

Which Predisposing Factors Influence The Farmers in Compliance of Personal Protective Equipment (PPE)?

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Abstract

Farmers who work in the agricultural sector are workers who need attention in the field of occupational safety and health because of the combinations of hazard and risk. One of them is the risk of pesticides, such as poisoning to death. To prevent it, the use of appropriate PPE is the best solution, but most farmers do not comply with them. The specific purpose of this study was to find in-depth information about the use of PPE by vegetable farmers. It is a qualitative study with a phenomenological approach to study the phenomenon of PPE non-compliance among vegetable farmers. Sampling was carried out by using purposive sampling technique, which involved 18 farmers from different village. Data were analyzed using content analysis. The result showed that the farmers had worked for more than 10 years. They knew the function of PPE and the impact of not using it, education had no impact on compliance of using PPE based on the majority of farmer's education. Also, the farmers can not provide the nominal for purchasing PPE, because it is incidental so income has not contributed to compliance of using PPE. And although most of the farmers have a good attitude to compliance of using PPE, it has no impact on compliance of using PPE in vegetable farmers. It can conclude that the predisposing factors in this study are considered insufficient to make a positive contribution to compliance with the use of PPE.

Keywords: *predisposing factors, enabling factors, reinforcing factors, pesticides*

Introduction

One of the main sectors that play an important role in the national economy in absorbing labor is agricultural sector. Indonesian Central Bureau of Statistics reports that there are 33.48 million workers (farmers) of the total productive age.¹ Farmers who work in the agricultural sector are workers who need attention in the field of occupational safety and health considering that there are many combinations of hazards that exist in the work process such as the use of equipment, chemicals, plants, animals, and others.²

WHO affirmed that farmers are at great risk of being exposed to pesticides.³ Pesticides are chemical substances and other substances as well as microorganisms and viruses used to control various pests. Pesticides can prevent agricultural land from being attacked by pests in order to maintain and increase crop yields. However, the use of pesticides not only has a positive impact but also causes health problems for farmers. A study conducted by Waggoner et al., showed that pesticide use for > 60 days can result in fatal injury.⁴ WHO also reported that there are approximately 400,000-2 million people experiencing pesticide poisoning, which causes the death of between 10,000-40,000 people worldwide. In Indonesia, it is estimated that there are 300,000 cases of poisoning each year, although only a small proportion are fatal.⁵

Pesticide exposure can be minimized by using Personal Protective Equipment (PPE) at all stages of handling and use.^{6,7} The use of appropriate PPE is the

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best solution in preventing occupational diseases in the agricultural sector. However, most farmers do not comply with using PPE while working.⁸

Pattapang, Tinggimoncong, Gowa regency is one of the areas that cultivates vegetables in South Sulawesi. Based on preliminary observations, it was found that farmers' knowledge and attitudes towards the use of PPE were in the good category which unfortunately was not in line with their actions. This condition was the basis for researchers to conduct a study on the phenomenon of PPE noncompliance among farmers. The specific purpose of this study was to find in-depth information about the use of PPE by vegetable farmers in Pattapang, Tinggimoncong, Gowa Regency.

Material and Methods

It is a qualitative study with a phenomenological approach to study the phenomenon of PPE non-compliance among vegetable farmers in Pattapang, Tinggimoncong, Gowa Regency. Sampling was carried out by using purposive sampling technique, which involved 5 farmers of Lembanna village, 5 farmers of Buluballea village, 4 farmers of Kampung Beru village, and 4 farmers of Pattapang village. Data were analyzed using content analysis including the stages of recording transcripts, data reduction, informant coding, and drawing conclusions.

Findings

Predisposing Factors:

Working Period

The informants in this study mostly started farming at a young age, so it could be said that they had worked for more than 10 years.

"I started farming since elementary school, now I am about 40 years old."

"I have been farming for about 20 years. I am now 55 years old."

The habit of helping parents is one of the factors that influence to be a vegetable farmer

Knowledge

All vegetable farmers in Pattapang, Tinggimoncong,

Gowa Regency in this study had good knowledge regarding the use of PPE. They knew the function of PPE and the impact of not using it.

"Masks are used for respiratory protection."

"If I do not wear a mask, I can get pesticide poisoning when I spray vegetables with pesticides."

In this study, knowledge influences in the use of PPE but did not have a significant impact on the compliance in the use of PPE

Education

Most of the informants in this study were elementary school graduates.

"I have been farming since elementary school."

"I only finished elementary school."

In this study, education had no impact on compliance of using PPE based on the majority of farmer's education (elementary school)

Income

The monthly income of vegetable farmers in Pattapang Village varied, but on average they could earn IDR 1,000,000 a month. This varying income was caused by the uncertain or changing market price of their agricultural products. It was also influenced by the area of land cultivated by farmers and the types of vegetables. Most farmers did not have a special allocation of funds for purchasing PPE since they said that they would buy new PPE if the PPE they owned was completely damaged and could no longer be used.

"I will buy new PPE if my PPE is damaged."

This shows that farmers cannot provide the nominal for purchasing PPE, because it is incidental. So, income has not contributed to compliance of using PPE.

Attitude

Most of the informants in this study had a fairly good attitude in terms of response to compliance with the use of PPE.

"I actually agree (if there is a penalty for those who do not use PPE), because it is for the good of the farmers"

themselves, but the rules must be clear”

“If there must be a sanction, please apply the rules.”

Although most of the farmers have a good attitude to compliance of using PPE, it has no impact on compliance of using PPE in vegetable farmers.

Discussion

Predisposing factors are determining factors in behavior; factors that facilitate and underlie the occurrence of certain behaviors. Predisposing factors are antecedents of behavior that describe rationale or motivation to perform an action, perceived values and needs, which are related to individual or group motivation to act. They are mostly in the psychological domain. In general, it can be said that predisposing factors are personal considerations of an individual or group that influence the occurrence of a behavior. These considerations can support or hinder behavior.⁹

In the case of vegetable farmers in Pattapang, the majority of them did not have a strong intrinsic motivation to act or behave better. It was largely influenced by the belief factor that was very strong had by farmers, for example they believed that their current condition was still healthy for farming due to the correct farming methods. Thus, the existence of new knowledge related to agriculture will not be directly and easily applied because of their beliefs and values. However, it is also possible for them to apply the new knowledge as long as it is good for farmers and in line with the concepts and values held by farmers in Pattapang.

Moreover, matters related to farmers' values and beliefs are the decisions they make when facing certain conditions, such as responses or planning for purchasing PPE for farming. The majority of informants in this study did not plan to buy or provide PPE. They only relied on the PPE they had, even though it was not in accordance with the PPE standards required. However, if they needed to buy PPE, most vegetable farmers would buy PPE that was available according to their needs, without paying attention and considering the safety and quality standards of the PPE.

More importantly, income is also usually used to assess the relationship between income levels and utilization of health services and prevention efforts.

Limited income can cause a person not to maintain the quality of his health. The higher a person's income, the higher the efforts to prevent and utilize health services that he/she does. In accordance with the economic conditions of most farmers in Pattapang, the monthly income obtained varied greatly, which depended on the value of the product on the market. The market price uncertainty could indirectly influence farmers' decisions in allocating/planning PPE based on safety and health standards. Accordingly, purchasing PPE was not a priority for vegetable farmers in Pattapang, but it was only incidental.

Most of the informants in this study had a long working period of > 10 years. The experiences that farmers get through their work should have a positive impact on compliance with the use of PPE while farming. In fact, the working period does not have a significant impact on compliance with the use of PPE. Farmers with long working period tended not to comply with the use of PPE. Farming experience with minimal incidents was one of the references for farmers with a long working period. This experience made them believe that the use of PPE in farming was not mandatory and needed to be done continuously.

The higher a person's education, the easier it is to receive information, so that the more knowledge he/she has. Conversely, low levels of education can hinder the development of one's attitudes towards newly introduced values. The majority of informants in this study are elementary school graduates. The lack of knowledge related to agricultural safety could be caused by the habits of farmers in Pattapang who had to help their parents earn money by farming since childhood. Thus, habits and environmental support made the majority of vegetable farmers in Pattapang finish elementary school and did not continue to pursue higher education. Based on the research of Oyekale, formal education has influence to the safety precaution in spraying agrochemicals and use of PPE in Cocoa Farmer in Cameroon.¹⁰

Lack of opportunities to gain more knowledge through school is one of the factors that can cause PPE non-compliance among the farmers. Education obtained in school is a factor that can shape character, habits, discipline and moral values for one's mental development, so that education is likened to a foundation

in the formation of a person.

Knowledge is the result of human sensing or the result of someone's knowledge of an object. Sensing occurs through the five senses and most of human knowledge is obtained through hearing and sight. The knowledge possessed by individuals is one of the factors determining them in seeking and requesting health service efforts.¹¹

The majority of farmers had fairly good knowledge and attitudes about agricultural OSH. They knew the function of the PPE required and had an understanding of the impacts of not using PPE. Most of the farmers obtained agricultural OSH knowledge from OSH promotions carried out by related agencies, such as the Gowa Regency agriculture and plantation office, counseling carried out by farmer groups or students who were doing Field Work Practices. Regarding the attitude aspect, vegetable farmers in Pattapang had a fairly good attitude response regarding the use of PPE, but the final response did not show that. In line with study of Sharifzadeh et al., knowledge have an important role in case of PPE acceptance and use.¹²

In addition, attitude is not yet an action or activity, but it is a predisposition to the action of a behavior. Attitude is the readiness to react to objects in a certain environment as an appreciation of the object.¹³ Attitude factor has a fairly weak relationship with compliance with the use of PPE.

Conclusion

Predisposing factors such as working period, income, education, knowledge, and attitudes as intrinsic factors of the farmer are considered insufficient to make a positive contribution to compliance with the use of PPE.

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