

Research Article

Success Rate of Direct Hydroponic Cultivation Counseling and Training to Increase the Knowledge of Mothers in Sambirejo Village on Nutritional Fulfillment in Babies

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Abstract: *The success rate of direct extension and training in hydroponic cultivation can be measured by several indicators, including knowledge improvement, skill improvement, hydroponic cultivation implementation, and production success. Hands-on counseling and training on hydroponic cultivation is about the importance of providing information and training to farmers or individuals interested in starting hydroponic cultivation. With hydroponic cultivation and the harvest obtained can provide nutritional fulfillment to babies because they contain many nutrients that are very important given during the period of growth and early development of life. This study uses a purposive sampling technique, which is the deliberate selection of subjects based on suitability for the purpose of the research, namely mothers who are willing to participate in hydroponic cultivation counseling and training. Before the activity, respondents underwent a pre-test to measure initial knowledge. Counseling was delivered through a PowerPoint presentation on the types, needs, sources, and selection of nutrition in babies, followed by hydroponic cultivation training. After that, a post-test is carried out to assess the improvement in knowledge. The data is analyzed using the Dependent T Test test, or Wilcoxon test if the data distribution is abnormal. The average value of knowledge before direct counseling and training was 1.8, while knowledge after direct counseling and training was 2.7. The results showed an increase in the average knowledge of 0.9. In conclusion, there is a success rate of counseling and direct training in hydroponic cultivation to increase the knowledge of mothers in Sambirejo Village on the fulfillment of nutrition in babies.*

Keywords: Counseling, Training, Hydroponic Cultivation, Knowledge

INTRODUCTION

The success rate of counseling and direct training in hydroponic cultivation can be measured by several indicators, including increased knowledge, skill improvement, implementation of hydroponic cultivation, and production success (1). Counseling and hands-on training on hydroponic cultivation is about the importance of providing information and training to farmers or individuals interested in starting hydroponic cultivation (2).

Hydroponic cultivation is a modern agricultural method that does not use soil as a growing medium, but uses nutrient solutions that are supplied directly to the roots of plants (3). Counseling on hydroponic cultivation aims to provide basic knowledge on how to run a hydroponic system, choose the type of plants suitable for hydroponics, regulate water quality and nutrients, and how to control pests and diseases within the hydroponic environment (4). This extension is important because hydroponic cultivation has different requirements than conventional farming, and the right knowledge can help us in avoiding mistakes that can be detrimental to crops and crops (5)

In addition to counseling, hands-on training is also an important component in learning hydroponic cultivation (6). The training involves practical demonstrations on how to set up and operate a hydroponic system, plant selection and planting, as well as daily maintenance such as pH and nutrient regulation (7). In this training, participants will be taught how to manage a hydroponic

environment, address common issues that may arise, and conduct regular monitoring to ensure optimal growth (7).

Direct counseling and training on hydroponic cultivation can be done through various methods, such as seminars, workshops, or short courses (3,8,9). The main objective is to provide participants with practical knowledge and skills so that they can start and manage hydroponic cultivation successfully (9,10). Through this counseling and direct training, it is hoped that the community can better understand the concept and techniques of hydroponic cultivation, and be able to apply it effectively. Hydroponic cultivation has the potential to increase agricultural productivity, reduce water and land use, and produce healthier and better crops (11,12). Hydroponic cultivation and the harvest obtained can provide nutritional fulfillment to babies because they contain many nutrients that are very important to be given during the period of growth and early development of life (13–15). The fulfillment of good nutrition in babies is very important because during this period, babies experience rapid physical growth and the development of important organs of the body (16).

METHOD

This study uses purposive sampling or judgmental sampling techniques, which are sampling methods in which researchers deliberately select individuals or groups that have characteristics relevant to the research objectives (17). The subjects chosen are mothers who are willing to participate in

hydroponic cultivation counseling and training. Before counseling began, respondents took a pre-test to measure initial knowledge. Counseling was provided through PowerPoint-based presentations containing material on the type, needs, sources, and selection of nutrients in babies, then continued with hydroponic cultivation training. After the activity was completed, respondents took a post-test to assess the improvement of knowledge. The data is analyzed using the T Test Dependent test, and if the data distribution is abnormal, the analysis is continued with the Wilcoxon test.

RESULT

Table 1. Distribution of Frequency of Mother's Knowledge about Nutritional Fulfillment in Babies in Sambirejo Village Before Direct Counseling and Training on Hydroponic Cultivation

No	Pengetahuan	(F)	(%)
1	Baik	5	25.0
2	Cukup	6	30.0
3	Kurang	9	45.0
Jumlah		20	100

Table 1 above can be seen the knowledge of mothers on the fulfillment of nutrition in babies before counseling and direct training in hydroponic cultivation. The frequency of low knowledge was 9 respondents (45%), the frequency of sufficient knowledge was 6 respondents (30%), and the frequency of good knowledge was 5 (25%) out of a sample of 20 people.

Table 2. Distribution of Frequency of Mother's Knowledge about Nutritional Fulfillment in Babies in Sambirejo Village After Direct Counseling and Training on Hydroponic Cultivation

No	Pengetahuan	(F)	(%)
1	Baik	16	80.0

2	Cukup	2	10.0
3	Kurang	2	10.0
Jumlah		20	100

Based on Table 2 above, it can be seen that the mother's knowledge about nutritional fulfillment in babies in Sambirejo Village after counseling and direct training on hydroponic cultivation has increased significantly. Most of the respondents, namely 16 people (80%), had a good level of knowledge, while only 2 people (10%) had enough knowledge and 2 people (10%) still lacked.

Table 3. T Test Dependent Results The success rate of counseling and direct training of hydroponic cultivation to increase the knowledge of mothers in Sambirejo Village on nutritional fulfillment in babies

Kelompok	Mean (\pm SD)	P Value
Sebelum	1,8 (\pm 0,8)	<0,05
Sesudah	2,7 (\pm 0,6)	

Table 3 The results of statistical test analysis using T Test Dependent show that the significance value is <0.05 so that it can be shown that there is a success rate of counseling and direct training in hydroponic cultivation to increase the knowledge of mothers in Sambirejo Village on the fulfillment of nutrition in babies.

DISCUSSION

Table 1 shows the frequency of knowledge is lacking as many as 9 respondents (45%), the researcher assumes that the mother does not know how important nutritious food is for the growth of the child and the mother still does not know the food that contains good nutrition consumed by the child, and education that is still in the basic or low category, the process of understanding and

studying new information will be difficult. This certainly affects the person's knowledge. The frequency of knowledge is sufficient as many as 6 respondents (30%), the researcher assumes that this is experienced by mothers because mothers already know how important nutritional fulfillment is in babies, but mothers do not understand good food that is suitable for babies. And the frequency of good knowledge is 5 (25%), researchers assume that mothers are already aware and understand that nutritional fulfillment is very important to increase the growth and development of babies. Table 2 shows an increase in knowledge of mothers after counseling and direct training in hydroponic cultivation. The results of the frequency of knowledge were limited by 2 respondents (10%), the frequency of sufficient knowledge by 2 respondents (10%), and the frequency of good knowledge by 16 respondents (80%). This happens because there are many things and understandings that mothers get during counseling so that mothers can understand what nutritional sources can be given to babies from hydroponic cultivation that can increase growth and development in babies. Table 3 explains that the value of women's knowledge before the direct counseling and training is 1.8. Meanwhile, the knowledge of mothers after the counseling and direct training increased by 2.7. This shows an increase of 0.9 in the mother's level of knowledge. The results of the statistical test analysis using *the T Test Dependent* also showed that the value was <0.05 which means that there is a difference between at least two groups. This increase

in knowledge can be interpreted as a success. This direct counseling and training on hydroponic cultivation provides an understanding of how hydroponic cultivation such as how to determine the medium for planting, how to provide nutrient measurements to hydroponics, pH balance on what must be considered in this hydroponic cultivation (10,18,19). Not only hydroponic issues, in this counseling, mothers were given knowledge about nutritional sources that contain animal protein or vegetable protein, as well as the nutritional content contained in vegetables, fruits, and grains that can meet the nutrition of babies (20).

CONCLUSION

From the results and discussion of the research, it can be concluded that:

1. Most of the mothers in Sambirejo Village have a lack of knowledge about the fulfillment of nutrients in babies
2. Direct counseling and training in hydroponic cultivation has an effect on increasing the knowledge of mothers in Sambirejo Village to fulfill nutrition in babies.

ACKNOWLEDGMENTS

Thank you to the entire academic community of FK UMSU, supervisors and examiners, the Head of Sambirejo Village, the Sambirejo Village Mother, and all parties who have fully contributed to this research.

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