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The refreshing course program and an introspective survey on occupational health efforts for informal industry in the catchment areas of Srandakan Public Health Center in Bantul: a case report

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Abstract

Purpose: Srandakan sub-district as one of the sub-district in Bantul which has a lot of informal industry that caused a lot of work-related accidents and health problems. These problems can be prevented. One of the prevention is by increasing public health programs in UKK (*Upaya Kesehatan Kerja*). Primary health care's UKK programs include annually refreshing and introspective or self-assessment programs that can help the informal industry to implement occupational health and safety, develop UKK station, and UKK cadres couching. The implementation of occupational safety and health (OSH) and UKK is expected can decrease the prevalence of work-related accidents and health problems in the informal industrial sector. **Conclusion:** The UKK caders' knowledge about the implementation of occupational health and safety and UKK is still poor. Annually refreshing program is so important to improve caders' knowledge and understanding. The introspective programs showed that not many informal industries those have UKK station. The role of UKK programmer in primary health, i.e. general practitioners and nurses, and also the government have an important influence in developing, monitoring, and evaluating the implementation of occupational health and safety programs.

Keywords: Refreshing course program; introspective survey; occupational health and safety; UKK station; UKK cadres.

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BACKGROUND

Special Region of Yogyakarta (DIY) with rapid industrial growth is recorded to have a very high work accident rate. In 2017, the number of work accidents in DIY reached 998 cases from a total of 4,337 companies. Bantul Regency has the most work accident cases. From 2011 to 2014, the highest incidence of work-related accidents in this district, the highest occurred in 2012, 149 cases, and in 2017, 44 cases.[1] These work accidents indicate that the application of OSH in industrial practices is still not well implemented.

Srandakan Subdistrict is one of the sub-districts in Bantul Regency, D.I. Yogyakarta. From the report of the Central Statistics Agency, in 2017, it was found that there are quite a lot of industries in Srandakan, either small, medium or large industries. From the registration records of the emergency room patients at the Srandakan Public Health Center (Puskesmas), there were many patients who came because of work-related accidents, either due to incomplete or unused personal protective equipment (PPE) or due to the inadequate handling of work accidents. This proves that it is necessary to apply OSH efforts in industrial practice.

The implementation of OSH in industrial practice is through the establishment of *Upaya Kesehatan Kerja* (UKK) and the cadrerisation of industrial workers for the OSH implementation. The UKK program is one of the mandatory programs of the Puskesmas to improve occupational health. One of the agendas of the Puskesmas Srandakan's UKK program, namely refreshing and self-monitoring surveys about OHS and UKK station for UKK cadres needs to be encouraged. This program has been carried out at the Puskesmas Srandakan since 2015 which aims to assess and increase cadres' knowledge about OSH and UKK stations so that an occupational health and safety effort will be carried out for all workers working in a particular industrial field. But this program has been in a vacuum in the last few years because there is little interest from the UKK cadres, which has brought back cases of work-related accidents and disease that has led to the promotion of one of the Puskesmas Srandakan's UKK programs.

CASE REPORT

Srandakan sub-district, which is located in the southern part of Bantul Regency, is far from the city center and is located near the beach as a tourist destination. This informal industry was initiated and developed by the community either to meet the needs of the surrounding community or to be traded outside. Based on Puskesmas Srandakan's data, the non-formal industry in Srandakan consists of food and non-food industries. The food industry is more dominant than the non-food sector, which is as many as 286 industries with the largest number in the tofu and *tempe* industry. While the non-food industry was 79 industries dominated by the basket industry (*krondo*).

Many informal industries that were pioneered and developed by the community, this makes a lot of work problems due to work accidents arising from these informal industrial activities. The industry built by the community comes from industries that have been passed down from generation to generation or are newly pioneered by the community itself so that the development process is only based on experience and not based on formal industrial knowledge or knowledge about occupational health. From the Puskesmas' reports, occupational health problems that arise are mainly caused by (1) unavailable PPE or workers who do not want to use PPE; (2) there is no UKK station or there is a UKK station but the implementation has not been so good that many cases do not get first aid or are left for several days; and (3) the inability of the worker to recognize all potential hazards in the work environment.

Based on the Puskesmas Srandakan's daily registry, work-related problems that occurred are dominated by (1) burn injury from the food industry sector; (2) wound caused by sharp objects from both the food or non-food industry sectors; and (3) foreign object injuries in the eyes or on the hands and feet of non-food industries. From the time of seeking medical help, it is divided into 3 groups, (1) immediately seeking medical help after a work-related accident; (2) seek medical help after a few days from the accident; and (3) after one week after the work-related accident where the work accident just raises health problems that really interfere with the activities of the worker. The role of the UKK station is very important in determining the delay in seeking for medical help after a work-related accident, the time delay occurs due to the absence of the UKK station or UKK station that has not been running optimally, so that the delay in seeking medical help occurs due to workers' knowledge that is still poor or there are no UKK cadres who can provide counseling to these workers. In addition, work-related accidents are handled at the Puskesmas Srandakan, some cases have received first aid from the UKK station at work and some have not received first aid, either because a UKK station has been formed but it is still not running optimally or UKK station was not formed yet. So by looking at the number of informal industries in Srandakan and daily reports of work-related accidents handled by the Puskesmas Srandakan, it shows the importance of establishing UKK station in this informal industry and the appointment and regeneration of informal industrial workers in the application of OSH in informal industrial practices.

The Occupational Health Efforts Program is one of the Community Health Efforts programs from the Puskesmas Srandakan that has been established since 2015. The organizational structure consists of (1) the principal of

the Puskesmas as the policymaker and chairman of the organization; (2) general physicians, who implement UKK medical activities; and (3) Coordinator of health promotion and UKK officers, to monitor and evaluate the implementation of the UKK program. While nutritional monitoring, dental health, and providing nursing care is carried out by nutritionists, dentists, and nurse in the Puskesmas. Activities undertaken in the UKK program include: (1) promotion: counseling, introduction of potential hazards and occupational health problems, and refreshing meetings of UKK cadres at least once a year; (2) preventive: monitoring and coaching at workplaces or UKK station and monthly inspections; and (3) curative and rehabilitative: mild treatment, medical referral, and handling of work-related accidents and disease. However, because the activities of the Puskesmas are focused on the Individual Health Effort (Upaya Kesehatan Perorangan -UKP), minimal funding for this activity, and low enthusiasm from the working community, the Puskesmas UKK program cannot be optimally implemented.

The high prevalence of work-related accidents and disease and the Puskesmas Srandakan's UKK program that have not been able to be carried out routinely, it is necessary to do a refreshing and introspective or self-assessment program in the informal industry sector. This program aims to (1) identify non-formal industries that do not have UKK posts yet; (2) providing refreshing about UKK station and occupational safety and health; and (3) know the existing occupational health problems and the obstacles of the UKK station and the OSH implementation in informal industry practices through self-awareness programs. This program is also an effort to revive the Puskesmas Srandakan's UKK program that is unable to run routinely every year. The implementation of this program has its challenges; the dominating UKP Puskesmas program requires the formation of a new team for the implementation of this program, which consists of one internship doctor who has taken OSH training to provide counseling; one health promotion coordinator and permanent officers of the UKK program, and two paramedics who assist in the implementation of this program. Limitations and no consistent human resources managing this program are also the cause of the UKK program which cannot be held yearly and the scope of industry that can be reached by this program is not able to cover all the informal industries in Sradakan. In addition, the Puskesmas working hours that conflict with the working hours of the informal industrial sector is also a barrier to the implementation of the Puskesmas UKK program.

This refreshing and self-assessment program was carried out in May 2019 at Puskesmas Srandakan. This program is carried out with simple facilities but still considering the achievement of the objectives of this program. Facilities used in this program include:

1. Registry desk : 2 units
2. Table : 9 units
3. Chair : 50 units
4. Layar presentasi : 1 unit
5. Projector : 1 unit
6. Laptop : 1 unit
7. Microphone : 1 unit
8. Speaker : 1 unit
9. Pen : 4 boxes
10. Pretest (1 sheet) : 30 copies
11. Postest (1sheet) : 30 copies
12. Self-assessment questionnaire (3 sheet): 30 copies

Due to the limitations of human resources and the difficulty in getting the informal industry to join this program, the distribution of invitations was carried out by inviting 28 non-formal industrial sectors with various fields of both food and non-food which indeed often participated in Puskesmas programs. It is hoped that through this informal sector industry representative, other non-formal industry can be invited to routine programs in the following year. From 28 existing industrial sectors, as many as 23 (82.14%) representatives came to the program. This is also a challenge for the UKK Puskesmas program stakeholder because the implementation of the program that conflicts with industrial working hours will also affect the participation of the informal industry community, even though it has been notified if there were compensations for transportation, consumption, and the salary that they left during the program.

The program was carried out in the hall of the Puskesmas Srandakan with the selection of rooms on the 2nd floor of the Puskesmas building to avoid the hectic atmosphere of daily Puskesmas service activities and the selection of cool rooms with air conditioning to make participants feel comfortable during the program. The program is carried out from 8:00 a.m. 12.00, with 30 minutes of registration, while waiting for participants who were late to attend the activity. Participants who came to this program were equal between women (52.17%) and men (47.83%). All respondents who attended the program were adult respondents with a mean age of 43.39 years, with the oldest respondent aged 63 years and the youngest respondent aged 33 years. The participants who were present were asked to do the pre-test for 10 minutes. The pre-test consists of 5 multiple choice questions with questions tested in accordance with the material that will be given during the refreshing program, namely 3 questions about the UKK post and its application and 2 questions about occupational health and first aid in the workplace accidents. Of all respondents present, only one respondent (4.35%) did not do pre-test or post-test, because respondents' understanding of the questions given was not good, but respondents were still included in this refreshing program.

After the pre-test, the programs started with self-introduction from each of the existing informal industry cadres by conveying (1) what industries are represented and the location of the industry, (2) whether or not the formation of UKK posts and obstacles are encountered, and (3) training or counseling that has been followed. This introduction was expected to be able to provide an initial description of what informal industries exist in Srandakan, map the types of informal industries that are still similar, and overview of the formation of the UKK post. After the introduction process, the material was given by general practitioners about OSH, UKK posts, work-related accidents, and initial handling and follow-up procedures for all work-related accidents and health problems. After giving material for 1 hour, a question and answer session were held, shared about informal industries that had succeeded in forming the UKK post, implementation, and difficulties encountered, as well as difficulties for informal industries that had not yet formed the UKK post. This discussion was held bi-directionally between participants and general practitioners, or between participants and general practitioners as moderators. The participants were seen enthusiastic in following each session in the event.

After the discussion, participants were asked to answer questions in the self-assessment survey and write down everything that had been encountered either that had been submitted in the previous discussion or not. In addition, respondents are asked to rework the post-test questions with the same questions when tested on the pre-test. Of the 22 respondents who participated in this program, the mean pre-test value carried out by all respondents was 36.36, with the lowest value of 0 and the highest value of 80. After material exposure, the results of the post-test were 6 (26, 08%) of respondents did not take the post-test because they left the program halfway. This post-test was conducted by 16 (69.57%) respondents, from the post-test results, the lowest value was 20, the highest value was 100, and the average post-test value was 53.75. Of all respondents who took the pre-test and post-test, the highest change from after to before material exposure was 60 and there were respondents who did not experience an increament after exposure. One respondent experienced a decreament, where the difference between the respondents' pre-test and pre-test scores was -40, with a mean difference in pre-test and post-test scores was 20 (Table 1).

Table 1. Demographic Characteristics, Pre-test, and Post-test

Variable	Total
Sex	
Female	12 (52,17%)
Male	11 (47,83%)
Age (year)	
Maximum	63
Minimum	33
Average	43,39
Pre-test score	
The number of respondens who did the test	22 (95,65%)
The number of respondens who did not do the test	1 (4,35)
Lowest score	0
Highest score	80
Average	36,36
Post-test	
The number of respondens who did the test	16 (69,57%)
The number of respondens who did not do the test	7 (30,43%)
Lowest score	20
Highest score	100
Average	53,75
The difference between pre-test and post-testscore	
Lowest	-40
Highest	60
Average	18,75
No difference	2 (12,5%)

From the discussions and self-assessment surveys it could be seen from 22 respondents that there were 14 (63.64%) respondents from the respective household industry representatives who did not yet have a UKK station. The types of informal industry (II) that do not yet have the UKK Post,ie.:

a. Tofu industry : 5 II
b. Tempe industry : 3 II
c. Soy milk industry : 1 II
d. Catering industry : 1 II
e. Wingko, bakpia, and snack industry : 1 II
f. Roof industry : 1 II
g. Brick industry : 1 II

While 8 other participants already have UKK Posts for the informal industries they represent. Some of them have UKK station which is united into one, three participants from Bakpia and Wingko industries are combined to become one UKK Station, 2 participants from food stalls industries at tourist sites are merged into one, 2 participants are from culinary industries incorporated in UKK station in Baru Beach, and only 1 participant from batik industry has an independent UKK station and is not a combined UKK station. From all of the existing UKK station, the self-assessment survey was conducted to assess the availability of UKK cadres, existing equipment, existing training, and existing constraints as far as the implementation of the UKK station (Table 2).

In the self-assessment survey participants were asked to explain their expectations of this refreshing and self-assessment programs. The participants' expectations, the program continues to be conducted regularly and there is ongoing guidance regarding OHS material, the UKK station, and first aid in other or more in-depth work accidents. In addition, it is not only refreshing and introspective programs, but also representatives from the Puskesmas to carry out and evaluate OHS implementation

Table 2. Self Assessment Survey

No.	Self Assessment Survey	Bakpia and Wingko Industry	Food Stall in Tourist Destination	Baru Beach Culinary Industry	Batik Industry
Infrastructure					
1.	Examination room	√	x	√	x
2.	Book Registry	√	√	√	x
3.	Drugs	√	√	√	√
4.	Weighing tool	√	√	√	√
5.	Height measurement	√	√	√	√
6.	Bed	√	√	√	x
7.	Table and Chair	√	x	√	x
8.	Blood Pressure Monitor	√	√	√	x
9.	Termometer	√	√	√	x
10.	Light	√	x	x	√
11.	First Aid Drug	√	√	√	√
12.	First Aid Box	√	√	√	√
Human Resource					
1.	Cadre	√	√	√	x
2.	Training	√	√	√	√
Training					
1.	Type	Antopometry skills, dressing and bandaging, PPE.	Training from Puskesmas (unspecified)	First aid in work-related accidents: fracture, stab wound, and drowning.	First aid in work-related accidents
Constrains					
1.	Type	The UKK stations is closed when the order is high	-	Cadre and place for UKK Station	The amount of the drugs

and UKK station up to every informal industrial and every UKK stations. Participants also expect that there will be training, assistance, and routine monitoring in every UKK station and informal industry needs to be done regarding the material that has been delivered, this is because the cadres or representatives of each UKK or informal industry feel that human resources that are still lacking in these skills, so it needs training and recruitment from the Puskesmas from existing human resources from each informal industry to become OHS cadres. Participants still find it difficult to start the formation of the UKK station and hope that there is a role from the Puskesmas in pioneering the UKK station to monitoring the sustainability of the UKK station implementation.

DISCUSSION

The policy about development of UKK Stations has been regulated in Indonesia Minister of Health Regulation 2015 concerning Integrated Occupational Health Stations Efforts. The regulation states that the UKK station is a forum for community-based health efforts in the informal sector, which is managed and organized from, by, for, and with workers' communities through the provision of health services with a simple promotive, preventive, curative and rehabilitative approach. Each UKK station also needs to have cadres originating from the workers themselves or from Posbindu cadres, Posyandu, or other health stations who have participated in simple cadre training, who can work voluntarily to maintain and improve the workers' health. This was formed because the level of work-related accidents and diseases in Indonesia is still very high and often neglected (4).

The informal sector contributes to economic development and alleviates poverty. In Ghana, the informal industry sector can absorb as much as 70% of the workforce and play an important role in reducing poverty. In Asia, the informal industry sector also has an important role in the economic system, the informal industry sector can absorb up to 40-50% of the total workforce. Even in developing countries in Asia, such as India, the informal industrial sector can absorb up to 90% of the workforce. Unfortunately, workers' knowledge about potential hazards, prevention and treatment processes is still low, causing work accident rates and occupational diseases to be very high. In addition, there is no clear policy regarding the protection of informal workers such as employment insurance that can cover in the event of workplace accidents or occupational diseases, making these issues important to obtain solutions for the welfare of these workers (5-7).

In Southeast Asia, the issue of occupational health is still the main health issue. In Malaysia, the informal sector is also a contributor to commodities. One important informal sector that contributes to the economy, namely the informal fisheries sector. Many of the workers in this informal industry are old workers and often have workplace accidents when they work. Unfortunately, there are no interventions and policies related to occupational health and safety for fishermen in Malaysia, so this is also an important issue in occupational health issues (8). In Indonesia, the informal sector can absorb

up to 70% of the workforce, but informal workers only receive general health services and have not been linked to the work they do (9).

Based on the Regulation of Indonesia Minister of Health and the incidences of work-related accidents and diseases and mostly arising from the informal industry, many UKK stations have been formed in preventing work-related accidents and diseases, especially in the informal industry. In Ponorogo district, specifically Demangan Village, the informal industry has made a major contribution to the community's economy, namely the agricultural sector. But the use of pesticides in the community's agricultural system there also has an impact on the workers' health. Besides that, work-related accidents can occur, such as a stab wound. Health efforts in the village of Demangan are already existed, but only Posbindu that held every month, so it cannot accommodate the needs of the workers' needs. Finally, with assistance from the Puskesmas Siman in Demangan Village and the community leaders, a UKK station was formed with community human resources. The formation of the UKK station also began from the beginning, from the introduction of potential hazards, the formation of the station, regeneration, the provision of equipment, until finally the formation and implementation of the farmer UKK station called Demang Jaya Sehat UKK station. In addition, the implementation of the UKK post continues to be fostered by the Puskesmas Siman to ensure the sustainability of the UKK station (10).

The beneficial of the UKK station was not only felt by the informal food industry sector but also to the non-food industry sector as well. In Bugangan Urban Village, Semarang City, the existence of the UKK station in the informal household appliance manufacturing industry is very beneficial for the workers. Workers get basic health services and can recognize the potential hazards in their work environment so preventive actions can be made to reduce the incidence of work-related accidents and diseases. As in the Demang Jaya Sehat UKK station, the establishment of the UKK station started from the beginning and was not developed from the existing UKK station. The roles of the Puskesmas and the government have an important role in the formation and sustainability of the UKK station in the informal industry (11).

The Ministry of Health (2016) mentions that if the establishment of the UKK station is integrated and the responsibility of the Puskesmas. The UKK station also includes promotional efforts and public health interventions in the work field. It appears that some informal industries do not yet have a UKK station, the informal industries need assistance from parties that understand the program, ie. Puskesmas. For them, OHS and UKK station are new things, so there are many obstacles in applying OHS and the formation of UKK station, and Puskesmas as the closest party to the working community plays an important role (12).

Puskesmas have an important role in the implementation of OSH and UKK station, Puskesmas continue to monitor the implementation and sustainability of the application of OSH and UKK stations (13). Great expectations from the workers and UKK cadres regarding Puskesmas' assistance during the implementation and regular monitoring. The implementation of occupational health requires Puskesmas UKK program which is not only held by paramedics, but also by doctors who are capable in OHS field, interested in the importance of OHS, and are already certified competency in OHS field (14).

The UKK program is expected to be supported by a team of doctors and nurses who have certified competency in the OHS field. The team is responsible for the formation of the UKK station, human resources recruitment, OHS briefing, First Aid for Accidents (*Pertolongan Pertama Pada Kecelakaan* - P3K), and First Aid for Disease (*Pertolongan Pertama Pada Penyakit* - P3P), assistance, and until the implementation of OHS and the Independent UKK station. When they are independent, the role of Puskesmas does not stop, Puskesmas has to continue to monitor and assist, and Puskesmas have a role as a place for a consultation. It shows how important the Puskesmas' UKK program team in having Occupational Safety and Health competencies that can help to identify and find solutions to occupational health problems (15-17).

However, the role of the Puskesmas and the government in this UKK station did not stop at the formation process, the assistance of cadres and the implementation of this UKK station are needed to continue continuously, even in the 2015th Indonesia Minister of Health regulation - Chapter IV about coaching, monitoring, and evaluation of the integrated UKK station in article 14 states that evaluation must be routinely carried out once a month. This further strengthens the role of Puskesmas and the government about the OHS implementation and formation of UKK station in the informal industry to reduce work-related accidents and diseases. From the self-assessment survey, it shows the great expectations of informal industry workers and UKK cadres on the active role of the puskesmas and the government in the formation and assistance of the implementation of the UKK station either passively by conducting refreshing or actively by visiting each of the informal industries.

CONCLUSION

The knowledge of UKK cadres is still low regarding the importance of applying K3 (OSH) and forming the UKK Post. Providing regular refreshing programs is very important to increase cadres' knowledge. A self-assessment survey shows that only a few home industries have UKK stations. This strengthens the participation of Puskesmas' UKK program stakeholders, ie. general

practitioners and nurses, has an important influence in the formation, monitoring, evaluation, and guidance of the implementation of OSH and UKK stations. On the other hand, the government as a policyholder also has a big role in the development of occupational safety and health culture and the UKK Post.

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