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The Management of Occupational Diseases among Farmer Groups in Bedugul Tourism Village, Tabanan Regency

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A B S T R A K

Petani sebagai pekerja sektor informal di Indonesia mengalami berbagai masalah kesehatan terkait Penyakit Akibat Kerja (PAK). Kurangnya sosialisasi kesehatan tentang pentingnya penggunaan APD merupakan permasalahan yang perlu ditindaklanjuti. Pemberdayaan masyarakat khususnya kelompok tani di bidang kesehatan bertujuan agar petani mampu secara mandiri mengatasi permasalahan kesehatan pasca pandemi Covid-19. Total responden dalam kegiatan ini adalah 30 orang anggota kelompok tani Muda Mandiri. Kegiatan PKM dimulai dengan memberikan penyuluhan mengenai PAK dan pola hidup sehat berkualitas, pemeriksaan skrining kesehatan, dan memberikan bantuan berupa APD standar untuk petani. Kegiatan PKM berhasil meningkatkan pemahaman tentang penggunaan APD secara lengkap dalam upaya pencegahan keracunan pestisida pada petani. Tindak lanjut kegiatan adalah perlunya pendampingan berkelanjutan kepada khalayak sasaran untuk mencegah ataupun mengurangi risiko (PAK).

Kata Kunci: APD, Kelompok Tani, Penyakit Akibat Kerja (PAK), Pestisida

A B S T R A C T

Farmers as informal sector workers in Indonesia are known to experience various health problems related to occupational diseases (PAK). The lack of knowledge about the importance of using PPE is a problem that needs to be followed up. Community empowerment, especially farmer groups in the health sector, aims to enable farmers to independently overcome health problems after the Covid-19 pandemic. The total respondents were 30 farmers of the Muda Mandiri group. Our activities began by providing counseling on PAK, health screening checks, and assisting farmers with standard PPE. There is an increased understanding of the complete use of PPE to prevent pesticide poisoning among farmers. The follow-up activity requires continuous assistance from the target audience to avoid or reduce the risk of PAK.

Keywords: *Farmer, Occupational Diseases (PAK), Personal Protective Equipment (PPE), Pesticide*

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INTRODUCTION

Farming is one of the many sources of livelihood for people. Indonesia, as a developing country, is the third largest producer of rice in the world. The majority of the workforce in Indonesia, especially in rural areas, depends on the agricultural sector to make a living. However, this significant contribution has not been matched by high occupational safety and health (OHS) standards for farmers (Akbar, 2018).

Farmers, as part of the informal sector in Indonesia, are known to suffer from various health problems. Common health issues include worms, food poisoning, chemical poisoning, malnutrition, respiratory illnesses, blood diseases, muscle and bone ailments, and asthma. This is impacted by numerous factors, including aspects of the workplace and the lifestyles of farmers. A major risk factor is the low education level of farmers, which leads to a lack of awareness and understanding of healthy living habits. Malnutrition is a problem brought on by farmers' unhealthy lifestyles, including their coffee and smoking addictions, which impair food absorption during digestion. One such issue that can lead to respiratory illnesses in farmers' workplaces is the usage of pesticides. Additionally, unhealthy lifestyle choices like smoking and consuming foods rich in fat and salt contribute to hypertension in farmers. Another important factor contributing to the incidence of occupational diseases among farmers, such as back and joint pain, is the absence of rest periods and ergonomic working conditions (Kuswana, 2016).

Bedugul Tourism Village is a popular tourist attraction in the highlands region of Northern Bali which is famous for its cool air. This region is also regarded as the center for the production of fruits and vegetables because the residents of Bedugul area mostly depend on the horticultural industry for their livelihoods (Darmayanti, Tirtayasa, & Saputra, 2015).

Farmers in the informal sector generally work from 6 am to 4 pm, they are required to work ten hours every day. Additionally, farmers' workloads are no different from those of people in their productive years. Farmers must take precautions against occupational diseases because of the degenerative process and the challenging economic climate.

The establishment of farmer organizations is an attempt by the government to enhance the welfare of farmers. Due to their limited access to market information, farmer groups have not been able to operate as efficiently as other economic players, which has resulted in farmers receiving poor prices. Furthermore, most members of farmer groups are over 45 years old, commonly known as the elderly, and farmers still have extremely limited access to technological information, expertise, and use of other resource technologies. As a result, farmers' businesses are less productive, efficient, and competitive (Susanto & Wahyuni, 2020). Occupational disease risks threaten farmers' health, including cardiovascular disease, pesticide poisoning, and mental stress disorders. All of the above problems can cause negative impacts on farmers both physically and psychologically. The ability of farmers to perform all of the tasks required by the farming industry with care is more important than their workload. This is further reinforced by the issues that farmers need to deal with lack of relief from work demands and the possibility of occupational diseases that endanger farmers' health. This situation turns into a work requirement. Farmers may experience mental stress problems and workload as a result of excessive task demands (Huyen, Song, Thuy, Dung, & Hoan, 2020).

PROBLEM IDENTIFICATION

According to a preliminary survey that the community service team conducted by interviewing some farmer group members, there are still issues with farmers' occupational health and safety, specifically:

1. People are less aware of the symptoms of exposure to toxic pesticides (Raini, 2007). This has also occurred in Bali.
2. Lack of knowledge among farmers about the significance of wearing appropriate PPE while working.
3. The low health status of farmers due to poor health service programs.

IMPLEMENTATION METHOD

The service method carried out in this community service activity includes efforts to improve the quality of public health. The service method used survey approaches, lectures, discussions, and demonstrations/simulations through meetings with the Kelompok Tani Muda Mandiri.

Health counseling to farmer groups with materials including an introduction to types of Occupational Diseases, Occupational Safety, and healthy lifestyles, providing counseling with KIE (Communication, Information, and Education) media. Health checks include blood pressure, blood glucose levels, uric acid levels, cholesterol levels, hemoglobin levels, and health history assessment.

The provision of *leaflets* as educational and counseling materials was carried out in order to increase farmers' knowledge about the dangers of pesticides (as one of the causes of Occupational Diseases) and the use of PPE for farmers using pesticides (Occupational Safety Standards). In this activity, *pre-test* and *post-test* were given to determine the increase in understanding of farmers as the target audience.

Implementation of counseling activities with material covering the use of farmer PPE and healthy lifestyles. Counseling activities lasted approximately 45 minutes for each material delivered by the service team. The educational material provided is the topic of work safety in farmers and the use of PPE. One of the efforts to prevent pesticide poisoning in farmers is the use of complete Personal Protective Equipment (PPE), such as masks, work clothes, boots, and gloves. PPE is a set of tools used by workers to protect all or part of their body against the possibility of potential occupational hazards in the work area. Furthermore, counseling was given about consuming healthy food (reducing fat, oil, sugar, and foods high in uric acid), eating fruits and vegetables every day, doing physical activity / exercise every day, not smoking and drinking alcoholic beverages, drinking more water per day, getting enough rest, maintaining personal and environmental hygiene, checking health regularly. In addition to counseling, participants were also given media in the form of posters on the proper use of farmers' PPE and healthy lifestyles, then posted in the Occupational Health Unit room. In order to track the health condition of farmers, the activity continues with a health check of the group members. If more concerns are discovered, they can be addressed right away and referred to the Puskesmas, the neighborhood health center, for follow-up to receive prompt and effective care. Following counseling, a post-test was administered to assess the activity.

RESULTS AND DISCUSSION

Activities in this community service are carried out through counseling, mentoring, and health examination methods. The target audience who became respondents was 30 farmers of Kelompok Tani Muda Mandiri in Banjar Pacung, Baturiti Village, Tabanan, Bali. To initiate the activities, participants and Tim Pengabdi perform a cordial meeting before counseling and take a photo together. Figure 1 is a group photo of some participants and Tim Pengabdi.

Figure 1. Group Photo of the Service Team and Participants

The activity began with an explanation of an educational lecture on work safety to farmers by using proper PPE, especially when spraying pesticides. The educational media used in health counseling in this community service activity is the *leaflet* presented in Figure 2. This counseling activity was carried out smoothly and participants could follow the material well. With the help of *leaflets* as educational media, respondents' knowledge becomes directed and structured.

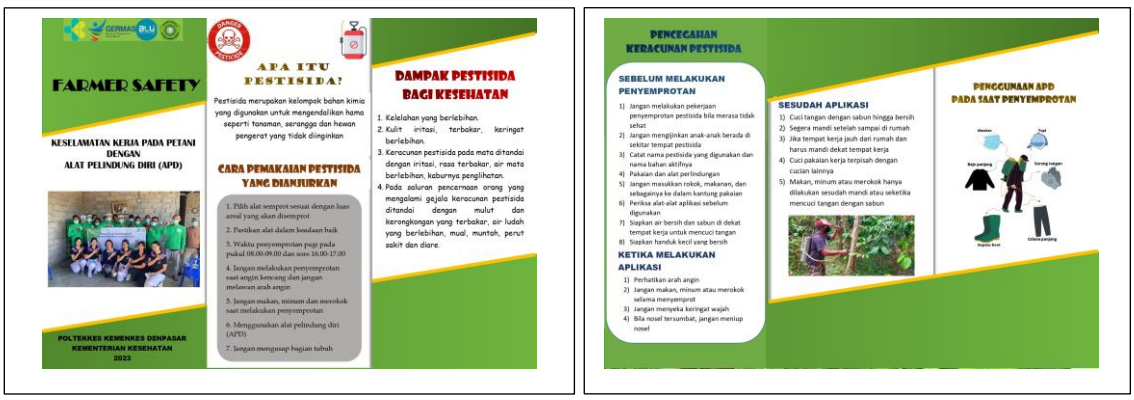

Figure 2. Occupational Safety Leaflet for Farmers with PPE

Knowledge is the result of someone knowing an object. Knowledge is an important domain in shaping behavior (Notoatmodjo, 2014). Farmers' knowledge about the importance of using PPE in spraying pesticides can be measured through questions such as the definition of PPE, types and functions of PPE, reasons for using PPE, and the criteria for good and correct PPE. Knowledge can be obtained from formal and non-formal education, such as training, direction, and discussion so that in the end it will gain knowledge and can apply it in daily activities. The majority of the members of the Kelompok Tani Muda Mandiri have completed elementary and junior high school, demonstrating the strong correlation between education and knowledge. A highly educated person looks for knowledge on what is done. The distribution of farmers' knowledge levels is presented in Table 1. A person's knowledge of an object has different levels, through several stages, among others, the stage of knowing (remembering pre-existing information after observing an object), understanding (a person must be able to interpret correctly about an object that is already known),

application (can use the knowledge in other situations), analysis (able to describe, to solve a problem), synthesis (the ability to summarize a logical relationship from the knowledge possessed), evaluation (able to justify the assessment of an object) (Notoatmodjo, 2014). Activities to measure the initial level of understanding of the farmers on the use of PPE are given through the *pre-test*. While measuring the level of knowledge of the participants after the service activities were evaluated with a *post-test*. Documentation of this activity can be seen in Figure 3.

Figure 3. Participants' Pre and Post-Test Activities

According to Notoatmodjo (2014), a person's knowledge is influenced by the person's level of education, information, culture, and experience. Another opinion similar to Notoatmodjo states that factors which can affect knowledge are a person's experience of an object and the information that the person has received (Syafriani & Saputri, 2019). The level of knowledge of farmers participating in this activity on the use of PPE in work can be seen in Table 1.

Table 1. Frequency Distribution of Farmers' Knowledge

No.	Knowledge Level	Number (Person)	Percentage (%)
1	Good	28	93
2	Simply	2	7
3	Poor	0	0
	Total	30	100

Based on Table 1, it is known that the knowledge of farmers in the use of PPE is in the sufficient category of as many as 2 respondents (7%) of 30 respondents. Knowledge of farmers in the good category as many as 28 respondents (93%) and no respondents in the category of less knowledge (poor). This state is sufficient and needs to be preserved, if not enhanced, by community members, universities, and allied organizations performing knowledge-building initiatives. Therefore, it is crucial to regularly provide farmers with counseling to boost their understanding, particularly on the use of pesticides and personal protective equipment (PPE). The method by which the Team provides counseling materials can be seen in Figure 4.

Figure 4. Delivery of Educational Materials through Counseling

In addition to the evaluation of knowledge, the farmers were also assessed for their attitude towards the use of PPE. Based on Table 2, it can be seen that the attitude of farmers toward the use of PPE is in the positive attitude category of as many as 30 respondents (100%). Farmers with a positive attitude category were able to answer attitude questions with percentages above 50% to 100%. This situation relieved the Service Team because farmers understood the topic of counseling and understood the importance of using PPE at work.

Table 2. Frequency Distribution of Farmers' Attitudes

No.	Attitude	Number (Person)	Percentage (%)
1	Positive	30	100
2	Negative	0	0
	Total	30	100

Attitude is a person's closed response to a stimulus or object that involves opinions, thoughts, feelings, attention, and other psychological symptoms. (Notoatmodjo, 2014). The definition of attitudes involving opinion and emotional factors include feelings of pleasure-displeasure, agree-disagree, good-not good, and so on. According to Ahmadi "A person who has a positive attitude towards a psychological object means that he *likes (like*) or *a favorable* attitude, if someone has a negative attitude towards a psychological object, it means that he does not like (*dislike*) or *unfavorable* attitude. According to Karina (2019) there is a close relationship between knowledge and attitude in the use of PPE by farmers. Therefore, it is necessary to regularly conduct socialization and counseling activities regarding the full use of personal protective equipment (PPE), particularly when spraying pesticides. Related organizations like the agriculture office's agricultural extension agents or the health care center (Puskesmas) can do this counseling and socializing (Hayati, Kasman, & Jannah, 2018). The activities in this community service are an effort to keep reminding farmers to reduce the risk of occupational diseases.

The final evaluation of farmers is the evaluation of PPE-related actions. Action is the response or response of farmers concerning practices that have been carried out related to PPE. The action variable uses a questionnaire consisting of 8 statements where 7 questions are positive and 1 question is negative. Table 3 shows the results of this action-related questionnaire for 30 farmers.

Table 3. Frequency Distribution of Farmers' Response

No.	Attitude	Number (Person)	Percentage (%)
1	Good	29	97
2	Bad	1	3
	Total	30	100

The results of this response evaluation are presented in Table 3. Based on these results, farmers' responses in the use of PPE are in the good category as much as 97% and the bad category as much as 3%. This percentage demonstrates that farmers can effectively support their jobs and lessen the effects of occupational diseases by using PPE.

Figure 5. Participant Health Check

The last activity in this service is a physical examination of participants including measuring blood pressure, pulse, and assessing medical history. The community service team also conducted screening blood tests including blood sugar, uric acid, cholesterol, and hemoglobin levels. Figure 5 shows the documentation of this health check-up activity. This examination is carried out to monitor the health condition of participants so that it can be known early if participants experience health problems that need to be addressed at advanced health services.

CONCLUSIONS

Up to 93% of farmers fell into the good category and 7% into the sufficient category, according to the examination of 30 farmer group members conducted after they received their education. Based on the attitude factor, all farmers (100%) have a positive attitude, and 97% of farmers have good actions. This community service has also succeeded in increasing the understanding of the proper use of PPE to prevent pesticide poisoning among Kelompok Tani Muda Mandiri. The follow-up of this activity is the need for continuous assistance to the target audience to prevent or even reduce the risk of occupational diseases.

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REFERENCES

Ahmadi, A. (2009). *Psikologi Sosial.* Jakarta: Rineka Cipta.

Akbar, F. (2018, April 5). *Hubungan Antara Pengetahuan dan Sikap Dengan Pemakaian APD (Alat Pelindung Diri) Pada Petani Bawang Merah di Desa Bojongnangka.* Surakarta: Universitas Muhammadiyah Surakarta. Retrieved Maret 12, 2024, from Institutional Repository, UMS: https://eprints.ums.ac.id/61904/10/NASKAH_PUBLIKASI%5B1%5D.pdf

Darmayanti, I. D. A. A. I., Tirtayasa, K., & Saputra, I. K. (2015). Hubungan Antara Tingkat Pengetahuan Dengan Kepatuhan Dalam Menggunakan Alat Pelindung Diri Pada Petani Pengguna Pestisida. *Coping : Community of Publishing in Nursing, 3*(3), 70-75.

Hayati, R., Kasman, & Jannah, R. (2018). Faktor-Faktor yang Berhubungan Dengan Penggunaan Alat Pelindung Diri Pada Petani Pengguna Pestisida. *PROMOTIF: Jurnal Kesehatan Masyarakat, 8*(1), 11-17. doi:https://doi.org/10.56338/pjkm.v8i1.225

Huyen, V. N., Song, N. V., Thuy, N. T., Dung, L. T. P., & Hoan, L. K. (2020). Effect of Pesticides on Farmers' Health In Tu Ky District, Hai Duong Province, Vietnam. *Sustainable Futures, 2*, 100026. doi:https://doi.org/10.1016/j.sftr.2020.100026

Karina, A. T. (2019). *Faktor- Faktor yang Berhubungan dengan Penggunaan Alat Pelindung Diri pada Petani Pengguna Pestisida di Desa Kacaribu Tahun 2019.* Retrieved April 15, 2024, from Repositori Institusi Universitas Sumatera Utara (RI-USU): https://repositori.usu.ac.id/handle/123456789/24816

Kuswana, W. S. (2016). *Ergonomi dan K3 : Kesehatan Keselamatan Kerja.* Bandung: PT Remaja Rosdakarya.

Notoatmodjo, S. (2014). *Ilmu Perilaku Kesehatan.* Jakarta: Rineka Cipta.

Raini, M. (2007). *Toksikologi Pestisida dan Penanganan Akibat Keracunan Pestisida.* Jakarta: Litbang Kesehatan.

Susanto, B. H., & Wahyuni, I. D. (2020). Edukasi Pemakaian Alat Pelindung Diri (APD) pada Petani Pengguna Pestisida. *The 3rd Conference on Innovation and Application of Science and Technology (CIASTECH)* (pp. 1173-1178). Malang: Universitas Widyagama. doi:https://doi.org/10.31328/ciastech.v3i1.2024

Syafriani, & Saputri, E. (2019). Pengaruh Penyuluhan Terhadap Pengetahuan, Sikap, dan Tindakan Petani Jeruk Di Desa Kuok Pulau Jambu Terkait Penggunaan Alat Pelindung Diri (APD) dari Bahaya Pestisida. *PREPOTIF : Jurnal Kesehatan Masyarakat, 3*(2), 54-67. doi:https://doi.org/10.31004/prepotif.v3i2.490