



## Evaluation of the role of family support as an educator, monitor, and motivator in improving OSH practices in the informal sector in Gunungkidul, Yogyakarta

Sukismanto<sup>1✉</sup>, Hartono<sup>2</sup>, Sumardiyono<sup>2</sup>, Tri Rejeki Andayani<sup>2</sup>, Lala Budi Fitriana<sup>1</sup>, Ariyanto Nugroho<sup>1</sup>

<sup>1</sup>Universitas Respati Yogyakarta, Indonesia

<sup>2</sup>Universitas Sebelas Maret, Indonesia

### Article Info

#### Article History:

Submitted 11 December 2024

Accepted 27 December 2024

Published 30 December 2024

#### Keywords:

family support; occupational safety and health; informal sector; education

#### DOI

<https://doi.org/10.15294/jhe.v9i2.17518>

### Abstract

**Background:** Continuous education, training, and monitoring are the keys to success in increasing Occupational safety and Health (OSH) knowledge, attitudes, and practices, so evaluation of treatment is necessary

**Methods:** This research method uses a pre-test post-test group design with control, The research population is limestone workers in Gunungkidul Regency, Daerah Istimewa Yogyakarta, with a population of 32 limestone processing groups taken as research samples using purposive sampling so that 90 research respondents. Respondents were divided into four research and control groups. Treatment for 1 month and evaluation carried out after more than three months after the treatment was completed. Data were analyzed using the Kruskal-Wallis test ( $\alpha : 0.05$ ) and continued with the pairwise comparison test.

**Results:** The results show that there are differences in all treatments, with the result that family support (FS) has an influence on changes in OSH knowledge and attitudes when compared to peer support (PS) and controls and still has the same effect when compared to a combination of FS and PS.

**Conclusions:** The conclusion is that FS has a good effect on increasing OSH knowledge, attitudes, and practices, and it is suggested for further research related to the role of PS for workers

✉ Correspondence Address:  
Email : [sukis@respati.ac.id](mailto:sukis@respati.ac.id)

## INTRODUCTION

Workplace accidents in the mining sector remain high, caused both by unsafe working environments and unsafe worker behavior. The highest percentage of causes is attributed to educational factors (100%), understanding of Occupational Safety and Health (OSH) (77.78%), work age (67.67%), not using personal protective equipment (PPE) (55.56%), and work experience (47%) (Harahap & Susilawati, 2023). Seeing these conditions, efforts need to be made to supervise humans, machines, materials, the environment, and work methods to reduce the occurrence of accidents (Kristiawan & Abdullah, n.d.). Accidents can occur in any work sector, both formal and informal, where as many as 74.04 million people (56.50 percent) are employed in informal sector activities (BPS, 2020).

Occupational Safety and Health management in the formal sector is implemented through the application of the Occupational Health and Safety Management System. However, the informal sector, which is not covered by regulations, needs attention in OSH implementation. The government, through the Ministry of Health of the Republic of Indonesia, assigns the Community Health Centers the responsibility of managing OSH through the establishment of Occupational Health Effort Post (OHEP). The evaluation shows that the activities did not run effectively due to the low level of knowledge among OHEP cadres about OSH, a lack of healthcare workers handling OSH issues, insufficient assistance from healthcare personnel, and limited information on OSH knowledge for OHEP cadres. Therefore, it is necessary to provide training to improve OSH capabilities (Sukismanto, Sri, et al., 2023). Consequently, the active role of OHEP cadres will improve.

The goal of empowering workers in the informal sector can involve social support close to the workers, such as peer support and family support, which can be engaged to improve the knowledge, attitudes, and occupational safety and health practices of informal sector workers (Sukismanto et al., 2021b). In a trial examining the role of social support between family support and peer support during a 4-week study, it showed that it is more effective to use

the influence of family support, specifically close relatives of workers, such as a wife for her husband, in improving knowledge, attitudes, and practices related to occupational health and safety (Sukismanto, Hartono, et al., 2023).

The sustainability of OSH practices is the key to successfully preventing workplace accidents and occupational diseases. A one-month intervention trial can bring about changes in improving knowledge, attitudes, and OSH practices. However, over time, continuous monitoring and education are required to prevent a decline in these variables, considering that knowledge, attitudes, and practices are influenced by many factors (Andersen et al., 2019). After more than three months, is there still an influence of the role of social support on knowledge, attitudes, and OSH practices? Therefore, research to determine the continued impact of social support needs to be conducted

## METHODS

The type of research used is quasi-experimental with a pre-test post-test group design with a control group. The study was conducted in the Gunungkidul area, a regency in the Special Region of Yogyakarta, known for having the highest number of informal sector jobs compared to other regencies/cities in the region.

### Population

The research population was in a community of limestone processing workers in the OHEP which was under Community Health Center Ponjong 2 Gunungkidul regency. Occupational Health Effort Post (OHEP) is an organization established by a group of worker to provide OSH services under the guidance of healthcare staff from the community health center. OHEP supervises more or less 50 groups of limestone processing workers, the total number of workers exceeding 215 people serves as the population in this study.

### Sample

The sample was selected using purposive sampling techniques based on specific criteria : a) areas actively engaged in OHEP activities, b) actively participating in OHEP activities, c) still actively working as limestone processors, d) selected as samples for testing the influence of social support, either as an experimental group

or a control group. Thirty-two workgroup locations were selected as research clusters, from which a sample of 92 workers was determined. These respondents were then divided into four research respondent groups. During the intervention, 2 workers moved and were out of the research sample

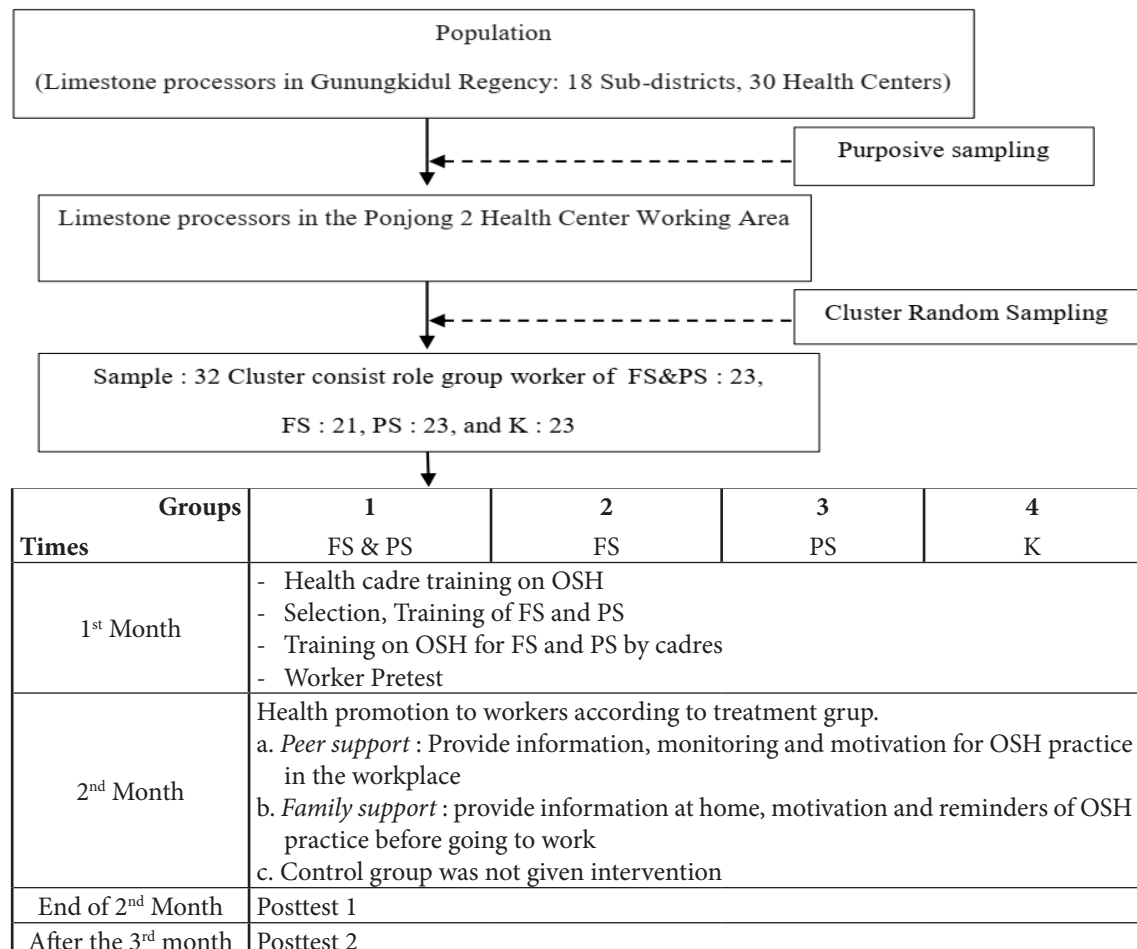
#### Instruments and data collection techniques

The data was collected by health cadres as enumerators. Pre-test data was measured before providing interventions according to the assistance groups by FS and PS. The first post-test data was measured one month after the intervention was given. The second post-test data was measured three months later, during which FS and PS were not reminded to perform their roles as motivators, educators, or monitors. The sustainability of the influence of social support on knowledge, attitudes, and OSH

practices was measured more than three months after the first intervention and compared across treatment groups. The data was collected by enumerators by directly visiting the workplace. The instrument used to measure the variables was a questionnaire that had undergone content validity testing by six experts in the fields of occupational safety and health, public health, health promotion and community empowerment. Meanwhile, the instrument's reliability test conducted on 40 respondents using the Cronbach's alpha test showed that the knowledge questionnaire obtained a scored of 0.8, the attitude questionnaire scored 0.917, and the practice questionnaire scored 0.804, indicating that the instrument is reliable for measuring workers' knowledge, attitudes, and OSH practices (Sukismanto et al., 2021a).

#### Research procedure

The implementation of the research can be shown in the following flow:



Note = FS : *Family Support*, PS : *Peer Support*, K : Control

Figure 1 Research flow

### Data analysis

The data analysis to determine the differences in knowledge, attitudes, and practices of OSH in several treatment groups and control groups, since the data is not normally distributed, uses non-parametric statistical tests with the Kruskal-Wallis test ( $\alpha$ : 0.05), followed by pairwise comparison tests to analyze the differences between two groups within several groups.

### RESULTS AND DISCUSSIONS

The research respondents, who are

located in several clusters, are grouped into three treatment groups: family support and peer support (FSPS), family support (FS), and peer support (PS), as well as one control group (K). Before the respondents are given the treatment by each social support, a selection of family support or peer support is made, along with training for the social support providers (Gagne et al., 2018; Li et al., 2016; Sukismanto et al., 2021a; Werner et al., 2007). Here are the characteristics of the research respondents distributed according to the treatment groups :

**Table 1.** The characteristics of respondents in the informal sector workforce

	Groups			
	FS&PS	FS <sup>1</sup>	PS <sup>2</sup>	K <sup>3</sup>
N	23	21	23	23
Gender				
-Male	19 (82,6%)	17 (81%)	18 (78,3%)	18 (78,3%)
-female	4 (17,4%)	4 (19%)	5 (21,7%)	5 (21,7%)
Educations				
-Not Graduate	5 (21,7%)	2 (9,5%)	0 (0%)	2 (8,7%)
-Elementary	12 (52,2%)	11 (52,4%)	16 (69,6%)	15 (65,2%)
-Junior School	5 (21,7%)	8 (38,1%)	5 (21,7%)	6 (26,1%)
-High School	1 (4,3%)	0 (0%)	2 (8,7%)	0 (0%)
Age (years)	44,5 $\pm$ 16,3	39,3 $\pm$ 12,1	44,3 $\pm$ 14,5	46,2 $\pm$ 11,8
Working (years)	3,3 $\pm$ 2,2	4,3 $\pm$ 3,4	7,9 $\pm$ 8,8	7,1 $\pm$ 4,9

<sup>1</sup>FS : Family Support, <sup>2</sup>PS : Peer Support, <sup>3</sup>K : Control

The respondents, as limestone processing workers, are predominantly male, with the majority having completed elementary school. Based on age groups, the workers fall within the productive age range (20-59 years) according to the Ministry of Health. The average length of employment in the informal limestone processing sector ranges from 3.3 years to 7.9 years. The data on changes in knowledge, attitudes, and practices after treatment from PS, FS, a combination of FS and PS, as well as the control group are presented in the table 2.

The knowledge of the respondents increased in all treatment and control groups, and decreased after three months without treatment by health workers or intervention by researchers, except for the treatment group with peer support roles, which still showed improvement. The respondents' attitudes towards OSH, other than in the control group, showed improvement after the intervention.

However, all treatment groups and the control group also experienced a decrease.

The practice variables related to OSH all showed improvement after the intervention, as did the control group. However, in the control group and the PS treatment group, there was a decline, but the decrease was still higher compared to the groups before the intervention. The differences between the four groups after the intervention, more than three months after it was completed, can be seen from the results of the non-parametric Kruskal-Wallis test, presented in the following table 3.

The results of the Kruskal-Wallis test indicate that for all variables, namely knowledge, attitudes, and OSH practices, after three months of treatment, there were differences in values between all treatment groups. The test was followed by an analysis of the differences between two treatment groups, and the results are shown in the following table 4.

**Table 2.** The Descriptive knowledge, attitude, and practice of respondents in the informal sector workforce

Group	Knowledge			Attitude			Practice		
	Min	Max	Mean $\pm$ SD	Min	Max	Mean $\pm$ SD	Min	Max	Mean $\pm$ SD
<b>Family Support</b>									
-Pre Test	5	7	5.95 $\pm$ 0.95	25	31	30.27 $\pm$ 1.55	21	28	25.41 $\pm$ 3.25
-Post Test	7	8	7.95 $\pm$ 0.21	39	40	39.95 $\pm$ 0.21	36	38	36.45 $\pm$ 0.86
-Evaluation	7	7	7 $\pm$ 0.00	24	35	34.67 $\pm$ 0.48	31	32	31.57 $\pm$ 0.51
<b>Peer Support</b>									
-Pre Test	5	6	5.26 $\pm$ 0.45	25	32	26.96 $\pm$ 2.67	24	32	30.00 $\pm$ 2.17
-Post Test	6	7	6.61 $\pm$ 0.50	26	31	29.48 $\pm$ 0.95	27	35	31.48 $\pm$ 1.31
-Evaluation	6	7	6.70 $\pm$ 0.47	25	31	27.83 $\pm$ 2.06	25	31	27.09 $\pm$ 1.56
<b>Family &amp; Peer Support</b>									
-Pre Test	4	7	5.18 $\pm$ 1.10	25	32	29.77 $\pm$ 2.09	28	30	29.18 $\pm$ 1.01
-Post Test	8	8	8.00 $\pm$ 0.00	40	40	40.00 $\pm$ 0.00	36	40	37.45 $\pm$ 1.06
-Evaluation	7	7	7.00 $\pm$ 0.00	34	35	34.76 $\pm$ 0.44	31	32	31.48 $\pm$ 0.51
<b>Control</b>									
-Pre Test	5	6	5.78 $\pm$ 0.42	29	31	29.09 $\pm$ 0.42	27	31	29.09 $\pm$ 0.95
-Post Test	6	6	6 $\pm$ 0.00	29	29	29.0 $\pm$ 0.00	29	31	30.48 $\pm$ 0.90
-Evaluation	5	5	5 $\pm$ 0.00	22	29	26.26 $\pm$ 1.63	23	31	26.91 $\pm$ 1.68

**Table 3.** The Result Kruskal-Wallis of the evaluation of Knowledge, attitude, and practice OSH respondent informal sector workforce

Variable	X <sup>2</sup>	Mean Rank	p
<b>Knowledge</b>			
-Family & Peer support		59,50	
-Family support	75,668	59,50	<0,001
-Peer support		49,61	
-Control		12,00	
<b>Attitude</b>			
-Family & Peer support		68,50	
-Family support	70,023	66,50	<0,001
-Peer support		28,26	
-Control		18,74	
<b>Practice</b>			
-Family & Peer support		65,98	
-Family support	65,003	68,07	<0,001
-Peer support		24,59	
-Control		23,28	

**Table 4.** The Result Pairwise Comparisons of the evaluation of Knowledge, attitude, and practice OSH respondent informal sector workforce

Variable	Adj.sig.
<b>Knowledge</b>	
-Family & Peer support : Family support	<b>1,000</b>
-Family & Peer support : Peer support	<b>0,744</b>
-Family & Peer support : Control	<0,001
-Family support : Peer support	<b>0,744</b>
-Family support : Control	<0,001
-Peer support : Control	<0,001
<b>Attitude</b>	
-Family & Peer support : Family support	<b>1,000</b>
-Family & Peer support : Peer support	<0,001
-Family & Peer support : Control	<0,001
-Family support : Peer support	<0,001
-Family support : Control	<0,001
-Peer support : Control	<b>1,000</b>
<b>Practice</b>	
-Family & Peer support : Family support	<b>1,000</b>
-Family & Peer support : Peer support	<0,001
-Family & Peer support : Control	<0,001
-Family support : Peer support	<0,001
-Family support : Control	<0,001
-Peer support : Control	<b>1,000</b>

For the respondents' knowledge variable, there is a difference between the treatment combinations of FS&PS with Control, FS with Control, and PS with Control. For the respondents' attitude variable, there is a difference in treatment between the combinations of FS&PS with PS, FS&PS with Control, FS with PS, and FS with Control. For the respondents' practice variable, there is a difference in treatment between the combinations of FS&PS with PS, FS&PS with Control, FS with PS, and FS with Control.

Informal sector jobs are generally performed by groups of people with low education levels (Taufiq & Dartanto, 2020), and low education levels are a cause of low health literacy. With the education provided, it can increase the knowledge of people with low education levels and/or those with low literacy as well. Health education can improve efforts to prevent health issues (Asmi & Puspasari, 2023). Research results show that the education provided, whether by PS, FS, or a combination of PS&FS, led to an increase in respondents' knowledge. However, after more than three months, when there was a decrease in the intervention, a decrease in knowledge occurred, although it was still higher compared to before the education.

In addition to the educational material

provided, the personnel who deliver the message play an important role in enhancing knowledge. The closeness or ability to approach the information source and provide motivation to the target will make it easier for the message to be conveyed and received by the information target. In this study, the role of FS is crucial in improving the respondents' knowledge, especially when combined with PS. This is in line with the research findings, which show that the level of knowledge of mothers is directly proportional to the practice of exclusive breastfeeding, where knowledge is influenced by the motivation and education from healthcare workers (Rd. Halim et al., 2022).

Some research findings indicate that PS and FS can enhance motivation and positive attention, information, experience, and friendship (Tse et al., 2017). The results of this study show that most respondents have a high attitude because they are motivated by FS, although in terms of knowledge improvement, both PS and FS have an equal influence on the changes. The results show that after PS and FS did not provide information and motivation to the workers, their attitudes declined compared to the period after the treatment. When compared to before the research treatment, workers' attitudes were still above the pre-treatment attitude scores, except for the attitudes



in the PS treatment group, which were the same as the pre-treatment attitude scores. These values indicate that the involvement of peer support and family support provided positive support for improving attitudes. In particular, the involvement of family support, which can offer assistance and help with workers' needs (Friedman, 2010), led to an improvement in workers' attitudes towards occupational health and safety in limestone processing.

The evaluation results indicate that the involvement of FS still provides the best influence compared to other groups. This shows that the involvement of FS and PS, particularly FS, is capable of providing information, interaction comfort, and supervision (Bush et al., 2014). FS treatment views that the family is always ready to support and provide help and assistance when needed (Friedman, 2010). FS support includes emotional support, instrumental support, and informational support, so workers have better perceptions, beliefs, and tendencies to act with the presence of FS treatment.

The behavior of an individual according to the Theory of Planned Behavior (TPB) is influenced by beliefs about the behavior, and these beliefs are formed by attitudes, subjective norms, and perceived behavioral control. Attitudes, subjective norms, and behavioral control are components that mutually influence one another, thereby shaping the belief to engage in the behavior (Ajzen, 2005).

The decline in knowledge, attitudes, and practices related to OSH among limestone processors after the involvement of PS and FS ended could occur because health cadres no longer provided monitoring to PS and FS as they did during the research process. The health cadres have not yet become active in activities at the OHEP. This condition aligns with ecological theory, where the microsystem subsystems, such as family and coworkers, are influenced by larger subsystems like the mesosystem, which includes the work environment and community, as well as the ecosystem subsystems like the OHEP, which is a social organization within the community (Bronfenbrenner & Morris, 1998).

The subsystem components, if committed to continuing their involvement, have an impact on the behavior of individual limestone

processors in OSH practices. According to several research findings, the success of OSH practices is due to the implementation of regulations, commitment, leadership, training, and continuous monitoring (Andersen, Malmros, Ebbelhoej, Flachs, Bengtsen, et al., 2019; Bluff, 2019; Yanar et al., 2019).

## CONCLUSION

Family support (FS) can play a role as an educator, monitor, and motivator for informal sector workers, thus improving their knowledge, attitudes, and practices regarding OSH. Combining FS with PS has a greater ability to improve knowledge, but yields the same results for attitudes and OSH practices. Further research is needed regarding the more intensive role of PS in health education activities for workers.

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