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EMPOWERING POSYANDU LANSIA GROUP THROUGH LOCAL FOOD PROCESSING TRAINING FOR PREVENTION OF DIABETES

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Abstract

The proportion of cases of Diabetes Mellitus (DM) in the region of West Aceh is still quite high especially in the two Health Center/Puskesmas in the City of Meulaboh namely Suakribe and Meureubo in 2021 on average 83% to 84% in 2022. The risk factors for DM in Aceh, based on the initial survey, are mostly due to dietary factors, such as inadequate local food processing that puts DM at risk. The purpose of the dedication is to enhance the skills of posyandu lansia groups in processing local food for prevention of diabetes. Implementation method with training processing of local food products, such as mie and cookies based on sunti aceh, taro, corn, carrots, and potatoes to 13 posyandu lansia group of 7 cadre/kader and 6 old man/lansia. The result was an increase in knowledge and skills of cadre and old man with P Value $\leq \alpha = 0.05$ in terms of local food processing for prevention of diabetes (processing mie and cookies). The conclusion of the training is able to enhance the knowledge and skills of respondents in terms of local food processing for prevention of diabetes. Recommendations Local food training is very well done to communities specialized in member of posyandu (cadre/kader and old man/lansia) in an effort to increase independence in processing local foods that can prevent diabetes.

Keywords: Diabetes, Local Food, Mie, Cookies

INTRODUCTION

According to data from the International Diabetes Federation (IDF), by 2020, there will be around 463 million people living with diabetes worldwide. This figure is expected to continue to rise to 700 million by 2045. (IDF, 2020.dan WHO, 2020).

According to the Ministry of Health, the prevalence of diabetes in Indonesia in 2018 reached 10.6 million people or about 6.9% of the total population. This figure is quite worrying given that diabetes can cause serious complications such as heart disease, kidney failure, visual impairment, and amputation. (KemenkesRI, 2018).

The prevalence in Aceh is still above the national prevalence figure of over 30.8% By 2022. The proportion of cases of Diabetes Mellitus (DM) in the West Aceh region is still quite high especially in the two Puskesmas in the City of Meulaboh namely Puskésmas Suakribe in 2021 86% to 88% in 2022, almost the same proportion is also occurring in

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Puskessmas Meureubo that is in 2021 80% to 82% in 2022 (Dinkes Aceh Barat, 2022. Puskesmas Johan Pahlawan, 2022. Dan Puskesmas Suakribe, 2022).

The root cause of DM cases based on the above factors is also supported by the results of a research interview with the head of the kader posyandu elderly whose researchers interview mentioned that almost 70% more end-of-age postyandu suffer from DM due to the diet that he ran before DM is a risky diet. (Putri, 2017. Putri, 2018. Putri, 2020).

Based on the above issues, it is very important to carry out adequate support to the case groups and risk groups that visit the posyandu seniors in terms of increased knowledge and improvement of dietary patterns through strengthening the kader of posyanduan seniors and visitors to posyandi seniors. This addition is important so that the case group and risk group can control their blood sugar levels, so that case groups can control the blood sugar level in the secondary preventive effort and risk groups can prevent themselves from developing DM so that they are included in the first preventive vapour. (Putri, 2017. Putri, 2018. Putri, 2020. Dan Gues, 2018).

The preventive measures planned to be implemented are by implementing training in the manufacture of anti-diabetic food products from local food materials, local foods that are the main dessert ingredients, i.e. aceh ointment, ginger, carrots, potatoes, corn. All these ingredients are then flourished and combined and then processed into foods such as: cookies, brownies, wet and dried meat. Local foods are based on the results of investigative research and supported by other researchers have tremendous benefits for the control of blood sugar because many have macro and micro substances that control blood sugar levels. The macro and micro substances contained in the basic ingredients of this product are quite varied from one to the other, namely: 1. Corn, potatoes, chili, has macro substances: carbohydrates, proteins, fats, fiber, omega 3, and micro: phosphorus, magnesium, zinc, copper, pentanoic acid, folate, vitamin B3, vitamin B6, potassium, antioxidants: ferulate acid, anthocyanin, zeaxanthin, lutein, phytic acid, etc. (Soelistijo, 2015., KemenkesRI, 2014., KemenkesRI, 2016., KemenkesRI, 2017., Tempo SB, 2015., Nuryani, 2018, Prasetyo, 2019., Fajar, 2020., Suryani, 2020., Rahayu, 2017., Agustina 2018., Sari, 2020., Wijaya, 2019., Rahayu 2017., Utami, 2018., Agustina, 2019., Nuryani, 2017., Wijaya, 2020., dan Putri, 2022.).

The macro and micro substances in this product such as complex carbohydrates, fiber, vitamins, antioxidants like flavanoids from the results of research researchers and other researchers pointed out that not only is able to control blood sugar levels, but also able to reduce oxidative stress, able to bind fat and bad cholesterol, converts sugar into energy, boosts the body's immunity, etc. (Soelistijo, 2015., KemenkesRI, 2014., KemenkesRI, 2016., KemenkesRI, 2017., Tempo SB, 2015., Nuryani, 2018, Prasetyo, 2019., Fajar, 2020., Suryani, 2020., Rahayu, 2017., Agustina 2018., Sari, 2020., Wijaya, 2019., Rahayu 2017., Utami, 2018., Agustina, 2019., Nuryani, 2017., Wijaya, 2020., dan Putri, 2022.).

The food processing training activities will be accompanied by the establishment of anti-diabetes groups, training of senior posyandu cadres in strengthening measurements, and increased knowledge and prevention of DM risk. These training activities are very beneficial because people have been using local foods only as spices and unhealthy foods, and they have not yet understood that local food can be processed into anti-diabetic food products.

So based on the above issues we are interested in raising the Title: ***Empowerment of Posyandu Lansia Group Through Local Food Processing Training for Prevention of Diabetes***.

IMPLEMENTATION METHOD

Implementation of dedication to research-based community on empowerment of Posyandu Lansia Group through training on processing of local food products anti-diabetes, as an attempt to prevent cases of diabetes in senior posyandu cadres in the village of West Belakang Aceh village of 7 (seven) people and visitors of 6 senior postyandu. The implementation period of the activity over 6 months, with the implementation flow diagram shown in Figure 1. as follows:

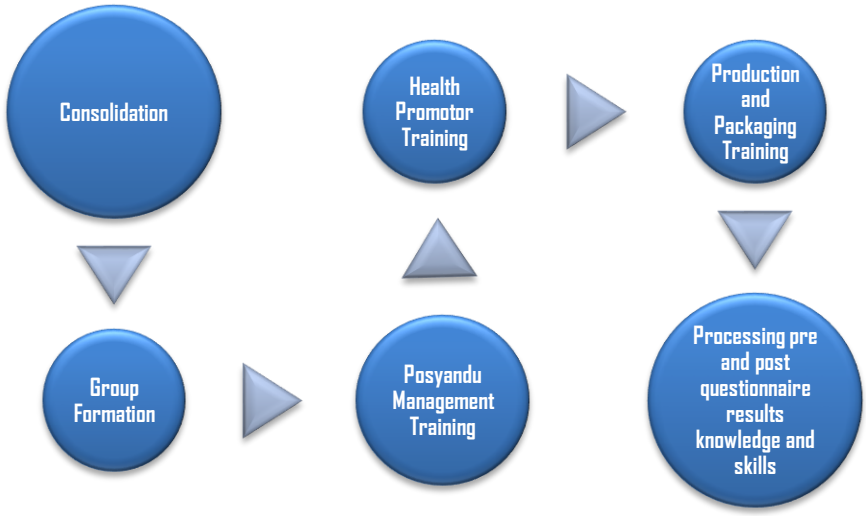

Figure 1. Activity Execution Plan Flow Diagram

a. Consolidation with Gampung Aparatur and Kader Posyandu Lansia

At this stage, the dedication team will consolidate to equalize the perception of the importance of activities, group formation, and benefits to the community that will benefit sustainably to the people of the villages and can prevent the community from the disease of DM.

b. Formation of an anti-diabetes group

In dedication to this research-based association, the successor forms an anti-diabetic group of 13 cadres consisting of cadres and senior posyandu participants, the group will be given training related to the formation of groups, measurement, recording, clearance, manufacture, and delivery of local food products against diabetes. This activity will be launched on the second edition of the research.

c. **Management Training for the Implementation of Registration, Measurement and Registration of Anti-Diabetes Groups as routine surveillance of post-diabetes activities**

At this stage, the experts will provide an understanding and training related to the management of registration, measurement and recording on the cadres as the surveillance by the experts that will be carried out in the second and third months. At the time, the activities will also be conducted pre and post test in the form of quizzes and practices.

d. Health promotor training in the anti-diabetes group

At this stage, experts provide an understanding and training related to the ability to perform DM diagnosis to the anti-diabetes group so that they have the skills to do the diagnosis. At the time the activities will also be conducted pre and post test in the form of quizzes and live practice. Activities will take place in the second and third months.

e. Local Anti-Diabetes Food Making/Production Training

At this stage, the expert will teach the cadres about the production of local anti-diabetic food products from ingredients such as aceh, chili, potatoes, carrots and maize. At the first stage, experts will teach them how to make flour from these ingredients, then at the second stage, they will teach you how to bake local food products against diabetes from basic ingredients. (cookies, brownis, mie basah dan kering). At the time the activities will also be conducted pre and post test in the form of quizzes and live practice. The event will take place in the fourth month.

f. Local Anti-Diabetes Food Packaging Training

At this stage, experts will teach how to pack a safe and healthy product to an anti-diabetic group on elderly posyandu. The event will take place in the fourth month.

g. Assessment of the Final Outcome of Dedication

The final evaluation is an assessment of the anti-diabetic group skills of each given training item. The event will take place in the fifth month.

RESULTS AND DISCUSSION

The results achieved in this dedication to the research-based community (PKMBR) with the title Empowerment of the Posyandu Lansia Group Through Training Processing of Local Food Products Anti-Diabetes can be summarized based on the following flow diagram: Activity Execution Classification based on the flow diagram as follows:

a. Consolidation with Gampung Aparatur and Kader Posyandu Lansia

Consolidation has been done to Mr. Head of the village, apparatur gampoeng, and kader posyandu senior before the training activities are carried out. At the time of consolidation determined the participants posyandi senior who can participate in this program, place, and time of implementation of the training.

b. Formation of an Prevention Diabetes Group

The prediabetes and DM groups have been formed, consisting of 13 people from 7 cadres and 6 elderly, who have been trained in management of post-diabetes, decontamination, and processing of local anti-diabetic food.

c. Management Posyandu Lansia, Health Promotor, and Making/Production Local Food Training for Prevention of Diabetes

The implementation of this activity was carried out in Posyandu with the presence of 7 cadres, 6 seniors, 3 dedication teams and 6 students. This is the beginning of the opening by MC students, then the delivery of materials and training management posyadu and approval by the dedication team of Mother Itza Mulyani, SKM, MPH, with before giving questionnaire questions to caders and seniors so that they can know the value of their knowledge related to management of posyandu and anti-diabetes approval. The next activity is the training of local food processing anti-diabetic delivered by Mother Enda Silvia Putri, SKM., M.Kes and Mother Marniati, Skm, M. Kes.

The menu practiced in this case is peppermint and anti-diabetic cookies made from the base ingredients of a mixture of aceh, carrots, potatoes, maize, and chili, then peppers made in the form of hot peppers where the cake is a chicken soup pie.

At the time of this food processing training the participants were very enthusiastically seen in the seriousness of paying attention and assisting the processing process, after the menu was finished processed the team gave the processed results to try and the receptivity was pretty well seen of them like the color, texture, and flavor, so they said please give us the recipe so that we can practice at home. The previous product has been tested so it's safe. After the training we asked back about their understanding and ability in the processing of the menu by asking what the stages of the manufacture that have been practiced like. Here's the activity documentation:

a. Opening By MC

b. Management Training to Posyandu Lansia

c. Health Promotor Training to prevention diabetes group

d. Local Food Making/Production Training for prevention of diabetes

e. Local Food Making/Production Training for prevention of diabetes

f. Local Food Making/Production Training for prevention of diabetes

g. Local Food Making/Production Training for prevention of diabetes

h. Photo Kader and Lansia

i. Vegetables

j. Mie Ja'Saweh Rakan

k. Mie Ja'Saweh Rakan

l. Chicken Soup

Figure 3. Documentation of Management Posyandu Lansia, Health Promotor and Making /Production Local Food Training for Prevention of Diabetes

d. Local Food Packaging Training for Prevention of Diabetes

At this stage, experts will teach how to pack a safe and healthy product to an anti-diabetic group on elderly posyandu. The event will take place in the fourth month.

The activity was carried out in the old age posyandu which was attended by 13 participants consisting of 7 caders and 6 old age, on this activity was conducted training packaging of cookies and anti-diabetic meat products. The cookie products are packed with environmentally friendly packages made of paper, which are standing pouch craft windows in the color of brown, and the mie products packaged with a thinwall container container of 650 ml containing the original foodgrade PP, as well as both packages are covered with an attractive product name sticker.

Both forms of the packaging are shown at the product packaging training to the participants. Participants can understand well how to pack good and environmentally friendly products. Our products are made without preservatives, so cookies can last for 2 months if they're not opened, while mie can last 24 hours if it's never opened. Here's the activity documentation:

a. Packaging Product Cookies b. Cookies c. Packaging Product Mie d. Mie

e. Packaging Training f. Packaging Training g. Packaging Training h. Packaging Training

Figure 4. Documentation of Packaging Local Food Training for Prevention of Diabetes

e. Assessment of the Final Outcome of Dedication

The final evaluation is an assessment of the anti-diabetic group skills of each given training item. The activities will be conducted in the fifth month.

On the final evaluation of the results that we evaluate is the level of knowledge and skills of the participants, then the results obtained for each item are as follows:

• Level of Knowledge

Table 1. Level of knowledge of Diabetes Participants

Variable	Mean	SD	N	P value
Level of Prestest Knowledge	70,00	9,129	13	0,000
Level of Posttest Knowledge	86,15	7,679	13	

Source: Primary data 2023

Based on Table 1. it is seen that there is a difference in the average knowledge value of participants before and after training, the average value of knowledge after higher representing a better level of knowledge (86.15) and P Value < α=0,05

• Level of Skill

Table 2. Level of Skill of Diabetes Participants

Variable	Mean	SD	N	P value
Level of Prestest Skill	73,46	9,216	13	0,000
Level of Posttest Skill	85,00	7,360	13	

Source: Primary data 2023

Based on Table 2. it is seen that there is a difference in the average skill score of participants before and after training, the average skills score after higher which represents a better skill level (85.00) and P Value < α=0,05

f. Final reporting, and publication

In this phase, the successor will compile the final report, journal, news in the media, and module based on the results of dedication that have been carried out for 5 (five) months. The final report as a form of responsibility of successor to the donor party is LPPM-PM UTU. The dedication journal, media news, and the module as the form of publication that will be presented in order to increase the quantity and quality of the publication of FKM-UTU.

The final report has been completed and a dedication journal has been compiled which has been submitted to the professors' dedication journals, and has published news in RRI news and UTU news, as well as has made models and posters.

CONCLUSION

As for the conclusions obtained from the results of the dedication:

1. Increased knowledge of dedication participants consisting of cadres and seniors of 13 people in the case of diabetes
2. Increase in skill of participant dedication comprising of caders and seniores of 13 in terms of processing of local food anti diabetes
3. Increasing skill of participants dedication composed of Cadres and Seniors of 13. In terms of packaging of local anti-diabetes food products.

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Conflict of Interest

The authors declare that there are no conflict of interest.

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