attitude as many as 20 people (26,32%) and who have positive work attitude as much 56 people (73,68%).

The probability value (p-value) generated is 0.001, smaller than the significance level (α) threshold value of 0.05. Furthermore, the value of Odd Ratio generated by 3.111 with 95% confidence level of OR value at interval 1,575 - 6,146 indicates that lower limit and upper limit value do not include value 1. The value indicates that community of stone suplit stone that has negative work attitude 3,111 times are more at risk of ISPA than in supbel rock-breaking communities with a positive work attitude. Based on the p-value and the resulting odd ratio, H_0 is rejected and it is known that there is a significant relationship between work attitude and the incidence of ISPA. The resulting odd ratio is greater than one ($OR > 1$), meaning that work attitude is a risk factor for incidence of ISPA.

Tabel 11. Hubungan antara Sikap Kerja dengan Kejadian ISPA

Sikap Kerja	Kejadian ISPA		P-Value	Odd Ratio	Convident Interval (95%)
	Kasus	Kontrol			
Negatif	40 (52,63%)	20 (26,32%)	0,001	3,111	1,575-6,143
Positif	36 (47,37%)	56 (73,68%)			
Jumlah	76 (100%)	76 (100%)			

Resource : Primary data, December 2016

V. Discussion

a. Relationship Between Knowledge Levels with ISPA Incidence At Suplit Stone Breaker

In this study it is known that the test value of odds ratio obtained is 4.016 which shows that the risk of respondents who have knowledge level is less 4,016 times greater than the respondents who have a good level of knowledge. The value of lower limit 2,032 and upper limit of 7,938 at 95% confidence level indicating value between lower limit and upper limit does not include value 1, meaning that there is a significant relationship between knowledge level and the incidence of ISPA in suplit rock breaker.

The results of this study are in line with the research of Aderita and Irdawati (2012) which states that there is a relationship of knowledge level with the incidence of ISPA in children under five in Pucangan Village. This study is also in line with research by Andriani and Devita (2014) stating that there is a relationship between mother's knowledge level with the incidence of ISPA in infants at Tigo Baleh Puskesmas Working Area Bukittinggi.

Knowledge is a result of knowing that is obtained through sensing. If an action is based on a knowledge then the behavior will last, otherwise if the action is not based on knowledge and awareness it will not last long (Silviana, 2014). The higher one's knowledge about ISPA, then the incidence of ISPA will be lower, otherwise the lower one's knowledge about ISPA, hence the higher incidence of ISPA (Andriani and Devita, 2014).

b. Relationship Between Work Attitudes with ISPA Incidence At Suplit Stone Breaker

In this research, it is known that the odds ratio test value is 3.111 which shows that the risk of respondents who have negative work attitude is 3,111 times bigger compared to respondents who have positive work attitude. The lower limit value of 1,575 and the upper limit of 6,146 at the 95% confidence level indicating the value between the lower limit and upper limit does not include the value 1, meaning that there is a significant relationship between work attitude and the incidence of ISPA in suplit stone breaker.

The results are in line with research Fitri and Anggarini (2013) stating that there is a relationship attitude with the incidence of ISPA in employees of PT. TAM SPLD Bekasi. This study is also in line with research conducted by Aderita and Irdawati (2012) which states that there is a relationship of mother attitude with the incidence of ISPA in children under five in Pucangan Village Work Area Puskesmas Kartasura I.

Attitudes in the community encourage them to take acts of acute respiratory infection, so that people who have a positive attitude toward ISPA, will be responded by doing prevention against ISPA properly and correctly (Taarelluan et al, 2016).

VI. Conclusion

There is a correlation between knowledge level with incidence of ISPA in suplit stone breaker and there is correlation between work attitude with incidence of ISPA at suplit stone breaker.

VII. Suggestion

It needs to be preventive action carried out by the stone-breaking community and local health authorities. Prevention can be done with the use of Personal Protective Equipment (PPE) for suplit rock solvers and improvement of extension programs on ISPA for local health authorities.

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