Original Research Article

Analysis of Implementation of OHAS School Counseling to Knowledge, Learning Achievement and Risk Factors of Accident

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ABSTRACT

Occupational Health and Safety (OHAS) counseling in schools will make the students understand the importance of OHAS at school, furthermore that they can identify the risk factors of accidents in the school which is expected to reduce risk accidents in the schools. One of the causes of accidents due to the human factor itself is unsafe behavior at work. The purpose of this research is analyzes of implementation of OHAS schools counseling to knowledge, learning achievement and risk factors of accident in fifth grade at integrated Islamic elementary school Qardhan Hasana Banjarbaru South Kalimantan.This research method is Quasi Experimental design with The NonEquivalent Control Group. This design uses two groups, in which the first and second group is given a pretest and posttest, but only one group were given treatment (counseling). Population and population samples in this study were all students of fifth grade in the new school year later by 70 students. Comparison of the experimental group and the control group was 1:1 so that of the 70 students were divided into 35 experimental groups and 35 control group. Wilcox on test results showed significant difference of knowledge, academic achievement and risk factors of accidents before and after OHAS schools counseling with p value (0.000; 0.000; 0.000) < 0.005. School parties are expected to support the implementation of the OHAS School continuously to the whole class with tailored language to the grade level of students.

Keywords: OHAS schools, knowledge, learning achievement, integrated islamic elementary school, risk factors of accident.

INTRODUCTION

School is a place of learning and teaching that has the potential for accidents and diseases in the school environment due to the lack of knowledge of students about the harmful effects of unsafe school environment. [1] Countries like Australia has introduced a system of health and safety in the school environment with the goal that students can recognize the risk of accidents in schools so as to minimize the risk of accidents, furthermore students also have to report the accident they found to the teacher or staff at school to be addressed by school. [2] Beside Australia, Hong Kong has also implemented a system of OHAS School; one of the methods they use in applying the safety and health in the schools is through the provision of education about health and safety to students at school. [2]

Knowledge of OHAS must be instilled early on the students will be able to apply in daily life when they indulge. Implementation of K3 in the learning

process in schools will familiarize students to apply K3 in activities. One way to improve the knowledge of students is to do counseling. [3]

OHAS counseling in schools will make the students understand the importance of OHAS at school, furthermore that they can identify the risk factors of accidents in the school which is expected to reduce risk accidents in the schools. One of the causes of accidents due to the human factor itself is unsafe behavior inside and outside of school. [4] This is supported by the results of research Sholihah and Djohan (2013) which states that 80% -85% of accidents are caused by negligence or human error factor. [5] Negligence or fault of the human factor is one of caused by a lack of knowledge, [6] necessitating an effort to increase students' knowledge with counseling methods. Counseling itself is one way to increase someone knowledge including health and safety. [7] This is supported by research Hasanah (2010), an increase of knowledge before and after counseling Health and Safety at batik craftsmen (p=0,002<0,005). [8]

Implementation of OHAS at school aims to create a school environment that is safe and convenient for students, teacher and staff at the school and will eventually decrease the risk of accidents and can improve student achievement (2). Effect of the application of the OHAS schools will have an impact on risk reduction in accidents. This is supported by research Robson et al (2007)in research they found a 24% decline in illness or injury and a decrease of 34% in the case of loss of time during the 3 years, when applying OHSMS program (*Occupational Health and Safety Management System*) [9]

Integrated Islamic elementary schools Qardhan Hasana Banjarbaruan Islam-based elementary school with a full day of school hours, so do not rule out the possibility of accidents and did not secure a big chance. Accidents can occur because of fatigue and boredom. With the number of fifth grade students as many as 70 students were divided into two classes of 35 Va students and 35 Vb students. Based on interviews with several students of fifth grade problems occur there is still a lack of knowledge of students on safety and health in the school due to the lack of education on how to maintain the provision of safety and health. It is seen from there are 6 students who slip as slippery floor, slip fatal if the head student, beside that student's behavior is also often hastily shoving that occurs between friends or often run which resulted in some students fall is 14 students. Fifth grade students are students who already know about reading, writing; therefore it is easier to be sampled in the study filled out questionnaires after counseling held on safety and health in schools. [10]

Based on the background above needs to be done research analysis of implementation of OHAS schools counseling to knowledge, learning achievement and accident risk factors (observasional study on fifth grade students at Integrated Islamic Elemantary School QardhanHasanaBanjarbaru South Kalimantan).

MATERIALS AND METHODS

This research is Quasi Experimental design with The NonEquivalent Control Group. This design uses two groups, in which the first and second group is given a pretest and posttest. [11]

The sample is total population in this research were all students of fifth grade at integrated Islamic elementary school Qardhan Hasana Banjarbaru South Kalimantan as many as 70 students consisting of two classes of 35 students Va and 35 students Vb. Comparison of the experimental group and the control group was 1:1 so that of the 70 students were divided into 35 experimental group and 35 control group. [12]

Instruments in this study was a questionnaire containing materials on occupational safety and health in schools and their risk factors like: definition of safety and health in schools, safety and health benefits, risk factors causes of accidents and how to prevent accidents. Knowledge questionnaire will be provided before and after counseling while learning achievement questionnaire and accident risk factors will be given before counseling and one month after the counseling holding, it is intended to look at changes in the behavior of respondents as it counseling provides.

The variable in this research is divided into the independent variables are occupational health and safety education schools, while the dependent variable is the knowledge, learning achievement and risk factors of accidents.

Data collected immediately conducted editing to examine the completeness and truth of the data. Furthermore data tabulation and analysis using the Wilcoxon test with a 95% degree of confidence to see the differences or the influence of occupational safety and health School counseling to knowledge, learning achievement and risk factors of accidents.

RESULTS AND DISCUSSION
A. Univariate Analysis: In this research, the focus of research is knowledge, learning achievement and risk factors of accidents before and after OHAS Schoolcounseling. Overview of knowledge, learningachievement and risk factors of accidents before and after OHAS School counseling as follows.
1. Knowledge: Based on the results of questionnaires from 70 respondents, the

obtained frequency distribution of knowledge by the respondents can be seen in Table 1.

Based on table 1 shows that in the treatment group before the counseling 26 people (74.3%) have enough knowledge and after counseling 29 people (82.9%) have a good knowledge. The control group before the counseling 26 people (74.3%) has enough knowledge and after counseling 22 people (82.9%) have enough knowledge.
2. Learning Achievement: Based on the results of questionnaires from 70 respondents, the obtained frequency distribution of learning achievement by the respondents can be seen in table2.

Based on the table 2 shows that in the treatment group before the counseling 19 people (54.3%) have medium learning achievement and after counseling 20 people (57.1%) have medium learning achievement. The control group before the counseling19 people (54.3%) have medium learning achievement and after counseling 23 people (65.7%) have medium learning achievement.
3. Risk Factors of Accidents: Based on the results of questionnaires from 70 respondents, the obtained frequency distribution of risk factors of accidents by the respondents can be seen in table 3.

Based on the table 3. shows that in the treatment group before the counseling 19 people (54.3%) have medium risk factors of accidents and after counseling 26 people (74.3%) have low risk factors of accidents. The control group before the counseling 19 people (54.3%) have medium risk factors of accidentsand after counseling 23 people (65.7%) have medium risk factors of accidents.

Table1.Frequency Distribution of Respondents by Knowledge

No.	Knowledge	Treatment		Control	
		Before	After	Before	After
1	Very Good	0 (0%)	1 (2.9%)	0 (0%)	0 (0%)
2	Good	5 (14.3%)	29 ((82.9%)	4 (11.4%)	8 (22.9%)
3	Enough	26 (74.3%)	5 (14.3%)	26 (74.3%)	22 (62.9%)
4	Less	4 (11.4%)	0 (0%)	5 (14.3%)	5 (14.3%)
5	Very Less	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Total		35	35	35	35

Table2.Frequency Distribution of Respondents by Learning Achievement

No.	Achievement	Treatment		Control	
		Before	After	Before	After
1	Less	10 (28.6%)	1 (2.9%)	9 (25.7%)	7 (20%)
2	Medium	19 54.3%)	20 (57.1%)	19 (54.3%)	23 (65.7%)
3	Good	6 (17.1%)	14 (40%)	7 (20%)	5 (14.3%)
Total		35	35	35	35

Table3.Frequency Distribution of Respondents by Risk Factors of Accident

No.	Risk Factors of Accidents	Treatment		Control	
		Before	After	Before	After
1	Low	8 (22.9%)	26 (74.3)	9 (25.7%)	7 (20%)
2	Medium	19 (54.3%)	8 (22.9)	19 (54.3%)	23 (65.7%)
3	High	8 (22.9%)	1 (2.9%)	7 (20%)	5 (14.3%)
Total		35	35	35	35

Table4.The Differences Knowledge Before and After OHAS School Counseling

Test Statistics[b,c]				
				Knowledge – Knowledge
Z				-5.357[a]
Asymp. Sig. (2-tailed)				**.000**
Monte Carlo Sig. (2-tailed)	Sig.			.000
	95% Confidence Interval		Lower Bound	.000
			Upper Bound	.042
Monte Carlo Sig. (1-tailed)			Sig.	.000
	95% Confidence Interval		Lower Bound	.000
			Upper Bound	.042
a. Based on negative ranks.				
b. Wilcoxon Signed Ranks Test				
c. Based on 70 sampled tables with starting seed 2000000.				

B. Bivariate analysis:

1. The differences control and treatment groups' knowledge before and after the safety and health education in schools:

Bivariate analyses were performed Wilcoxon test to determine differences in knowledge before and after OHAS School counseling. Wilcoxon test results can be seen in table4.

Data analysis using Wilcoxon test. This test is used as the parametric statistical data is not normally distributed. Data normality test results before and after counseling for knowledge variable Kolomogorov-Smirnov test with p value (0.000)> 0.05 then concluded the data is not normally distributed.

Wilcoxon test results with a confidence level of 95%, shows a difference of knowledge before and after OHAS School counseling with p value = 0,000. P value from Wilcoxon test results obtained Ho decision rejected (p <0.05), which means there is a significant difference of knowledge before and after OHAS School counseling.

This is because respondents are very concerned material presented when counseling, this can be seen from the enthusiastic respondents in the notice of counseling and provide feedback in the form of a question, so that the information can be received well.

Attention is very important in following counseling activities well and this will also affect on the received knowledge and interest in receiving counseling given, high attention to an information will make information received, so as to increase the knowledge of the respondent. [13,14] In addition to the environmental conditions that favor the availability of facilities such as counseling activities, choosing the right time, can increase someone knowledge. [15,16]

Safety and health counseling in schools is essential to increase the students' knowledge of how to maintain the safety and health of themselves, to avoid the risk of accidents or illnesses that can be caused in the school environment. Most of elementary school students still do not understand about how to maintain

safety and health, as well as to identify risk factors associated with accidents. [2] Therefore, knowledge of safety and health must be instilled early. One way to increase the knowledge of elementary school students about safety and health in schools through counseling. [17] This is supported by Hasanah research (2010) where an increase in knowledge before and after health and safety counseling on batik craftsmen. [9]

This research is in line with the results of the Cicilia, Salawati, Rahayu research (2012), Wilcox on test results are obtained p = 0.000 (<0.05) it means that there is a significant difference between knowledge before and after the health education in elementary school students. [18] In addition, research Widyawati (2010), Wilcoxon test results obtained p value = 0.000, it means that there are significant counseling of knowledge to elementary school students. [19] Trisnawati Akhmad, Kartini, Rashid Ansari research (2013) also supports this research where the results obtained statistical test p value = 0.000, it means that there are significant personal hygiene counseling to the level of knowledge of elementary school students. [20]

In addition, the extension involves the hear activities, speak and see which makes this method effective. Accepted knowledge can be the basis for custom development. Changes in knowledge can lead to changes in habits. Besides the children generally have a great curiosity in learning something. [21]

Elementary school students whose average age was 7-13 or 14 years, this age range is the future of the human intellect so that it can be said that at the age of 7-14 years is a good time to instill basic knowledge so that it can more effectively. [21]

2. The differences control and treatment groups learning achievement before and after the safety and health education in schools: Bivariate analyses were performed Wilcoxon test to determine differences in learning achievement before and after OHAS School counseling. Wilcoxon test results can be seen in table 5.

Data analysis using Wilcoxon test. This test is used as the parametric statistical data is not normally distributed. Data normality test results before and after counseling for learning achievement variable Kolomogorov-Smirnov test with p value (0.000) >0.05 then concluded the data is not normally distributed.

Wilcoxon test results with a confidence level of 95%, shows a difference of learning achievement before and after OHAS School counseling with p value = 0,000. P value from Wilcoxon test results obtained Ho decision rejected (p <0.05), which means there is a significant difference of learning achievement before and after OHAS School counseling.

Accident risk arises from several factors. Risk factors include (22): Human factors (personal factor), namely: less physical ability, mental and psychological; lack of knowledge and skill; stress; wrong motivation. Environmental factors namely: physical factors, namely, noise, lighting and others; chemical factors, namely dust, fumes and gases; biological factors are bacteria, viruses and parasites; Ergonomics and psychosocial.

Accidents are generally caused by the two main things that (unsafe human act) and (unsafe conditions). [22] Some research indicates that approximately 80-85% of work accidents are caused by human factors. [23] The cause of unsafe actions is the tendency of attitudes and behaviors that are not desirable in carrying out the work. While other occupational safety experts stated that unsafe acts typically generated by a low stance that prioritizes safety. [24]

One way to reduce / eliminate unsafe acts is through education or training. One way of education is through counseling. Through counseling given an

understanding and awareness implanted to act and behave in accordance instructions / safety procedures. [25]

Implementation of OHAS at school can create a school environment that is safe and convenient for students, teacher and staff at the school, which in turn will decrease the risk of accidents and can improve student achievement. [2] Effect of the implementation of the occupational safety and health schools will have an impact on risk reduction of accidents and the number of accidents.

Safety and health is a provision which must be owned by a student prior to the learning process. Sometimes the student is negligent in implementing safety and health in implementing education or learning process held in schools so as to cause accidents and causing disruption of the learning process. OHAS counseling will provide insight to the students that did not experience a disruption in the learning process and can improve learning achievement. [26]

3. The differences control and treatment groups risk factors of accidents before and after the safety and health education in schools: bivariate analyses were performed Wilcoxon test to determine differences in risk factors of accidents before and after OHAS School counseling. Wilcoxon test results can be seen in table6.

Data analysis using Wilcoxon test. This test is used as the parametric statistical data is not normally distributed. Data normality test results before and after counseling for risk factors of accidents variable Kolomogorov-Smirnov test with p value (0.000) >0.05 then concluded the data is not normally distributed.

Wilcoxon test results with a confidence level of 95%, shows a difference of risk factors of accidents before and after OHAS School counseling with p value = 0.000. P value from Wilcoxon test results obtained Ho decision rejected (p <0.05), which means there is a significant difference of risk factors of accidents before and after OHAS School counseling.

According to Suma'mur in Endroyo (2010) one of the factors that influence the occurrence of accidents are due to human action that is unsafe, one of which is caused by a lack of knowledge about health and safety in recognizing risk factors for accidents such as slippery floors, hasty and others. [24]

Good knowledge will make someone understand the occupational health and safety efforts in order to implement them in their environment. [17] With a good knowledge of the students are expected to implement safety and health efforts in schools so as to prevent and reduce the risk of accidents and occupational diseases in Schools. This is supported by studies Muhammad Rais, et al (2009) knowledge is an important factor influencing the attitudes and behavior. [27] Lack of knowledge can affect the action taken because knowledge is one of the predisposing factors for the occurrence of behavior. [28] In addition, the knowledge domain is very important for the formation of someone actions. Knowledge can form a certain confidence that people behave in accordance with convictions. [29]

OHAS counseling can prevent the risk of accidents; the counseling will provide additional knowledge about things to do and not to do. [30] In addition, through counseling students will get an explanation of the causes of accidents that commonly occur. Counseling is routinely done either directly or indirectly can influence students' actions to reduce the risk of accidents. [31]

OHAS counseling will raise awareness of the importance of OHAS, especially in places that could potentially cause an accident. Counseling is an activity that is education that will be able to change the attitude and implemented through safe actions. Health promotion activities are packed with a variety of

methods, either directly or through a tool or media, training and education. [32]

Counseling as the process cannot change the behavior of a person with ease. In the process of counseling is required in order to change the target is not solely due to the addition of knowledge alone, but it is expected also to a change in actions that encourage and reinforce awareness of safety. [33]

Counseling activities have the meanings as providing information that could lead to clarity on the people concerned. Counseling activities more emphasis on two-way communication. [32]

Table5.The Differences Learning Achievement Before and After OHAS School Counseling

Test Statistics[b,c]				
				Achievement – Achievement
Z				-4.380[a]
Asymp. Sig. (2-tailed)				**.000**
Monte Carlo Sig. (2-tailed)	Sig.			.000
	95% Confidence Interval	Lower Bound		.000
		Upper Bound		.042
Monte Carlo Sig. (1-tailed)		Sig.		.000
	95% Confidence Interval	Lower Bound		.000
		Upper Bound		.042
a. Based on negative ranks.				
b. Wilcoxon Signed Ranks Test				
c. Based on 70 sampled tables with starting seed 299883525.				

Table6.The differences Risk Factors of Accidents Before and After OHAS School Counseling

Test Statistics[b,c]				
				FR – FR
Z				-4.312[a]
Asymp. Sig. (2-tailed)				**.000**
Monte Carlo Sig. (2-tailed)	Sig.			.000
	95% Confidence Interval	Lower Bound		.000
		Upper Bound		.042
Monte Carlo Sig. (1-tailed)		Sig.		.000
	95% Confidence Interval	Lower Bound		.000
		Upper Bound		.042
a. Based on positive ranks.				
b. Wilcoxon Signed Ranks Test				
c. Based on 70 sampled tables with starting seed 1314643744.				

CONCLUSION

1. Some oftreatment groups before the counseling 26 people (74.3%) have enough knowledge and after counseling 29 people (82.9%) have a good knowledge. The control group before the counseling 26 people (74.3%) have enough knowledge and after counseling 22 people (82.9%) have enough knowledge

2. Some of treatment group before the counseling 19 people (54.3%) have medium learning achievement and after counseling 20 people (57.1%) have medium learning achievement. The control group before the counseling 19 people (54.3%) have medium learningachievement and after counseling 23 people (65.7%) have medium learning achievement.

3. Some oftreatment group before the counseling 19 people (54.3%) have medium risk factors of accidents and after counseling 26 people (74.3%) have low risk factors of accidents. The control group before the counseling 19 people (54.3%) have medium risk factors of accidents and after counseling 23 people (65.7%) have medium risk factors of accidents.

4. There is a significant difference of knowledge before and after counseling OHAS School counseling with p value = 0.000 (<0.05).

5. There is a significant difference of learning achievements before and after counseling OHAS School counseling with p value = 0.000 (<0.05).
6. There is a significant difference of risk factors of accidents before and after counseling OHAS School counseling with p value = 0.000 (<0.05).

RECOMMENDATION
1. For the school is expected to continue to support the implementation of OHAS School ongoing basis and provide regular education on safety and health in schools to all classes with language tailored to the grade level of students
2. It is expected that the school can provide supervision of students on occupational safety and health in schools so as to prevent accidents in the school environment and the expected future Integrated Islamic Elementary Schools Qardhan Hasana as a core in the environment can be an example of schools that provide safety and health education in schools.
3. For students are expected to continue to implementing the OHAS knowledge in Schools to prevent the risk of accidents that may occur.
4. For the development of medical science, which contributes to the development of knowledge and reference for further research relating to the OHAS implementation in Schools?

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