Improving Skills and Knowledge of Healthy Drink Intake in PKK Cadres Sempu Village Wonokerto Turi Sleman

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Abstract. The temperature in Sempu, Village of Wonokerto Turi Sleman is cool on weekdays, while at dusk and dawn the temperature is cold because it is located on a medium-high plain. This cold condition requires warm and healthy intake, especially for elderly people. This is because Sleman Regency has the highest average of life expectancy (UHH) in Indonesia. The pre-elderly population (45-59 years) is 53,146 people and the elderly population (> 60 years) is 55,967 people out of a total population of 1,090,567 people. The large number of elderly population requires serious attention in the health sector so that it does not become a burden. Thus, a promotive preventive program is needed. The morbidity rate for the elderly is the proportion of health problems that interfere with daily activities. The morbidity rate of the elderly in rural areas tends to be higher than in urban areas. It is important for the elderly to maintain their health by consuming nutritious food and additional mineral intake which has high health benefits, considering that the elderly has experienced a decrease in the performance of their organs. There are many natural ingredients that have healthful properties for the body, especially for the elderly in rural areas, and they are easy to grow in Turi with cool weather conditions. Among those natural ingredients is ginger (Zingiber officinale). Phenol compounds are antioxidants, which are thought to protect cells from damage. Ginger has properties for treating impotence, coughs, aching rheumatic pain, headaches, rheumatism, back pain, and colds. Those health problems often affect the elderly. Not many people, especially PKK Dusun (Hamlet of) Sempu, know the benefits of ginger widely and how to process it as a healthy drink. So far, ginger is only used as cooking spice. The purpose of this service is to increase knowledge and skills in making ginger-based healthy drinks for the community and PKK in Sempu, Turi. The method used was the lecture and practice method. Conclusion: This activity was fully completed, and the community was enthusiastic and grateful. The result of this activity was an increase in knowledge and understanding of the benefits of ginger by 15.6%.

Keywords: Healthy drink, Ginger, Sempu Hamlet.

1 Introduction

Turi Sub-District, which is located in the north of the capital town of Sleman Regency with an area of 4,309 Ha, is directly adjacent to the Merapi/Central Java Forest in the north, Pakem Sub-District in the east, Sleman Sub-District in the south, and Tempel Sub-District in the west. The administrative area of the Turi Sub-District includes 4 villages, namely
Girikerto Village, Wonokerto Village, Donokerto Village and Bangunkerto Village. Wonokerto Village, which is one of the villages in Turi Sub-District, Sleman, Special Region of Yogyakarta, has an area of approximately 1,558 hectares and is bordered by Girikerto Village in the north and east, Donokerto Village in the south and Magelang Regency in the west. With 13 hamlets, 63 RT and 29 RW (neighborhoods), Wonokerto Village itself is located at the foot of Mount Merapi with a distance of about 4-6 km from the peak. Wonokerto Village, Kapanewon (Sub-District of) Turi, Sleman Regency is located on the north side of the Special Region of Yogyakarta, which is the southwestern slope of Mount Merapi. The geographical conditions are height of land of 600 masl, the amount of rainfall of 3,908 mm/year, the topography (lowlands, heights, coasts) of high, and average air temperature of 27 °C. The weather is quite cool during the day, but becomes cold during the afternoon, evening and morning. This cold condition requires warm and healthy intake, especially for elderly people. It is because Sleman Regency has the highest average of life expectancy (UHH) in Indonesia. The pre-elderly population (45-59 years) is 53,146 people and the elderly population (> 60 years) is 55,967 people, out of a total population of 1,090,567 people. The large number of elderly population needs serious attention in the health sector so that it does not become a burden. Thus, a preventive promotive program is needed. However, behind the increase in life expectancy, there are challenges that must be watched out for, which is that in the future, Indonesia will face a triple burden, namely in addition to increasing birth rates and disease burdens (infectious and non-infectious), there will also be an increase in the number of dependents of the productive age group on the productive age group, unproductive age. The aging process will have an impact on various aspects of life, be it social, economic, or health aspects. Viewed from the health aspect, with increasing age, the elderly is more susceptible to various physical complaints, due to natural factors or disease. The morbidity rate is one of the indicators used to measure the health status of the population. The morbidity rate for the elderly is the proportion of health problems that interfere with daily activities in the past month. According to the Ministry of Health (2014), it was stated that in 2008-2012, the morbidity rate of the elderly in urban areas tended to be lower than that of rural areas, meaning that the health status of the elderly in urban areas was relatively better compared to the elderly living in rural areas. It is important for the elderly to maintain their health by consuming nutritious food and additional mineral intake which has high health benefits, considering that the elderly have experienced a decline in the performance of their organs.

There are many natural ingredients that have a healthy effect on the body, especially for the elderly in rural areas, and are easy to grow in hamlets in Turi with cool weather conditions. Among these natural ingredients is ginger (Zingiber officinale).

Ginger is known to contain a number of phenolic compounds that are antioxidative, which are thought to protect cells from damage. Ginger has properties for treating impotence, coughs, body aches, headaches, rheumatism, back pain, and colds. These health problems are often endured by the elderly. Ginger rhizome contains nutrients, including energy (79 kcal/100 g), carbohydrates (17.86 g/100 g), fiber (3.60 g/100 g), protein (3.57 g/100 g), sodium (14 mg/100 g), iron (1.15 g/100 g), potassium (33 mg/100 g), and vitamin C (7.7 mg/100 g). In addition, ginger contains phytochemicals, including alkaloids, flavonoids, phenolics, triterpenoids, and saponins.

Based on observations with Dukuh (Head of Hamlet) Sempu, Mr. Ridwan, it was revealed that so far there has been no training in making instant healthy drinks with rhizome-based ingredients that have a healthy effect on the body, such as ginger. Even though it is very easy to find ginger rhizome in Sempu hamlet, so far, it is only sold cheaply and is widely used as spice for cooking vegetables and side dishes. Therefore, training and increased knowledge are needed to utilize natural ingredients around the houses to be used as drinks as
well as medicine to maintain the health of each family. The hamlet was given advice by involving PKK (family welfare program) women as drivers or activators of social activities with members of the mothers. Apart from that, PKK women or mothers have also never received such training.

Partner Problems:
1. Ginger rhizome in Sempu hamlet is still used as cooking spice
2. Not many people know about the broad benefits of ginger rhizome
3. The community has never received training in making ginger-based instant healthy drinks

2 Methodology

This activity is carried out in collaboration with partners which is realized by signing a collaboration in community service activities. This activity was carried out with a series of activities using the lecture method and practice/demonstration. There was a series of activities as follows:
1. Conducted education/ counselling about the benefit of ginger
2. Practiced how to make ginger drink
3. Initiated to produce ginger drink for sale

Evaluation of the implementation of activities with pre-post tests to measure participants' increased knowledge regarding the knowledge on ginger.

![Figure 1. Flow of community service activities](image)

3 Results and Discussion

The socialization of activities was carried out for the implementation of counselling and training in order to obtain an agreement on the day, location, date and preparation of infrastructure facilities as well as ingredients.

3.1. Counselling and training of the making of instant healthy drink

The counseling activity was carried out at Dukuh Sempu’s house, attended by around 30 participants, but only 16 participants submitted complete data. The description of the participants is as in table 1.

Table 1. Overview of the counselling and training participants

<table>
<thead>
<tr>
<th>Participants</th>
<th>Education</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average of Age (years)</td>
<td>Elementary School</td>
<td>2</td>
</tr>
<tr>
<td>43.55±12.52</td>
<td>High School</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Diploma 3</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>College</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>
The age of the participants ranges from 30 to 60 years, with the highest level of education of high school.

The pre-test session, to find out the participants' knowledge before counselling was carried out, as shown in Figure 2 was followed by counselling and questions and answers session about the benefits of consuming ginger and post test.

Some of the questions raised by the participants included how to spread the products of the drink so that it would sell well. The answer was that economic power must cohere with the community itself. So, the products could be made by themselves, consumed by themselves and distributed among themselves. It could be consumed as drinks in meetings, served for entertaining guests, taken as souvenirs when traveling.

Figure 2. Pre-test, counselling, question and answer session, and post test about the benefits of consuming ginger

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Figure 3. The results of the pre-post tests of participants about ginger drinks

The pre-test average is 50, while the post test average increases, namely 57.8. So, the increase in the value is 15.6%, as shown in Table 2.

Table 2. Average of pre and post test results

<table>
<thead>
<tr>
<th>Average of Pre-test</th>
<th>Average of Post test</th>
</tr>
</thead>
<tbody>
<tr>
<td>50±12,08</td>
<td>57,8±7,74</td>
</tr>
</tbody>
</table>

3.2. Training session of ginger-based instant drink making.

It started from the process of choosing clean ginger, and slicing it or chopping it in a blender with a ratio of 1:1 (ginger and water). Then, it was filtered and let restrained for about 1 hour so that the tempering substance was separated. The next was the top liquid was poured and cooked with the addition of spices, cloves, cinnamon and lemongrass. Later on, it was cooked over medium heat so that the water was reduced by 30%, filtered and separated from
the spices. Then, the liquid was cooked again. If it has been reduced by 50%, it was added with 1 kilogram of sugar. It was continued by stirring it over low heat until crystals of ginger sugar was formed.

Figure 3. Practice and demonstration of the making of instant ginger drink

Figure 4. Ingredients and products of instant ginger drinks ready for sale or self-consumption

3.3. Instant ginger drink business group by PKK Dusun Sempu

As a follow-up to this activity, the ginger entrepreneur group of Sempu was initiated by the ladies in the hamlet. The management structure of the group is shown in Figure 3.

Figure 5. The organizational structure of the Ginger UMKM (MSME) of PKK of Sempu
Furthermore, the PKK produced ginger drinks for the initiation of its MSME activities as follows: The PKK group worked on 25 kg of ginger for the initial production, which was carried out by the management and members, and was assisted by KKN students of group 256.

![Image of ginger production](image)

Figure 6. Production of Sempu ginger healthy drink by PKK Dusun Sempu

Then, a detailed analysis of production was carried out to determine the selling price.

<table>
<thead>
<tr>
<th>Tools and Ingredients</th>
<th>Amount</th>
<th>Price</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ginger</td>
<td>30 kg</td>
<td>Rp 10,000</td>
<td>Rp 300,000</td>
</tr>
<tr>
<td>Sugar</td>
<td>2 kg</td>
<td>Rp 13,000</td>
<td>Rp 325,000</td>
</tr>
<tr>
<td>Cinnamon</td>
<td></td>
<td>Rp 15,000</td>
<td>Rp 15,000</td>
</tr>
<tr>
<td>Clove</td>
<td></td>
<td>Rp 15,000</td>
<td>Rp 15,000</td>
</tr>
<tr>
<td>Wooden Spoon</td>
<td>3</td>
<td>Rp 10,000</td>
<td>Rp 30,000</td>
</tr>
<tr>
<td>Stainless Strainer</td>
<td>3</td>
<td>Rp 15,000</td>
<td>Rp 45,000</td>
</tr>
<tr>
<td>Plastic Wrap</td>
<td>2 packs</td>
<td>Rp 15,000</td>
<td>Rp 30,000</td>
</tr>
<tr>
<td>Ginger Sticker</td>
<td></td>
<td>Rp 30,000</td>
<td>Rp 30,000</td>
</tr>
<tr>
<td>Plastic Gloves</td>
<td>1 pack</td>
<td>Rp 10,000</td>
<td>Rp 10,000</td>
</tr>
</tbody>
</table>

**TOTAL** | Rp 800,000

Calculation of Making 15 kg of Ginger:
Price of 15 kg Ginger = IDR 10,000 x 15 = IDR 150,000
Price of 20 kg Sugar = 20 x IDR 13,000 = IDR 260,000
Price for stickers and plastic = IDR 30,000
Other needs = IDR 30,000
Total = IDR 470,000
The number of product = 150 Packs
Selling price per pack = 10,000 for a net product of 150 grams

By Calculation:
Selling Price x Number of Product - Purchase Price of Ingredients / Number of Product
IDR 10,000 x 150 Packs – IDR 470,000 / 150 Packs
= IDR 6,000

Furthermore, marketing was carried out in several stalls around Sempu hamlet as shown below.
Furthermore, for the continuation of this activity, they also planted red ginger seeds on the Dukuh's (Head of Hamlet) land, which later became ingredients for making Sempu ginger drink. As in the following figure (Figure 8).

4 Conclusions

Community service activities in Sempu Hamlet have been well completed. This activity was very enthusiastically welcomed by partners. Partners continued this activity by forming the Sempu Ginger UMKM. Sempu ginger development activities were able to increase participants' knowledge by 16.6%.

We would like express our gratitude to LPM UMY for supporting this activity.

References


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