

CADRE'S EMPOWERMENT AND COUNSELING IN INCREASING SOCIETY'S BEHAVIOR ABOUT CONTENT AND EFFECT OF PESTICIDES ON FRESH VEGETABLES

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ABSTRACT

Background: The growing health problem in Indonesia is a cancer, one of causes is that food which is consumed containing carcinogenic. Society's knowledge is very dominant affected toward action/behavior which is done toward choice, food processing which is consumed in daily, especially highlanders who really like consuming fresh vegetable. Unconsciously, by improper processing, pesticide or other chemical substances containing in vegetable which is in human body. It is still underestimated by the public, even health officer, it can be known from health counseling especially about health-food of free pesticide or the proper steps is very rare to be done.

Objectives: Through community service we want to give knowledge about pesticide with purpose in order to change society's behavior about content and effect of pesticide on fresh vegetable in Sumbergepoh to be better.

Methods: The community service using lecture method, discussion, role play, and mentoring the cadres and Sumbergepoh society, that was held on September- November 2016. Analysis data used frequency distribution.

Results: From the result of community service obtained were as many as 48 counseling participants with the pre-test score 46.8 and post-test score 87.94. The result is a significant increase in knowledge of 0.000 with t score=16.9. While 95% CI between -46.8 – -36.7, meant the effect was strong because it was not passing number 1; giving treatment can increase 3-4x knowledge compared with not to be given.

Conclusion: Based on the evaluation result could be concluded that participants of counseling were very enthusiast toward materials which explained. And also, they would implement in their home. The activity was so beneficial to increase knowledge and improve society's behavior in processing fresh vegetable toward pesticide.

Key words: Health education, knowledge, behavior content and pesticide effect of fresh vegetable.

INTRODUCTION

One of the elements of well-being is an effort to gain healthy lifestyle skill for every citizen in creating optimal health degree to create health development in Indonesia. Body health is very important to be aware because with healthy body, everyone could do the activity to fulfill daily needs.

Application of current technology in a health perspective is a health risk. Including health problems faced in agriculture, not apart from the use of technology which is

used to process agricultural field. When there is a change or the choice of technology, implicitly will happen health risk factor. Those are hoe technology changed by tractor, pest eradication with predators changed by pesticide material, it will be very affected to health (Ahmadi, 2008).

Our body needs extra attention, especially health that needs to be maintained. One of them is by consuming healthy foods. Five important components in food we need, one of which is vegetable

which is a very important thing. Vegetables contain various kinds of substances needed by the body, such as iron, potassium, phosphorus, calcium and vitamins. Unfortunately, there are still many ordinary people who do not understand the other content and the harmful effects, such as pesticides in vegetables which are not needed by the body. Anwar (2004) explains, pesticides enter the human body through vegetables and fruit. At present, the behavior of farmers in using pesticides to kill pests is out of control, both in terms of dose and frequency of use. As a result, the current pesticide content in vegetables and fruits consumed by the community is very high. The high dose of pesticides, especially those that are not easily soluble in water, contained in vegetables and fruits, will enter the body and cause disease and become one of the causes of damage to nerve cells. Health problems that pesticides can cause in the body include poisoning, diarrhea, cancer, and can increase the risk of Parkinson's disease and other health problems.

According to Setiono, Mansyur, Ahbana., (2010), WHO data worldwide are estimated to occur 400,000 - 2 million per year experiencing pesticide poisoning which causes deaths between 10,000 - 40,000 people. WHO data in 2009 estimated that at least 300,000 people die each year from pesticide poisoning.

In Indonesia to get an accurate illustration of the number of victims of pesticide poisoning is very difficult to obtain. Because there is no systematic and periodic reporting and monitoring system. Research in Lembang and Pangalengan areas, West Java, found pesticide residues in water, soil, vegetables, cow's milk and mother's milk (Sudibyaningsih, 1993).

This kind of situation is influenced by many factors, one of which is the knowledge that people have varies greatly,

so that it affects behavior in everyday life. Especially the behavior in processing food consumed is mainly the consumption of fresh vegetables. Improper processing, pesticides or other chemicals contained in the body. The high level of pesticide residues in food can result in a buildup of acetylene in the nerves and cause damage to nerve cells (Achmadi, 2008 and Sartono, 2002).

The phenomenon which occurs really need the treatment to create community's interest in order to be better in understanding pesticides and vegetables, so that the behavior in processing vegetables to healthy vegetables can be consumed. Some ways to deal with the causes of lack of community behavior are the addition of knowledge through counseling or health education to the community.

It is expected that counseling will be able to increase the knowledge, understanding, thinking of the community so that the behavior they have can lead to a more positive direction, it is expected to improve health status or otherwise reduce morbidity and mortality.

Survey data to Sumbergepoh Village found a lack of knowledge and behavior in processing and the effects of pesticides contained in vegetables was not good. Of the 3 people, they cleaned vegetables using water in a bucket (not running water), dyed 2 times immediately cooked or consumed as fresh vegetables, 2 people when cooking vegetables left until the conditions are too ripe for easy chewing reasons, 3 people do not understand the danger of pesticides if they are still stick to vegetables and enter the body.

For this reason, it is important for the community to know how the effects and content of pesticides, especially on fresh vegetables.

METHODS

Study Design

The method used is to provide education through counseling to increase knowledge and skills regarding the effect and content of pesticides, especially in fresh vegetables in Sumbergepoh Village, Lawang Subdistrict, Malang Regency.

Setting

This research was conducted at Sumbergepoh Village, Lawang Subdistrict, Malang Regency on September- November 2016.

Research Subject

The target in this study was the cadres and Sumbergepoh society, as many as 48 respondents.

Instruments

The activity begins with a pre-test, then the core activities are counseling with lecture, discussion and role play methods, then followed by a post test. Implementation of counseling on the effect and content of pesticides, especially on fresh vegetables, and how to clean and process vegetables begins with a time contract with cadres, the next opportunity is to contract time with cadres and the community. Mentoring is done three times, and each mentoring activity is mentored by students with the following schedule:

- a) Mentoring 1 with cadres was held on October 22, 2016
- b) Mentoring 2 with cadres and community RW 1 was held on October 23, 2016
- c) Mentoring 3 together with cadres and community RW 2 was held on 30 October 2016
- d) Mentoring 4 with cadres and community RW 3 held on November 6, 2016

Data Analysis

In this study, the researchers used Analysis data used frequency distribution. The statistical test in this study used the Paired Sample T Test.

Ethical Consideration

This research has gone through an ethical test from the Health Polytechnic of the Ministry of Health, Malang and obtained permission from National Unity and Politics of Malang Regency.

RESULTS

Based on the results of the evaluation it can be concluded that the extension participants were very enthusiastic about the material presented, active participants in the discussion activities with evident feedback from participants, and when the role play activities the participants actively followed and practiced about the material that had been taught. And they want to carry out in their homes. These activities are very useful to increase knowledge and improve community behavior in the management of fresh vegetables against the content of pesticides

Distribution on Behavior Frequency before Counseling

Table 1. Distribution on Behavior Frequency of Cadre's and Sumbergepoh Society Before and After Counseling (n = 48).

Resp No	Pre-test	Post-test	Range
1.	40	80	40
2.	50	80	30
3.	60	90	30
4.	70	100	30
5.	60	80	20
6.	60	90	30
7.	40	90	50
8.	50	90	40
9.	50	80	30
10.	50	80	30
11.	50	80	30
12.	50	80	30
13.	50	80	30
14.	30	100	70
15.	30	100	70
16.	30	90	60
17.	40	90	50
18.	30	80	50
19.	30	90	60
20.	40	100	60
21.	40	100	60
22.	50	100	50
23.	60	90	30
24.	50	100	50
25.	50	80	30
26.	50	70	20
27.	50	80	30
28.	60	90	30
29.	40	80	40
30.	60	90	30
31.	30	90	60
32.	40	90	50
33.	40	100	60
34.	40	80	40
35.	40	100	60
36.	40	100	60
37.	50	100	50
38.	60	90	30
39.	50	80	30
40.	60	90	30
41.	40	80	40
42.	50	80	30
43.	60	90	30
44.	40	80	40
45.	60	90	30
46.	30	90	60
47.	40	90	50
48.	40	100	60
Mean	46.18	87.94	-41.77

Table 1 shows that pre-test score and post-test score of counseling participants experience score change (increase) which

means there is a change of knowledge to be better after getting counseling about on effects and pesticide content and how to manage fresh vegetable.

The Effect of Counseling to Cadre's and Sumbergepoh Society

Table 2. The Effect of Counseling to Cadre's and Sumbergepoh Society in September-November 2016.

		Mean	N	Std Deviation	Std Error Mean
Pair 1	Pretest	46.18	48	10.73	1.84
	Post Test	87.94	48	8.45	1.45
		N	Correlation	Sig	
Pair 1	retest & Post Test	48	-0,12	0.49	

		mean	Paired Differences Std Deviation	95% Confidence Interval of the Difference Lower Upper	t	df	Sig(2-tailed)
Pair 1	Pretest & Post Test	-41,7	14,4	-46,8 -36,7	-16,9	33	0,00

The result is significantly increasing of knowledge 0.000 with t score= -16.9. While 95% CI between -46.8 – -36.7, means that the affect is strong because not passing number 1; giving treatment can increase 3-4x knowledge compared not to be given.

Questions List and Response in the Discussion Section

Table 3. Questions List and Response in Discussion Section

No.	Questions	Response
1.	What exactly is meant by pesticides?	Pesticides are chemicals that are used to control or eradicate pests. Pesticides are also poisoning but also have a special purpose to protect human agricultural products from other organisms. Therefore, if pesticides are to be used, the choice must be in accordance with the specificity of eradicating pests
2.	What are the effects of pesticides when entering or touching the body?	It can cause poisoning, Chronic exposure is thought to cause reproductive problems and increase the risk of cancer, have neurological and psychological and effects on the immune system. Chemicals can cause damage to other living things through various types of methods, namely penetration through the skin, absorption through the lungs, absorption through the digestive tract.
3.	Please explain about the effects of various pesticides	Paraquat, captafol, mancozeb, 2,4-D (effect: Contact dermatitis) Benomyl, DDT, linden, zineb, malathion (effects: skin sensitization, allergic reactions, skin rashes) Heksaklobenzen, benomyl, zineb (effect: allergic photo reaction) Organochlorine Pesticides (Effect: Chloracne) Hexachlorobenzene (Effect: deep scarring, hair loss)
4.	How to get rid of the right pesticides? Please explain again	Use clean water flows to clean the vegetables. Do not use stagnant water, because the water that is stagnant (soaked) will make the dissolved poison stick to the vegetables again. Rinse vegetables with clean water. b. Wash all vegetable parts, including the inside. Discard of the outer portion of leafy vegetables. c. Wash with special food grade soap such as pigeon liquid cleanser or mama lemon. d. Use a toothbrush or soft brush to clean pesticides from fruits and vegetables, and still use water flow. e. Besides washing, soaking with hot water (blanching) containing salt will also reduce the content of pesticides. f. Raw vegetables may contain higher pesticide residues. Proper cooking or processing is proven to reduce the residual content of pesticides
5.	How to store vegetables, fruit in the refrigerator?	Make sure the fruits and vegetables are fresh and durable. b. Vegetables and fruit are washed, wrapped in paper and stored in the refrigerator. c. If there is no refrigerator, keep it in a cool, dim place in the kitchen. Avoid using plastic bags so that they do not wither and lose their vitamins. d. Fruits like bananas should not be stored in the refrigerator because the skin will become black and rotten. e. Vegetables and fruit in the package should be moved in the container, then stored in the refrigerator
6.	Are there diseases that arise due to pesticides?	Yes, there are; Diabetes, Cancer, autism, obesity, Parkinson's, infertility, birth defects

Role Play Section

Participants took turns on practicing how to clean fresh vegetables and fruits which can be done at home, supervised by cadres and officers.

Mentoring Section

Mentoring is done three times, and each mentoring activity is mentored by students with the following results:

- Mentoring 1 with cadres was held on October 22, 2016 participants attended 3 people
- Mentoring 2 together with cadres and community of RW 1 held on 23 October 2016 participants attended 15 people
- Mentoring 3 together with cadres and community RW 2 held on 30 October 2016 participants attended 15 people
- Mentoring 4 together with cadres and community RW 3 held on 6 November 2016 participants attended 15 people

During the implementation $\geq 75\%$ of the cadre's and Sumberngepoh Society can do it correctly.

DISCUSSION

The results of the above activities show that extension activities can increase people's knowledge and behavior in managing fresh vegetables and fruits, this can be seen by increasing the average value of participants from 46.2 to 87.9 and implementing how to clean and manage vegetables and fresh fruit $\geq 75\%$ can do it right.

Health education or counseling is one of the efforts to prevent the occurrence of illness or disease and improve people's behavior through learning so that it is hoped that the community can help themselves and their families, also want to behave in a healthy life or maintain healthy behaviors they already have (Kholid A, 2012).

Knowledge is the result obtained from knowing what happens after someone does sensing a particular object. A person's knowledge can be obtained from the learning process, in the process of self-learning there are influencing factors such as motivation, means of information, and social culture.

Knowledge is something that is formed continuously which will experience

reorganization by new understandings (Budiman and Riyanto, 2013).

Health education aims to provide information to the public about understanding, benefits, and interpretations. Understanding of health education according to Notoatmodjo (2005) which defines health education is an activity or effort to convey messages about health to individuals, groups or communities. Gupta's, et al (2009) explains that health education can improve knowledge and practice. This means that health education seeks that individuals, groups or communities can realize or know how to maintain health, avoid or prevent things that can harm health. This is explained in the study of Shalini, Varghese & Nayak, M. (2011). that with health education can help increase awareness to foster personal health.

But in general, the increase in knowledge occurs because it is influenced by factors such as information from outside / mass media, experience, education, age, and environment. Information obtained by individuals both from formal and non-formal education can provide short-term influence so that it can produce changes or increase in knowledge (Budiman & Riyanto, 2013).

The results of the mentoring implementation that participants can do well are almost $\geq 75\%$. A person's behavior will be influenced by knowledge, the better the knowledge of someone about health, the person will do good health care.

This is in line with Aryantiningsih's research, (2014) According to Green knowledge does not always cause behavior changes, but shows a positive relationship between the two variables. Knowledge is needed for someone to guide him in acting, as the stages of knowledge proposed by Notoadmodjo, namely: know, understand, application, analysis, synthesis, and

evaluation. Knowledge can be a motivation for someone to behave well in managing fresh vegetables. Poor people's knowledge results in less behavior, which causes an increase in morbidity rates. Limited knowledge will result in adverse effects on maintaining health. Knowledge of its benefits can be obtained from personal experience in everyday life.

CONCLUSION

There is an increase in public knowledge about the effect and content of pesticides and management of fresh vegetables, this is evident from the increase in the average value of the post-test higher than the pre-test.

There is an increase in the behavior of doing vegetable management, i.e. $\geq 75\%$ of the cadre's and Sumbergepoh Society can do it correctly.

SUGGESTION

From the conclusion above, the implementer can give suggestions that are expected to be useful, such as:

It is expected that officers and the cadres will continue to carry out intensive counseling to the society about the content and effects of pesticides on fresh vegetables, and how to reduce the pesticide content which can harm if it enters or be consumed by human beings.

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