

Making Supplementary Foods Based on The Local Food of The Alor Community for Stunting Prevention

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ABSTRACT

The case of stunting under five in North Mataru in 2019 was still very high at 51.8%. This percentage exceeds the national stunting percentage in 2019 which shows a declining trend of 27.67% (Rikesda 2018). Based on the results of the survey in the field, it is known that the local community has a variety of field products as local food. Local food produced is very diverse including rice, corn, tubers, and vegetables. This local food has sufficient nutritional value to meet the nutritional needs of toddlers in supporting toddler growth. The purpose of implementing this PKM is to provide understanding to the cadres of integrated service posts in North Mataru Village through the socialization of local food ingredients (brown rice and moringa) and the benefits of local food to prevent stunting and provide training on making local MP-ASI from brown rice ingredients and moringa. The results of this service activity showed that the participants became more aware of the benefits of local food to be processed into complementary foods (MP-ASI) in supporting toddler nutrition. In addition, the direct training made the participants more enthusiastic and gave a good assessment that they had gained new knowledge and skills. Participants who attended were also committed to continuing the results of the training to be passed on to other breastfeeding mothers.

Keywords: Brown rice, Moringa, stunting, local MP-ASI, North Mataru

INTRODUCTION

Stunting is a chronic nutritional problem that occurs in children aged 0 to 59 months. As a result, children who suffer from stunting will have a shorter physical condition than children their age. They also have low body weight and normal body proportions but appear smaller (NTT Provincial Health Office, 2019). In 2017, specifically for NTT Province, the highest number of malnutrition cases was in Kupang City with 409 cases and followed by Alor Regency with 347 cases (NTT Provincial Health Office, 2019). Based on the 2018 Basic Health Research, NTT is the province with the highest stunting position in Indonesia with 269,658 stunting cases. Alor Regency ranks 8th for stunting problems in NTT. The stunting problem is still very high in Alor Regency with 2,843 stunting cases as of December 2019 (TNP2K, 2017). This stunting problem was identified from 454 integrated service post spread across 175 villages and sub-districts. The number of stunting cases in Alor released in December 2020 increased by 22.5% with 3,426 under-fives experiencing stunting (mediakupang.tangan-rakyat.com, 2020). The stunting problem that occurs is influenced by various factors including nutrition, parenting, environmental hygiene and also the low economic status of the family (Doy et al., 2021; Erik et al., 2020). This condition is very alarming coupled with the ongoing COVID-19 pandemic. This pandemic, has greatly impacted human life in various aspects, both social and economic, so it is feared that the number of stunting cases in 2021 will show an increasing trend.

To suppress the stunting problem in Alor Regency, the use of local food to meet the nutrition of children under five is very important. Sources of nutrition for toddlers are obtained from breast milk (ASI) and complementary foods (MP-ASI). There are various local foods in Alor Regency that have sufficient nutritional content to make local MP-ASI in to meet the nutritional needs of toddlers. Local foods that can be used for the manufacture of local MP-ASI are brown rice and Moringa (*Moringa oleifera*) leaves. Moringa leaf is a local plant that has the potential to be developed to deal with stunting (Merina, 2021; Ulfah & Sididi, 2021). This leaf is called the

mother's best friend because it contains elements of micronutrients that are needed by pregnant women, such as beta (B3), calcium, iron, phosphorus, magnesium, zinc, and vitamin C (Nugrawati et al., 2021). In addition, Moringa leaves contain antioxidants such as flavonoid, terpenoid and phenolic compounds with very strong antioxidant activity so that they can increase immunity for toddlers, especially during this pandemic (Kurang, 2020). The energy content of brown rice flour is 363.3 Kcal with nutrients including 9.83% protein, 7.8% fat, 20.4% fiber and 65% carbohydrates. Anthocyanins in brown rice not only play a role in giving color but also act as antioxidants that are good for health (Zakaria et al., 2019).

Based on data reported by the Alor District Health Office, generally, children who experience stunting are those who live in remote areas. One of these areas is North Mataru Village with 44 stunting cases in 2019 (Dinas Kesehatan, 2019). North Mataru Village is a village located in a mountainous area that is still far from being touched by technology and information. People in the interior of Mataru generally use local food, Moringa leaves and brown rice, on a limited basis. Moringa leaves are usually used as a vegetable ingredient in a typical Alor food, namely katema corn. This food is hard enough so that it cannot be consumed by toddlers. Brown rice is only used like porridge for breakfast and the rest is used for traditional party affairs. Moringa and brown rice plants are widely available in Alor so that their use for the manufacture of local MP-ASI has a very large opportunity. In addition, this activity is very helpful for housewives in utilizing the food ingredients they have. Economically very profitable because it reduces the cost of family expenses. In addition, the nutritional value of local MP-ASI is guaranteed because it is made by hand with ingredients that are guaranteed to be clean and of good quality. With this training, housewives will be equipped with sufficient skills so that they can independently prepare healthy and nutritious MP-ASI for toddlers. Thus, the nutritional needs of children under five will be met and the number of stunting cases can be reduced.

METHOD

The methods that will be used in the implementation of this community service program are as follows:

Preparation phase

The PKM team coordinates with target partners in scheduling training activities, training venues, as well as infrastructure that will be used in the training process. The training place is arranged to follow the health protocol by setting a distance and preparing a handwashing area and requiring every participant to wear a mask. Each participant who attends first has his body temperature checked. The implementation of the activity requires several tools and materials as follows: a) Tools and materials needed in carrying out the health protocol include a bucket hand soap, tissue, thermogram. b) Tools needed in the manufacture of local MP-ASI such as scales, basins, and blenders, stoves and pans, sieves and gutters. c) Materials needed in the manufacture of local MP-ASI such as brown rice flour, Moringa leaf flour, SGM milk for 6-12 months

Socialization

The socialization of the activity program will be delivered by the head of the student PKM-PM team assisted by a companion lecturer. Participants are given a hardcopy of the material to be disseminated. The material presented contained several points including stunting in children and its symptoms, Factors causing stunting, nutritional content of moringa leaves and brown rice, selection of quality local food ingredients (moringa leaves and brown rice), making local MP-ASI

MP-ASI Making Training

The training activities were carried out in the North Mataru Village Hall. Training on making local MP-ASI was carried out by the chairman and members of the PKM-PM team. The training participants were attended by integrated service post cadres who came from Kilakawada village, Bunggeta village and Tukmasang village, Talawa village and Puncak village. The making of MP-ASI is made in two portions, namely:

Small Portion (One Meal) Dosage:

2 Spoons Moringa Flour

3 tablespoons of brown rice

3 tablespoons of SGM milk (measuring spoon of baby's milk)

Medium Portion (Twice Meals) Dosage:

3 tablespoons of Moringa flour

6 tablespoons of brown rice

9 tablespoons of SGM milk (measuring spoons of baby's milk)

Activity evaluation

To find out the results of the training, a questionnaire will be circulated continuously during the mentoring process. The evaluation process is carried out by distributing questionnaires to be filled out by the training participants.

RESULTS

The implementation of PKM-PM for integrated service post cadres will be held on Saturday, August 14, 2021, at the North Mataru Village Office Hall. The activity began with an official opening by the local village government. The remarks from the village head contained expectations about the ongoing activities so that in the future they could be followed up so that in the future the number of stunting cases in the village could be reduced. The activity which was officially opened was followed by socialization to the participants. Participants who have participated in the socialization are directed to participate in direct training on the manufacture of MP-ASI based on local food, brown rice and moringa. In the final session, participants were given an explanation for filling out a questionnaire which contained several sub-sections, namely a) the education level of integrated service post cadres; b) test of initial and final knowledge about stunting in infants and the manufacture of local food-based MP-ASI; c) participants perform a hedonic test (liking) on MP-ASI products that have been made by assessing the aroma, color, taste and texture of local food MP-ASI. The results of the questionnaire analysis are presented in the appendix.

DISCUSSION

The delivery of socialization materials, it begins with the distribution of materials in hardcopy form to the participants. The material presented contained what stunting was, the characteristics of children in the stunting category, the main requirements for MP-ASI in infants, the nutritional content in Moringa leaves and brown rice, and the benefits of local ingredients MP-ASI products to prevent stunting in infants. Participants were enthusiastic in listening to the material which was marked by a discussion at the end of the socialization session to answer questions from several participants who asked questions. The activity was continued by preparing tools and materials for the practice of making MP-ASI based on local food. After the data and materials were prepared, participants were asked to fill out a questionnaire on the education level of the cadres as well as an initial test for the cadres about their knowledge of stunting and local MP-ASI to prevent stunting. Based on data on the education level of integrated service post cadres in Figure 1 (attachment), it is known that the average integrated service post cadre education is cadres with elementary, middle and high school graduates. The highest education level for integrated service post cadres is SMA but the number is comparable to integrated service post cadres with elementary and junior high school graduates. Integrated service post cadre education affects the knowledge of cadres about the use of local food in preventing stunting.

To find out the understanding of the cadres about this, a knowledge test of the integrated service post cadres was carried out through a questionnaire in the section distributed and the results are presented in Figure 2 (attachment). From the graph, it is known that all integrated service post cadres have heard of stunting and have also received counseling about the benefits of complementary feeding for infants. Based on the graph, it can be seen that most of the integrated service post cadres know the causes of stunting in infants and have also heard about

the manufacture of MP-ASI from local food. However, this knowledge is only limited to listening but to be taught about making local MP-ASI made from local food has never been done. In Figure 2 (attachment) it can be seen that almost all integrated service post cadres have never made MP-ASI from brown rice and Moringa and some of them think that making MP-ASI is very difficult but some others believe that making MP-ASI is easy to practice.

After filling out the initial questionnaire, it was continued with training on making MP-ASI for integrated service post cadres led directly by the team leader along with other members. Participants were taught how to prepare Moringa and brown rice before blending them into flour. Moringa is dried for 3 days and brown rice is dried in the sun before the two ingredients are blended to make flour. The PKM team has prepared the basic ingredients of moringa and brown rice so that integrated service post cadres can make flour from red and moringa seeds. Furthermore, integrated service post cadres were trained to make the dose of MP-ASI for one meal and the dose of MP-ASI for two meals. During the training process, the enthusiasm of the participants was seen as evidenced by the light discussions during the training. The local MP-ASI products produced were then tested on the participants to assess color, aroma, taste, and texture and gave their assessments on the questionnaire that had been created and distributed by the PKM team. The results of the hedonic test analysis are presented in Figure 3 (attachment). The results of the questionnaire analysis showed that the integrated service post cadres liked the MP-ASI which had been made from brown rice flour and moringa flour both in terms of aroma, color, taste and texture. At the time of the activity, a mother who was breastfeeding was also attended so that the MP-ASI product produced was tested on the baby. The MP-ASI food given is spent by the baby from the mother. In addition, several elementary-aged children who came with their mothers also tried the local MP-ASI and all the children liked the MP-ASI that was made. They finished the existing MP-ASI food and even asked for the portion to be increased.

At the end of the PKM activity, integrated service post cadres and other participants were asked to fill out a questionnaire regarding their response to the training activities carried out. Analysis of participant responses regarding the training that has been carried out is presented in Figure 4 (attachment). From the available data, it is known that 100% of the participants stated that after participating in this training they would try to make local MP-ASI at home. In general, all participants gave high appreciation for the related activities and none responded less to the implementation of the PKM activities they participated in.

CONCLUSIONS And RECOMMENDATIONS

Through this service activity the understanding and knowledge of integrated service post cadres about the nutritional content and utilization of moringa and rice local food increases. The cadres and training participants know how to make MP-ASI based on local food to be able to fulfill infant nutrition so that the number of stunting cases can be reduced. The trainees have also committed to implementing the results of the training in their own homes. Integrated service post cadres are committed to sharing the results of the training with breastfeeding mothers in every integrated service post where they work. Integrated service post cadres hope for similar training to improve their knowledge and skills in managing local food into foods that are more varied and have sufficient nutritional value.

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APPENDIX

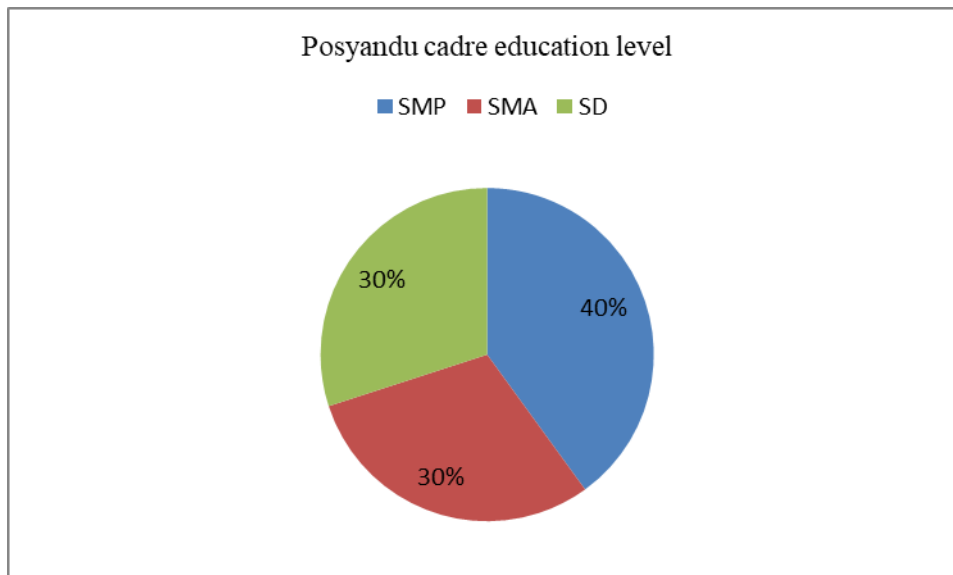


Figure 1. Education level of posyandu cadres

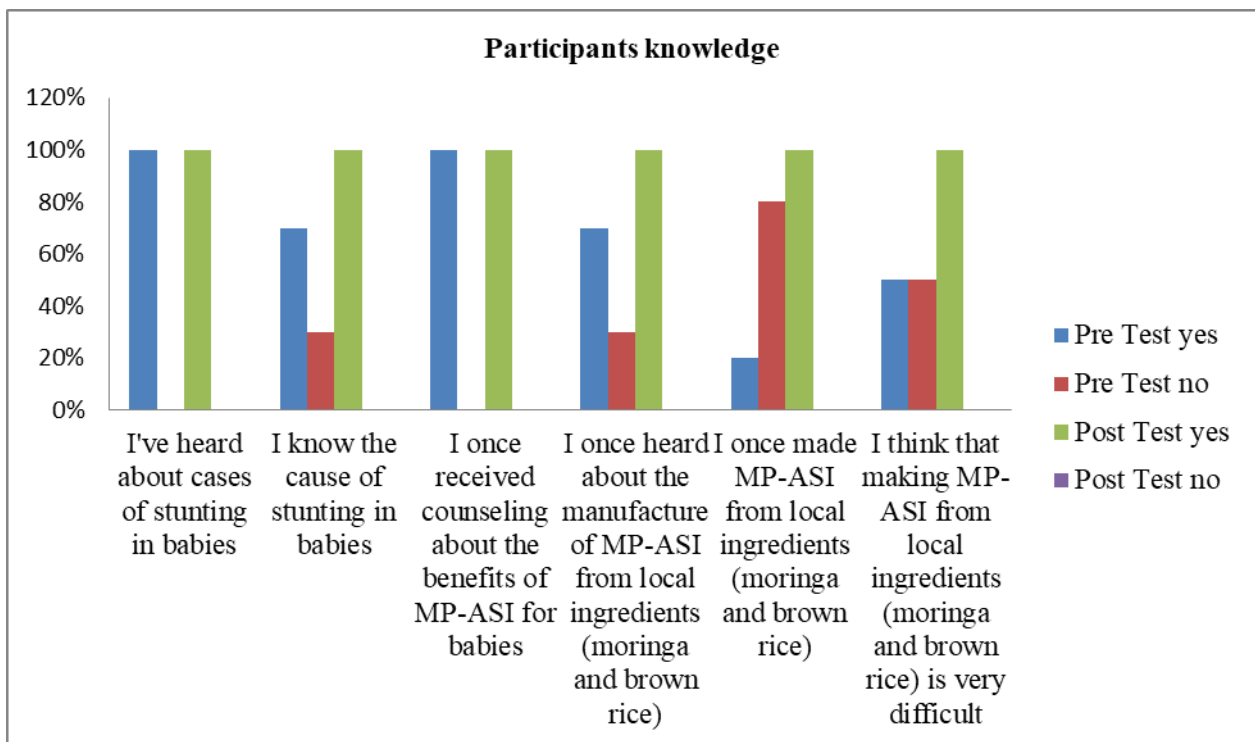


Figure 2. Participants' knowledge about stunting

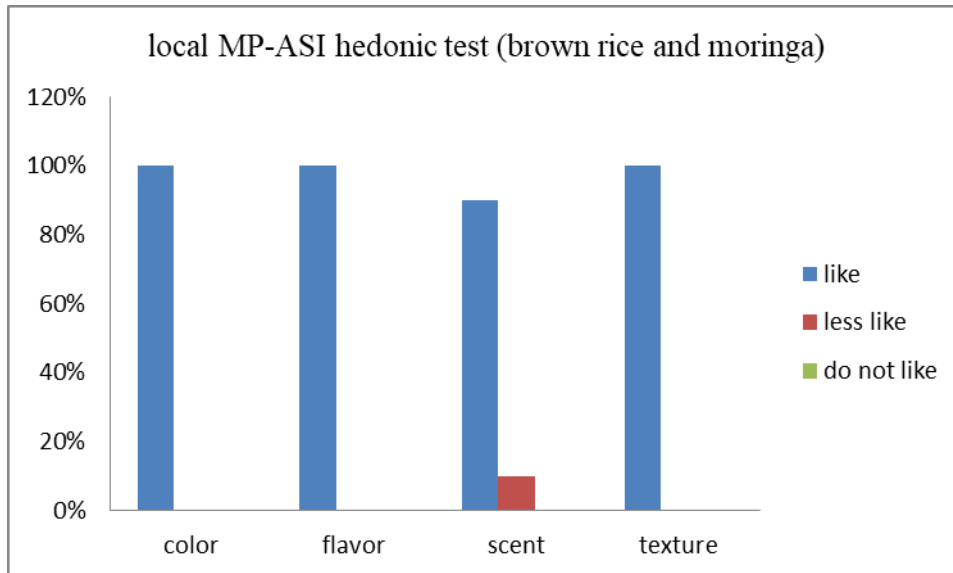


Figure 3. The result curve of the local MP-ASI product preference test

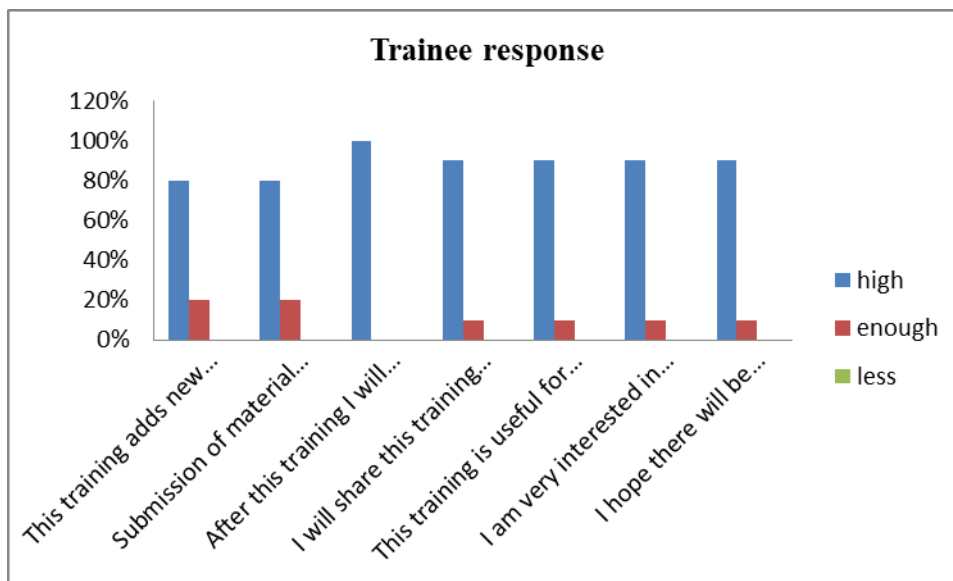


Figure 4. Participants' responses after attending the training