# ORIGINAL ARTICLE

# Family Support to Improve Knowledge, Attitude, and Practices of Occupational Health and Safety (OHS) in the Informal Sector

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# ABSTRACT

Introduction: Occupational Health and Safety (OHS) for formal sector workers is held along with regulations, joint commitments, training, and continuous monitoring. This condition cannot be applied for informal sector, so it approaches that can be performed such as activating social support from workers' environment. This study aimed to determine for social support to improve the knowledge, attitude and practice of OHS workers in informal sector. Methods: This study a quasi-experimental with pre-posttest and control group design. Subjects were 90 limestone workers taken by Multistage Sampling from Gunungkidul Regency, Indonesia. Subjects were divided into health promotion by family support and peer support (FS&PS), peer support (PS), family support (FS), and control (C) group with treatment period of one month. Variables were measured using a knowledge, attitude, and practice questionnaire. The obtained data then analyzed using Kruskal-Wallis test and Mann-Whitney test. Results: There was a significant difference (p<0.001) in the knowledge, attitude and practice of OHS in limestone workers. FS&PS group gave the highest score for knowledge variable. There was no significant differences between OHS attitude between FS&PS and FS only (p=0.787). The biggest influence of attitude changes was from the FS group. The OHS practice has no significant differences between PS and C group (p=0.696), while other groups have significant differences. Conclusion: The biggest influence of changes in OHS practice was in the FS group. The combination of FS&PS is more effective in increasing knowledge, while attitude and practice are more effective if involving FS. Malaysian Journal of Medicine and Health Sciences (2023) 19(2):175-181. doi:10.47836/mjmhs19.2.26

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#### INTRODUCTION

The world's population is rapidly increasing and this trend is expected to continue, is expected to reach 8.5 billion by 2030. In developing countries, labour force participation is higher in rural areas. People in rural areas have stronger tendency to participate in work, because of the lack of social protection or financial support which make them taking any available work regardless of its quality (1). The total of death due to work-related accidents and diseases in the world is around 2.78 million, which 2.4 million are occupational diseases and 380 thousand are work accidents. It is estimated that every year there are 374 million non-fatal accidents (2). Most accident in workplace are contributed by human factor, especially because the lack of work knowledge,

work behaviour, and work attitude (3). Efforts to prevent and reduce the impact can be done by emphasizing on occupational health and safety (OHS) services (4). Work safety quality can be build by improving safety behaviour and environment (5).

Improvement of OHS practices can be done through implementation of occupational health and safety training (6), enforcement of the rule of law, implementation of inspections on hazard, and fulfillment of safety and health of workers (7). The success in the implementation of work safety is the combination of commitment to safety, leadership and behaviour monitoring (8). Informal sector work usually does not have an agreed written rules, kinship, family work relationships, and characterized with low levels of education and expertise (9,10),. The success of OHS practice in the informal sector can be pursued by involving people who are able to act as information providers, trainers, motivator, monitor and active supervisor (11).

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In Indonesia, as much as 56.50% (12), as in the Province of the Special Region of Yogyakarta that informal sector worker are 51.59%, most of them are in Gunungkidul Regency (13). The government has issued regulations to protect informal sector workers which are mandated through the Community Health Center by carried out guidance for working groups through the Occupational Health Effort Post or OHEP (Pos Upaya Kesehatan Kerja or Pos UKK). Study showed that OHS has not been implemented optimally and is still limited to forming Pos UKK organization without further activities (14). The target of Pos UKK implementation is the active participant of cadres to provide assistance to groups of similar workers. COVID-19 pandemic has impacted the priority of Community Health Center programs. The OHS program for informal sector work, are then less prioritized. Previous study showed that support identification of OHS implementation for informal sector of limestone processing workers is to involve the components around the workers, including colleagues and families of workers (15). The influence component is referred to as social support.

Social support of informal sector workers are the family and co-workers. Social supporter that has been given training by health cadres and then provides assistance to workers for one month has proven to be able to improve knowledge, attitudes, and practices for implementing OHS for workers (16). It is not known whether the increase in knowledge, attitude and practice of OHS among workers is due to the influence of family or coworkers or combination of both. So, the purpose of the study was to determine the differences between health promotion and the involvement of social support to increase the knowledge, attitudes, and practices of OHS workers in the informal sector. The difference between health promotion with FS&PS compared to health promotion with FS involvement on OHS knowledge, attitudes and practices, the difference between health promotion with FS&PS compared to health promotion with PS involvement on OHS knowledge, attitudes and practices, the difference between health promotion with FS&PS compared to health promotion with control involvement on OHS knowledge, attitudes and practices, the difference between health promotion with FS compared to health promotion with PS involvement on OHS knowledge, attitudes and practices, the difference between health promotion with FS compared to health promotion with control involvement on OHS knowledge, attitudes and practices, and the difference between health promotion with PS compared to health promotion with control involvement on OHS knowledge, attitudes and practices.

# MATERIALS AND METHODS

#### **Study Design**

The type of study used is a quasi-experimental design with pretest-posttest control group design. Population of

the study are workers in the informal sector of limestone processing in Gunungkidul Regency, Indonesia. The sample was taken using Multistage Sampling technique. The first step was selecting by purposive sampling based on the existence of a limestone processing professional group in Gunungkidul Regency that was still active, focused in Ponjong and Rongkop subdistricts. The selected location is in the working area of the Ponjong 2 Health Center. After first selection, Cluster Random Sampling was carried out for the selection of treatment groups according to the limestone processing cluster located in the same area. There were 32 cluster groups which were used as research locations with workers from cluster members as the research sample. The sample size was calculated based on the value in a previous study (16). The minimum sample size using software in health studies with a level of significance value 1%, power of test 90%, and standard deviation 4,304; mean population before treatment 25 and the mean population after treatment 28.8, the minimum sample size required is 20 samples for each treatment group. There were four cluster groups of workers for the study with three different health promotion treatments with the involvement of family support and peer support; only family support; only peer support; and one group as a control without treatment. The grouping is based on the cluster of workers located. The following is the scheme for the implementation of the research carried out in figure 1. Research ethics approval was obtained from the Health Research Ethics Commission of the Faculty of Medicine, Universitas Sebelas Maret, Surakarta, Indonesia (Reference No: 176/UN27.06.6.1/ KEPK/EC/2020).

#### **KAP Questionnaire**

Data were collected using a Knowledge Questionnaire (K) consisted of 8 questions, Attitude Questionnaire (A) and Practice Questionnaire (P) each questionnaire consisted of 10 questions. The K, A, P instruments was developed by the research team with the steps of identifying occupational risk as the basis for developing questions, preparing questions according to research variables, testing the validity and reliability of the instrument. The K, A, P instruments were developed based on the results of the identification of occupational risk factors carried out by a certified OHS expert using the Job Safety Analysis (JSA) method. The questionnaire K contain questions about risk factors, risk prevention, and appropriate Personal Protective Equipment (PPE), questioner A contain attitudes to minimize risk, control risk, and attitudes to the correct use of PPE, questionnaire P contain measures to control risk, appropriate and correct use of PPE. The K, A, P instruments were prepared through discussion and input from 4 person who have background in occupational health, public health and health promotion then stated that the instrument was valid (kappa 0.92). The test results are declared valid if the score above 0.75 (17). The K, A, P instruments were then tested with content validity test by 2 experts in the field of occupational health and community empowerment with a kappa value of 0.81 and 0.87. The results of average the content validity test from 6 raters is 0.89. The reliability test used Cronbach's alpha with 40 respondents. The reliability value of the OHS knowledge instrument is 0.8, the OHS attitude instrument is 0.917 and the OHS practice instrument is 0.804 (16). Data collections is carried out by trained enumerators, namely health cadres who were previously given training.

#### **Statistical Analysis**

The measurement of the difference the pretest and the posttest between several treatment and control groups were analyzed using the Kruskal-Wallis statistical test because the data were not normally distributed based on the results of Saphiro-Wilk test except the practice variable in the PS group, the knowledge variables (FS&PS=0.002; FS=0.000; PS=0.000, C=0.000), Attitude variables (FS&PS=0.004; FS=0.000; PS=0.000, C=0.000), and practice variables (FS&PS=0.000; FS=0.000; PS=0.145, C=0.003). The Kruskal-Wallis statistical test to determine the differences between treatment groups ( $\alpha$ : 0.05), then continued with the Mann-Whitney test to determine the difference between each of the two treatment groups ( $\alpha$  : 0.05).

#### RESULTS

The following are the characteristics of the respondents in table I. Based on gender, it is known that the majority of limestone processing workers are male, with the level of education mostly finished elementary school, with average age ranging from 39 to 46 and years of work between 3-7 years. In the table II, Most of Family Supporter are worker's wife, while Peer Supporter are working owners.

The mean value in all groups increased from the measurement before treatment compared to the measurement after given treatment in table III. The highest difference is in the knowledge variable in the combination of health promotion with the involvement of family support and peer support group ( $\Delta$ FS&PS = 2.8 points) while the lowest was in the control group ( $\Delta$ C = 0.2 points). The highest attitude difference was in the combination between family support and peer support group ( $\Delta$ FS&PS = 10.2 points) while the lowest

Table II: Characteristics of Family Supporter and Peer Supporter (n=52)

Characteristic	n (%) or Mean ± SD
Family Supporter	36
Husband	2 (5.3)
Wife	23 (60)
Children	2 (5.3)
Parent	8 (21.1)
Sibling	1 (2.6)
Peer Supporter	16
Workplace Owner	16 (100)
Gender	
Male	20 (38.5)
Female	32 (61.5)
Educational Background	
Did not finish primary school	1 (1.9)
Finish primary school	28 (53.8)
Finish First Secondary School	16 (30.8)
Finish Upper Secondary School	6 (11.5)
Finish University	1 (1.9)
Age (Years)	$42.4 \pm 10.7$

was in the control group ( $\Delta C = -0.1$  points). The highest practice variable was in the family support group ( $\Delta FS = 11.1$  points) while the lowest was in the control group ( $\Delta C = 1.4$  points).

The results in table III of Kruskal-Wallis test found that there was a significant difference in scores (p <0.05). The next step is to find out the difference between the two groups using the Mann-Whitney test are presented in detail in Table IV. Follow-up tests were carried out by bivariate tests on each treatment group. The knowledge variable about OHS with Mann-Whitney Test is known that each treatment group has a significant differences (p <0.05), meaning that each treatment effect has a different effect on the respondent's knowledge variable. The highest difference was in the combination between the influence of FS&PS group with an average difference score of 2.8  $\pm$  1.1 SD.

In Attitude variable towards OHS it is known that there is no significant difference between the effect of FS&PS combination with the influence of FS only (p = 0.787) so it can be concluded that the effect of treatment between FS&PS with FS has the same difference in score changes. While the differences in the other treatment groups, it is known that there are significant differences (p < 0.05), so it can be stated that each treatment given has an effect on changes in the attitude of respondents who are different in each treatment group with differences in scores. The biggest influence on the changes in employee attitudes

Table I Characteristics of limestone processing worker respondents

Table Fendracteristics of milestone processing worker respondents							
Characteristics Respondents	FS&PS	FS	PS	С	Total		
	n (%) or Mean ± SD						
Gender							
Male	19 (82.6)	17 (81.0)	18 (78.3)	18 (78.3)	72 (80)		
Female	4 (17.4)	4 (19.0)	5 (21.7)	5 (21.7)	18 (20)		
Education Background							
Did not finish primary school	5 (21.7)	2 (9.5)	0 (0)	2 (8.7)	9 (10)		
Finish primary school	12 (52.2)	11 (52.4)	16 (69.6)	15 (65.2)	54 (60)		
Finish First Secondary School	5 (21.7)	8 (38.1)	5 (21.7)	6 (26.1)	24 (26.7)		
Finish Upper Secondary School	1 (4.3)	0 (0)	2 (8.7)	0 (0)	3 (3.3)		
Age (years)	$44.5 \pm 16.3$	$39.3 \pm 12.1$	$44.3 \pm 14.5$	$46.2 \pm 11.8$	$43.6 \pm 13.7$		
Years of work (years)	$3.3 \pm 2.2$	$4.3 \pm 3.4$	$7.9 \pm 8.8$	$7.1 \pm 4.9$	$5.65 \pm 4.8$		

Note : FS = family support, PS = peer support, C = control

#### Table III Test results on knowledge, attitude and practice of limestone processor OHS

Variable	Pretest	Posttest	Δ	Kruskal-Wallis value	Mean Rank	p-value
Knowledge         -       Health Promotion by Family & Peer Support group         -       Health Promotion by Family Support group         -       Health Promotion by Peer Support group         -       Control group	$5.2 \pm 1.1$ $6 \pm 0.9$ $5.3 \pm 0.4$ $5.8 \pm 0.4$	$8.0 \pm 0.0$ 7.9 ± 0.2 6.6 ± 0.5 6.0 ± 0.0	$2.8 \pm 1.$ $11.9 \pm 0.9$ $1.3 \pm 0.7$ $0.2 \pm 0.4$	53.904	69.41 54.52 42.63 16.22	<0.001
Attitude         -       Health Promotion by Family & Peer Support group         -       Health Promotion by Family Support group         -       Health Promotion by Peer Support group         -       Control group	$29.8 \pm 2.1$ $30.2 \pm 1.6$ $26.9 \pm 2.7$ $29.1 \pm 0.4$	$40 \pm 0.0$ $39.9 \pm 0.2$ $29.5 \pm 0.9$ $29.0 \pm 0.0$	$10.2 \pm 2.1$ 9.7 ± 1.6 2.5 ± 2.6 -0.1 ± 0.4	71.964	68.96 68.00 29.67 17.33	<0.001
Practice       -       Health Promotion by Family & Peer Support group         -       Health Promotion by Family Support group         -       Health Promotion by Peer Support group         -       Control group	$29.1 \pm 1.0$ $25.3 \pm 3.3$ $30.0 \pm 2.2$ $29.1 \pm 0.9$	$37.5 \pm 1.0$ $36.4 \pm 0.8$ $31.5 \pm 1.3$ $30.5 \pm 0.9$	$8.3 \pm 1.3$ 11.1 ± 3.2 1.5 ± 2.8 1.4 ± 1.3	69.916	63.11 74.21 22.91 24.26	<0.001

Note :  $\Delta$  = difference in pretest posttest scores

Table IV: Test results of the differences between knowledge, attitude and practice of OHS

Variable	Mean Rank	p-value
Knowledge		
- Health Promotion by Family & Peer Support group : Health Promotion by Family Support group	27.26 ; 17.29	0.007
- Health Promotion by Family & Peer Support group : Health Promotion by Peer Support group	31.59; 15.41	< 0.001
- Health Promotion by Family & Peer Support group : Control group	34.57; 12.43	< 0.001
- Health Promotion by Family Support group : Health Promotion by Peer Support group	26.31; 19.02	0.046
- Health Promotion by Family Support group : Control group	32.93 ; 12.98	< 0.001
- Health Promotion by Peer Support group : Control group	32.20 ; 14.80	< 0.001
Attitude		
- Health Promotion by Family & Peer Support group : Health Promotion by Family Support group	22.96 ; 22.00	0.787
- Health Promotion by Family & Peer Support group : Health Promotion by Peer Support group	35.00;12.00	< 0.001
- Health Promotion by Family & Peer Support group : Control group	35.00;12.00	< 0.001
- Health Promotion by Family Support group : Health Promotion by Peer Support group	34.00;12.00	< 0.001
- Health Promotion by Family Support group : Control group	34.00;12.00	< 0.001
- Health Promotion by Peer Support group : Control group	29.67;17.33	< 0.001
Practice		
- Health Promotion by Family & Peer Support group : Health Promotion by Family Support group	17.28 ; 28.21	0.002
- Health Promotion by Family & Peer Support group : Health Promotion by Peer Support group	34.83;12.17	< 0.001
- Health Promotion by Family & Peer Support group : Control group	35.00 ; 12.00	< 0.001
<ul> <li>Health Promotion by Family Support group : Health Promotion by Peer Support group</li> </ul>	34.00;12.00	< 0.001
- Health Promotion by Family Support group : Control group	34.00 ; 12.00	< 0.001
- Health Promotion by Peer Support group : Control group	22.74 ; 24.26	0.696

is from the involvement of FS.

The practice of implementing OHS is known that the effect of PS treatment with control has no significant difference (p = 0.696), so it can be concluded that peer support treatment with control has the same difference in score changes. While the differences in the other groups, it is known that there is a significant difference (p < 0.05), so it can be concluded that each treatment given has a different change in the score difference for each group on the OHS implementation practice variable. The biggest influence on changes in workers' OSH practices is the involvement of FS.

### DISCUSSION

The result showed that the highest difference in limestone processing workers knowledge was found in the influence of health promotion combinations by FS & PS group, the biggest influence on the changes in employee attitudes is from the involvement of FS, and the biggest influence on changes in workers' OSH practices is the involvement of FS. Refers to the theory of planned behavior that a person's behaviour is influenced by beliefs about behaviour and these beliefs are formed by attitudes, subjective norms and perceptions of behavioural control. Attitudes, subjective norms and control over behaviour are components that influence each other so that they will form beliefs to behave (18). Individual experience is the driving force for behaviour in this case is the practice of OHS. Each individual's behaviour is influenced by environmental factors where the individual is located, the closest personal environment for workers for informal sector workers is family, co-workers, and the community environment that influence each other according to ecological theory (19). Knowledge sharing is important in increasing the OHS capacity and behaviour, which can happened through knowledge collecting and knowledge donating by exchange task information, expert knowledge, handle problem, until achieve common goals (20).

Knowledge is a construction of sociocultural learning, emphasizing on the interaction between internal and external aspects. People gain learning when dealing with tasks that have not been learned (21). Knowledge is influenced by factors from within humans and from outside humans. Factors from within humans such as intelligence factors, physical conditions and interests

while external factors such as family, community and facilities and infrastructure factors. Other factors that might influence, the learning approach, learning effort factors such as strategies and learning methods (22). The results showed differences in level of knowledge of limestone processing workers in all treatment groups, with the highest average change score in the combined treatment group between FS&PS. The combination of FS&PS has an influence on limestone processing worker to get a better understanding of information, namely when at home by FS and at work by PS. Peer support is a support model in workplace that provide not only better knowledge, but also social and emotional support related to health. Increasing knowledge and capacity through peer support can improve selfcare behaviour (23). Family support includes emotional support, instrumental support, and information support, so that workers have better perceptions, beliefs and tendencies to act with treatment from family support, so that support from the combination of FS&PS has a role to increase motivation and positive attention, experience information and friendship (24).

The treatment by peer support in providing knowledge increment is already high, but it has not been able to increase motivation or practice in the implementation of OHS. Peer support, who all are workplace owners, will be able to give an effect on the implementation of OHS if they applied rules to workers and are accompanied by strict monitoring, because high knowledge does not necessarily provide high OHS implementation practices, it must be accompanied by rules and monitoring (25). Other peer treatment is provide information on limited human resources, convenience of interaction and supervision, (26) and proximity to workers can provide a more effective information experience (27), but this has not been able to work effectively in this study, peer support limestone processing workers who all are workplace owners, still act as they do not care about workers in the implementation of OHS but focused on the results of targets limestone production according to the results in in-depth interviews with workers. The implementation of OHS that must be improved is leadership, legal and financial regulations (28), because the owner of the limestone processor does not have the rules for implementing OHS, the relationship between the worker and the owner is informal, unwritten agreement, friendship or kinship.

The influence of family support has the most influence on attitude changes of limestone processing workers in implementing OHS. The family support views that the family is supportive and is always ready to provide help and assistance when needed. Families consisted of individuals who are joined together by marriage, blood or adoption ties and live in the same household (29). The family support treatment views that family is always ready to support and provide help and assistance when needed (30). Family support includes emotional support, instrumental support, and information support, so that workers have better perceptions, beliefs and tendencies to act with treatment from family support, in accordance with the research findings that family support has the greatest influence on worker attitudes compared to peer support treatment, control, and combination of FS&PS. Some research results show that FS & PS have treatments to increase positive motivation and attention, experience information and friendship (24), but based on respondents' statements, the most of their motivation comes from FS, while the new PS treatment only gives 8.9% motivation increment for workers in the implementation of OHS.

Working behaviour is a complex process that included both knowledge and attitude of each worker. In order to increase good working behaviour, it is important to increase each workers capacity through knowledge and attitude learning (31). The strategy of learning method with continuous repetition is very effective in increasing knowledge (32) by providing information by PS that focuses on providing information at work limestone processor and FS which focuses on providing information while at home. The treatment of FS & PS regarding OHS for limestone processing workers provide health promotion because these intervention effective as messenger or in health promotion (33). Treatment from combined of FS&PS can increase the goals to be achieved. This is according to the results of this study that treatment from the community can be improved through increasing capacity in leadership and access to information in the community and resources, also increasing attention to the health and safety of workers (26). Positive attitude from supervisors improves behaviour in OSH practices (34)(35). Involvement of family support as a supervisor in OSH practice, according to the results showed that the effect of providing information on a combination of FS&PS was significantly different from the other treatment groups and had the highest score change value.

Limitation in this study, the posttest measurements were carried out once after the intervention, so that the sustainability of the involvement of social support for informal sector limestones processing workers not evaluated.

# CONCLUSION

Social support for the OHS health promotion in the informal sector by involving a combination of FS&PS is more effective in increasing knowledge of limestone workers, while improving the OHS attitudes and practices is more effective health promotion by involving FS. There are no differences in the level of limestone processor knowledge about OHS between FS&PS treatment and FS, between FS&PS and PS, between FS and PS, between FS and C, and between PS and C. There is a difference in the attitude of limestone processors towards OHS between FS&PS and FS, there are no differences in the attitude of limestone processors about OHS between FS&PS and PS treatment group, between FS and PS, between FS and C, and between PS and C. There are no differences in the practice of OHS limestone processors between FS&PS and FS, between PS and C, there are differences in the practice of OSH limestone processors between the treatment groups of FS&PS and PS, between FS and PS, and between FS and C. Further study can be carried out repeated measurements to evaluate the sustainability of social support involvement for informal sector workers.

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