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Empowering the Rural Communities through Education on the Use of Chrysanthemums as Medicinal Plants and Herbal Tea

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Abstract

Chrysanthemum is widely known as an ornamental plant. However, it can also be used as a medicinal plant and be processed into healthy beverages as well which is known as chrysanthemum tea. This Community Service Program (CSP) was aimed to educate the rural community, especially the women of Empowering Family Welfare (EFW) team about the role of chrysanthemum plants in the prevention and treatment of various diseases such as fever, hypertension, osteoporosis, and eye health as well as to make chrysanthemum tea as a healthy beverage. CSP was carried out through outreach activities that consist of presentation and discussion (question and answer), demonstration of making chrysanthemum tea, and distribution of questionnaires to determine the participant's understanding of the use of chrysanthemum just before and after the implementation of CSP activities. The results of the questionnaire showed that participants' knowledge about the use of chrysanthemum as medicinal ingredients increased after participating in outreach activities, as well as their interest in chrysanthemum tea cultivation and entrepreneurship.

Keywords: medicinal plants, chrysanthemum tea.

INTRODUCTION

Traditional medicine including herbal medicine has been used for centuries to resolve various public health problems. Pathak and Das (2013) suggested that medicinal plants play an important role in the development of potent therapeutic agents. Herbal medicine involves the use of all or part of a plant to treat wounds or diseases (Winslow and Kroll, 1998), prevent, and promote health and healing (Gossell-Williams et al., 2006). Until now, the use of traditional medicine quantitatively is still high in Indonesia, even though modern health services have developed (Emilda et al., 2017).

Chrysanthemum is a mainstay commodity in the horticultural industry because it has a variety of flower shapes, types, and colors (Yusrizal and Musthafa, 2016). So far, the wider community is more familiar with the chrysanthemum as an ornamental plant that is widely used as decorations at various party events. Referring to the principles of traditional medicine in China, chrysanthemum plants can improve eyesight and liver function, reduce inflammation, prevent fatigue, and treat fever, headache, eye redness, and swelling caused by toxins (Liu et al., 2018). Compounds such as flavonoids, alkaloids, sesquiterpenes, and lactones contained in chrysanthemum have pharmacological activities such as antibacterial, antifungal, and antioxidant (Kim and Lee, 2005).

The use of chrysanthemum as a medicinal plant is not widely known, especially in rural communities. Therefore, it is necessary to

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conduct socialization to introduce the benefits of chrysanthemum for the prevention and treatment of various diseases that are often experienced. Medicinal plants are plants that have medicinal properties that are known from the results of research and use by the community (Jayanti, 2019).

The CSP activity was carried out in Sekejengkol of Cileunyi Wetan village with the participants are the women of Empowering Family Welfare (EFW) members (in Indonesia, it is popular by the name PKK) who have high potential in the agricultural and plantation sectors (based on village data information). Cileunyi Wetan village is located in the Cileunyi sub-district, Bandung Regency, West Java, which has an area of ± 767,057 ha, with an area of ± 293 ha of paddy fields, ± 418 ha of fields or gardens, and ± 10,835 ha of yards. The livelihoods of the Cileunyi Wetan village resident are mostly laborers, farmers, and entrepreneurs. Most of the EFW active members are housewives. The environmental condition of Cileunyi Wetan village has a large area that can be functionally optimized by motivating the community (through the women of EFW members) to cultivate chrysanthemums as ornamental plants and medicinal plants so that the community can take advantage of the chrysanthemum cultivation in addition to aesthetic purposes as well as for disease treatment and prevention and even further is expected to obtain economic value.

Chrysanthemum is known as an ornamental plant that has a fairly high economic value. Besides the flowers can be processed to become chrysanthemum tea which has a high selling value, so the cultivation of chrysanthemums by rural communities is a promising entrepreneurial opportunity. Therefore, CSP was carried out to educate the benefits of chrysanthemum as a medicinal plant and to make chrysanthemum tea for the women of EFW members in Cileunyi Wetan village.

METHODS

This CSP consists of several steps of activities as follows:

Preparation step: This step is the beginning of the implementation of CSP by conducting a site survey to determine environmental and community conditions as well as identifying and determining the subject of CSP.

Furthermore, identification and analysis of problems, then data processing, and planning of CSP activities were carried out. During the survey, the interviews were conducted with the Head of RW 14, Sekejengkol village which was chosen as the location for the CSP activities, as well as the EFW members who were met directly at the location.

Implementation step: The implementation of the activity was carried out by counseling the EFW members who were considered to have more roles in implementing and developing the counseling results as well as in disseminating the information to the wider environment. Counseling activities were carried out for 20 participants through presentations using a projector. To make it easier for participants to understand, the counseling materials were presented interestingly with lots of pictures and videos.

The counseling approach used a participatory method. Training and counseling activities were directed for increasing the community's knowledge about the efficacy of chrysanthemum as a traditional medicinal plant and how to process it into chrysanthemum tea. In this activity, participants were allowed to ask questions which were intended to increase their understanding of the socialization material

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provided.

In this step, demonstrations of making chrysanthemum tea were also carried out from dried chrysanthemum flowers. Participants were given knowledge about the stages of processing chrysanthemums until they were ready to be brewed using hot water like tea beverages in general. To add flavor and reduce the aroma of chrysanthemum tea which may not be a favorite for everyone, honey and lime juice can be added.

To determine the success of the counseling activities indicated by the increase in understanding and knowledge, as well as the rural community's interest in cultivating chrysanthemum, an assessment was carried out. The assessment technique was conducted by distributing questionnaires before and after the whole activities (pre-test and post-test), then analyzing the percentage increase in understanding that occurred. The questionnaires also identified the participants based on age, education level, and occupation which is used as supporting data in analyzing the understanding of CSP results.

The planning process and the strategies or methods used in this CSP can be seen in the following diagram:

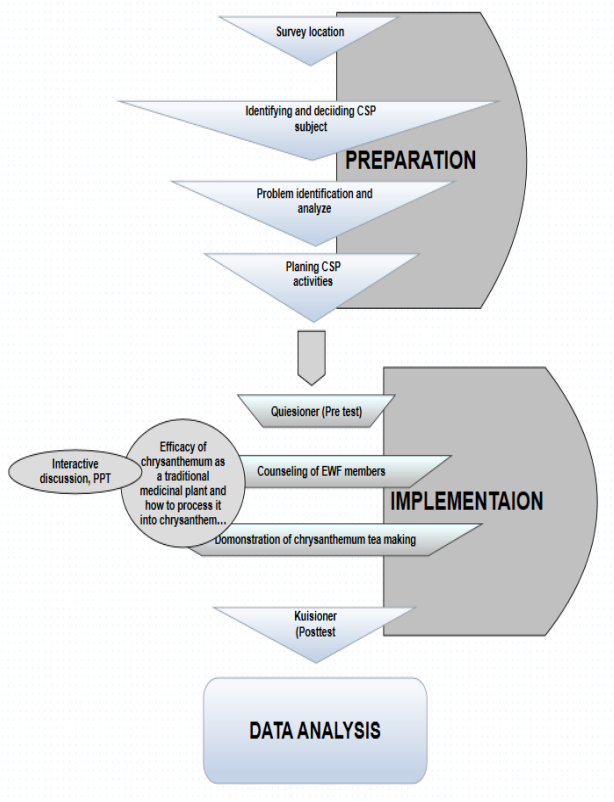

Figure 1. The flow of CSP activities for educating the role of chrysanthemum as a medicinal plant and making chrysanthemum tea for the EFW member at Cileunyi Wetan Village.

RESULTS AND DISCUSSION

Identification of counseling participants based on age, education level, and occupation

The CSP activity was attended by 20 participants who were EFW members of RW 14 Sekejengkol of Cileunyi Wetan Village, Cileunyi District, Bandung Regency.

The method packaged in the counseling activity integrates presentations using PPT (power points) combined with interactive discussion, making participants enthusiastic and actively discussing about the use and making of chrysanthemum tea.

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Figure 2. The women of EFW members in Sekejengkol Village were enthusiastic during CSP activities for cultivating and using chrysanthemums as a means of empowering society to improve economically.

In this activity, participants' age data were identified to determine the relationship with the level of understanding of the participants on the counseling material. Suwarno & Yuwono (2017) stated that a person's age affects their perception and mindset. As a person's age increases, his comprehension and mindset will also develop, so that the knowledge he gains is getting better. Based on the data, it is known that EFW members who participated in CSP activities were in the age range of 31-70 years (Figure 3).

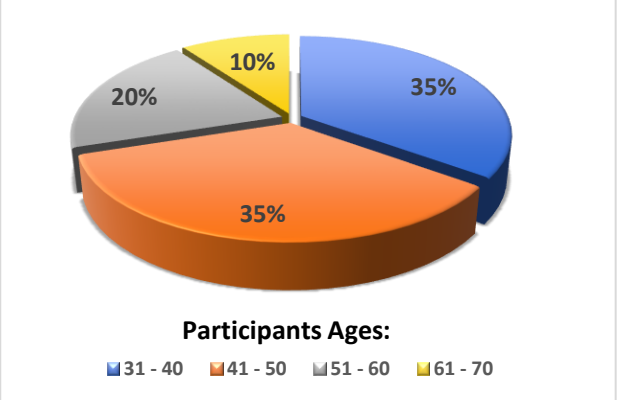

Figure 3. Age distribution of participants in CSP counseling activities

There were 7 participants in the age range of 31-40 and 41-50 years, respectively, while the age range of 51-60 years and 61-70 years were 4 and 2 people, respectively. Thus, more than 90% of participants are in the productive age of 15-64 years (Panma and Nyumirah, 2021). The productive age is the age that plays the most role and has dense activities and good cognitive abilities so that at this age it influences the level of knowledge (Pangesti, 2012; Suwarno & Yuwono, 2017). EFW members from Sekejengkol Village of Cileunyi Wetan Village of Cileunyi District are classified as productive laborers and are very important points in supporting the success of empowerment activities.

Empowerment can be aimed at 1) raising awareness, motivation, and independence in practicing a business as well as expanding employment opportunities; 2) increasing awareness about productive life by improving skills, and 3) improving and developing entrepreneurial spirit (Hunaepi et al, 2017). These goals can be achieved through various alternative activities, including socialization activities (in this case related to the efficacy and how to make chrysanthemum tea) which are expected to motivate EFW members in developing chrysanthemum cultivation for entrepreneurship both as ornamental flowers and as processed products such as in the form of chrysanthemum tea for a long term goal.

In addition to age data, identification of the education level and occupation of the participants was also carried out. The data obtained show that the EFW members of Sekejengkol of Cileunyi Wetan Village, Cileunyi District, Bandung Regency have varied educational backgrounds (Table 1), but all participants have the same job as housewives.

Table 1. The education level of the CSP

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activity participants

No	Education level	Participants number	Percentage
1.	Primary School	13	65%
2.	Junior High School	3	15%
3.	Senior High School	4	20%
	Total	20	100

Table 1 showed that all participants in CSP activities have the highest level of education at the senior high school. Of the 20 participants, mostly possess the classification of the lowest education level (Primary School) who reached the highest percentage of 65%, while the highest education level (Senior High School) only reached 20%. A low level of education affects a person's level of knowledge so in this case, it can be one of the causes of limited public knowledge about the use of chrysanthemum as a medicinal plant. As revealed by Wawan and Dewi (2010) that knowledge is influenced by the level of education. In addition, Fitriani et al. (2018) state that the level of education is one of the important factors in personal development efforts and intellectual improvement of one's knowledge insight. Likewise, the opinion of Widyastuti (2012), the level of education is related to the productivity that a person will get.

Someone who has a high level of education will have the opportunity to get a better job. The division of jobs or work specialization is an effort to increase productivity so that it can increase income or higher salaries, improvement, and prosperity to the family. Based on this statement, it can be concluded that EFW members who participated in this activity have relatively low productivity. It is indicated by all participants' jobs as housewives who do not have activities to generate economic income. However, the age of EFW members who are in the productive age category is the potential aspect that can increase their productivity through the empowerment of their activities. Through this socialization of the efficacy and method of making chrysanthemum tea, it is expected that participants will gain insight, knowledge, skills, and motivation to start entrepreneurship in producing healthy beverages in the form of chrysanthemum tea by starting with a growing interest in cultivating the plant.

Knowledge improvement of CSP participants

A questionnaire consisting of 20 indicators was given before and after the counseling activities (pre-test and post-test) to find out changes in the level of knowledge of participants on the socialization material provided. The results of the questionnaire showed that the knowledge and interest of EFW members in the utilization and processing of chrysanthemum tea and its cultivation increased with the details for each item of the questionnaire as shown in Table 2.

Throughout the 20 questions in the questionnaire before the counseling, most of the participants did not have knowledge about chrysanthemum plants, such as the types of chrysanthemums, their benefits in medicine, cultivation, and processing into health drink products (chrysanthemum tea). However, after the counseling was carried out, participants who participated in the activity enthusiastically were able to receive the material presented well. This can be seen from the results of the questionnaires given after the counseling which showed an increase in participants' knowledge about the benefits and cultivation of chrysanthemums and processing into chrysanthemum tea which reached 85-100%.

Table 2. Comparison of the knowledge conditions of participants before and after counseling

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No.	Indicators	conditions before counseling	conditions after counseling
1.	The use of chrysanthemum plants as medicinal plants	• 38% know • 62% unknow	• 100% know
2.	Diversity of chrysanthemum species	• 10% know • 90% unknow	• 100% know
3.	General introduction to chrysanthemum	• 10% know • 90% unknow	• 100% know
4.	Benefits of chrysanthemums as ornamental plants	• 15% know • 85% unknow	• 100% know
5.	Knowing that there are tea products made from chrysanthemum flowers	• 100% know	• 100% know
6.	Interest in chrysanthemum cultivation on home/village land	• 30% very uninterested • 70% uninterested	• 25% interested • 75% very interested
7.	The importance of planting chrysanthemums	• 20% very unimportant • 80% unimportant	• 45% important • 55% very important
8.	Herbal benefits of chrysanthemum	• 15% know • 85% unknow	• 100% know
9.	The experience of drinking chrysanthemum tea	• 5% ever • 95% never	• 100% ever
10.	Interest in making chrysanthemum tea for entrepreneurs	• 95% interested • 5% uninterested	• 100% interested
11.	How to process chrysanthemums into tea	• 5% know • 95% unknow	• 100% know
12.	Ingredients contained in chrysanthemum flowers	• 100% unknow	• 95% know • 5% unknow
13.	Benefits of chrysanthemum for skin and eye health	• 5% know • 95% unknow	• 100% know
14.	How to cultivate chrysanthemums	• 100% unknow	• 100% know
15.	Side effects of consuming chrysanthemum tea	• 100% unknow	• 85% know • 15% unknow
16.	Optimization of house/village yard for chrysanthemum planting land	• 70% uninterested • 30% interested	• 90% interested • 10% uninterested
17.	Knowing the high economic value of chrysanthemum tea	• 10% know • 90% unknow	• 100% know
18.	Experience seeing chrysanthemum plants directly	• 30% ever • 70% never	• 100% ever
19.	Another name for chrysanthemum	• 10% know • 90% unknow	• 85% know • 15% unknow
20.	Diseases that can be prevented by consuming chrysanthemum tea	• 100% unknow	• 95% know • 5% unknow

cultivating chrysanthemums increased up to 100% which was divided into two categories, 25% interested and 75% very interested, from previously 30% very disinterested and 70% not interested.

The use of the home yard is also a consideration for the community in optimizing its function for chrysanthemum cultivation, which has increased from 30% to 90%. Chrysanthemum processing products such as chrysanthemum tea have also received participants' attention with increasing interest in developing it as a promising entrepreneurial activity. Participants are attracted by the high economic value of chrysanthemum tea which can be sold in the market at a much higher price than ordinary tea. As stated by Hidayat & Supartoko (2017) that the cultivation of medicinal plants (herbs) is a promising business opportunity, due to the trend of increasing demand for herbal medicines.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The CSP activities carried out for the women of EFW members at Sekejengkol village in the form of counseling have fulfilled the objectives as well as the benefits of the activities to be achieved. The results of the questionnaire showed that after the counseling there is an increase in participants' knowledge about the use of chrysanthemum plants. Participants have a high interest in cultivating them and in the long term could use the results as entrepreneurial activities, especially in producing chrysanthemum tea which economically has high value. It is expected that after this CSP activity, the community has sufficient knowledge and skill in chrysanthemum cultivation and processing into chrysanthemum tea so that can make their home gardens or plantation land used optimally.

Recommendations

As a recommendation from this CSP activity, there is continuous development and expansion of the coverage area of the CSP participants regarding chrysanthemum cultivation and processing. This will encourage the realization of chrysanthemum cultivation in the long term by utilizing the great potential of land in rural areas as well as empowering villagers to improve their economic standards through their home yards. In the long term, sustainable development and utilization of chrysanthemum by the community, in addition to improving the local income through empowering their productivity, can also help the tourism sector by pursuing the development of chrysanthemum tourism villages.

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