

## Supplementary Food with Potato and Moringa Sticks as an Effort to Introduce Nutritional Variations for Toddlers

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### Abstract

The nutritional status of children greatly affects their physical growth and brain development. For this reason, it is necessary to provide variations in the provision of additional food from available ingredients at economical prices and good nutritional content. Additional food can be obtained from processing potatoes and Moringa. The aim of this community service activity is to provide knowledge about variations in food from potatoes and Moringa leaves that are processed into sticks. The method used is by providing health education about moringa, malnutrition, stunting and demonstrating the making process of potato stick. The target of this activity is all pregnant women and mothers of children under five who come to Posyandu Mawar. The result of this program reveals an increase in knowledge about moringa, malnutrition, stunting and processing potato stick. Pregnant women and mothers of toddlers know and understand the incidence of stunting, and know how to make potato stick.

**Keywords:** Malnutrition, Stunting, Potato Stick

### INTRODUCTION

Malnutrition is the leading cause of child mortality in developing countries (Alifariki, 2020). World Health Organization data in 2013, more than 50% of child deaths in developing countries are caused by poor nutritional conditions (Nation, 2013). The increase in the incidence of malnutrition in Indonesia continued to grow rapidly until 2018 with a prevalence of 17.7% (Kemenkes RI, 2019).

According to the 2019 West Java health profile, there were 48,757 cases of malnutrition in toddlers or 1.6%, this result is still below the target of 3.5%. Reported from 27 regencies/cities with cases of malnutrition in Ciamis Regency, Ciamis Regency is high at 2.4% compared to Bandung City, Karawang Regency, Tasikmalaya Regency, Cirebon Regency, Garut Regency, Bekasi City, Subang Regency, Cirebon City, West Bandung Regency, Bekasi Regency, Sukabumi Regency, Banjar City and Bandung Regency.

Based on a report from the puskesmas in 2019 in Ciamis Regency, it showed the number of live births was 18,492 babies. Babies with Low Birth Weight (LBW) in 2019 were 920 babies (5.0%), while the number of reported toddlers (target) was 81,921 people, who were weighed as many as 73,993 (90.3%) and those under the Red Line (BGM) were 680 inhabitants (0.9%). Nutritional problems that still exist and the number tends to increase is the problem of undernutrition and malnutrition. Malnutrition is strongly influenced by lack of public knowledge, socio-economic conditions and the incidence of disease. In 2017 the number of malnutrition found and receiving treatment was 100 people (Kebidanan et al., 2020). Meanwhile, data from the Linggasari Center for toddlers with malnutrition/malnutrition from January to April 2022 totaled 14 toddlers.

The provision of inadequate nutritional intake will have an impact on the long-term growth and development of toddlers, are permanent and difficult to repair. The short-term impact of chronic malnutrition is impaired brain development and growth disorders, while the impact for chronic malnutrition is death. Therefore, nutritional problems need to be addressed quickly and appropriately. Various efforts to overcome nutritional problems have been carried out by the government, one of which is the provision of complementary feeding (MPASI). The provision of

complementary foods for breast milk (MPASI) can be made from local food ingredients so that toddlers get adequate nutritional intake according to their age (Kementrian Sosial RI, 2013).

The nutritional status of children greatly affects their physical growth and brain development. For this reason, it is necessary to provide variations in the provision of additional food from available ingredients at economical prices and good nutritional content. Additional food can be obtained from processing potatoes and Moringa.

Moringa leaves are very rich in nutrients, including calcium, iron, protein, vitamin A, vitamin B and vitamin C (Oluduro, 2012; Misra and Misra, 2014). The micronutrient content is 7 times the vitamin C of oranges, 4 times the vitamin A of carrots, 4 glasses of calcium milk, 3 times the potassium of bananas, and protein in 2 yogurts (Tahir Mahmood, Mugal and Haq, 2010), so it is good for consumption by pregnant women and toddlers. as an ingredient to meet nutritional needs during growth (Tekle et al., 2015). Moringa leaf flour contains high antioxidants and antimicrobials (Biswas et al, 2012) (Muliawati, 2020).

The use of Moringa leaves (*Moringa Oleifera*) is now increasingly popular among the residents, not only easy to obtain but also very cheap, affordable by the local economy in general, with natural ingredients that are easy to process and have no side effects to be used as food that can improve nutrition and baby's weight (Nababan et al., 2021).

For this reason, an innovation was made regarding the manufacture of additional food in the form of potato sticks and Moringa leaves whose ingredients can be obtained easily and at relatively affordable prices. Potalor sticks are a new variant of potato and Moringa leaves that are made so that toddlers like and want to consume this additional food. The nutritional content is also good. This is an effort so that the problem of malnutrition/malnutrition is handled.

## **METHOD**

There are two stages of method used in this community service activity, namely: 1) Providing the health education about moringa, malnutrition, stunting and the making process of potalor stick.. This program is conducted by intensifying the health protocol such as using mask and keeping distance, 2) Demonstrating the making process of potalor stick. The speaker with specific capability and the student are pointed out to give a lecture about health education. Those methods refer to the establishment of work program to overcome moringa, malnutrition, stunting, socialization and potalor stick making process. In order to support the implementation of this community service activity, countless ways are being suggested, for instance:

- To coordinate with public health service
- To create work programs for the socialization
- To approach the partner
- To hold health socialization for the pregnant women and mothers of toddlers about stunting, malnutrition the prevention, and the solution of stunting cases, precisely in Posyandu Mawar by demonstrating of how to make potalor stick.

## **RESULTS**

These activities were organized for pregnant women and mothers of toddlers. It was held on Juli 15<sup>th</sup>, 2022 with 31 participants. It took place at Posyandu Mawar. The organizers of this event were the lecturer and student of D3 Midwifery Study Program.

At the beginning of the program, the participants were equipped an education about stunting and the benefit of moringa Health education was also given to the participants who came to Posyandu Mawar. They got a leaflet about malnutrition, stunting and benefits of moringa leaves. Moringa leaves can be found easily and nutrient-rich. The making process of potalor stick could be considered as a way so that people would make various processed moringa leaves and potato at home.

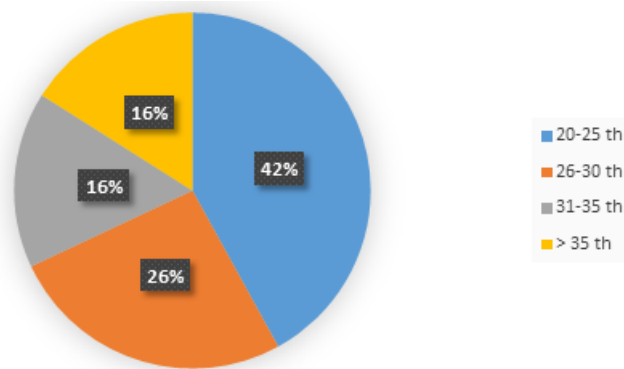


Figure 1. Age of the participant

## DISCUSSION

Health education is completed by demonstrating the moringa leaves and potato making process into potalor stick and handing out a leaflet. Pregnant women and mothers of toddlers pay a full attention to the socialization about the benefits of moringa leaves with the aim of anticipating stunting. They also listen to the explanation about the steps of how to make potalor stick as a variation of food made from moringa leaves and potato as an effort to prevent stunting.

There are a lot of factors that can trigger stunting to the infants such as direct and indirect factors. The indirect factors are mothers' education level and family's income. According to Soekirman and UNICEF, malnutrition status might be affected by the lack of nourishing food. This low nutrition intake can be caused by insufficient food availability in household. It only can be fulfilled when it meets enough

purchasing power of people. Socioeconomic is considered as a contributing factor in determining the purchasing power of family; for high-income family, it would be easier to obtain an education and health access, therefore the nutritional status of their children can be better (Maharani A, 2018). Another determining factor of stunting is socioeconomic factors. Socioeconomic status, age, gender and mother's education are kind of important factors of the adolescent nutritional status (underweight and stunting) (United Nations-World Health Organization-The World Bank Group, 2019).

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Nutrition improvement programs for infants and toddlers receive important attention from the government through the national movement policy for the first 1000 days of life. This movement consist of nutrition-specific and nutrition-sensitive interventions. Specific intervention is an action or activities which are specifically planned for group of the first 1000 days of life. Those activities are generally conducted by healthcare sector; it is include giving out immunization, distributing supplementary food (PMT) for toddler's mothers and infants, examining infants' growth in Posyandu, handing out supplement, program planning guidelines of the first 1000 days of life, iron and folic acid for pregnant women, promoting exclusive breastfeeding and complementary feeding, and more. Specific intervention is considered as short-term intervention that can be recorded within a short space of time (Republik Indonesia, 2013). Nutrition improvement status can be obtained from moringa leaves in which are easily gained with affordable prices. The process of turning moringa leaves and potato to be more varied food can be seen as approach in anticipating stunting, for example the potalor stick making process.

## CONCLUSIONS AND RECOMMENDATIONS

After be given out health education, the pregnant women and mothers of toddlers are able to understand the benefits of moringa leaves and potato, stunting incidence, and process of turning basic ingredients of moringa leaves and potato into potalor stick. Their knowledge about stunting

and potalor stick making process has increased too. They know how to make potalor stick and practice it at home. Expectantly, after this socialization is done, this activity can be conducted constantly.

### ACKNOWLEDGMENTS

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## APPENDIX



**Figure 1.** Health Education About Moringa Leaves, Mal Nutrition and Stunting



**Figure 2.** Demonstration of Making Potalor Stick