

## Reducing Stunting Rates through Complementary Foods in Madukoro Village, Kajoran District, Magelang Regency

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### Abstract

Stunting is a chronic condition caused by long-term malnutrition. Stunting is based on the index of body length for age (PB/U) or height for age (TB/U) with a calculation limit (z-score) less than -2 SD. This community service aimed to provide information to the public about stunting, its impact, how to handle it, and how to make complementary foods. The method used was a survey, permission from a partner, problem discussion, and problem-solving by providing counseling and preparing complementary foods. The results indicated that people with insufficient understanding of stunting information were finally more aware of stunting, prevention methods, causes of stunting, and the impact of stunting on infants. By providing information about complementary foods, selecting nutritious foods, and environmental hygiene sanitation, stunting rates can be reduced in Madukoro Village.

**Keywords:** Community Service, Stunting, Complementary Foods

### INTRODUCTION

Stunting is a chronic condition caused by long-term malnutrition. Stunting is based on the index of body length for age (PB/U) or height for age (TB/U) with a calculation limit (z-score) less than -2 SD (Prevalensi et al., 2015).

Stunting in childhood is a risk factor that increases mortality, low cognitive abilities and motor development, and imbalanced body functions. Stunting in toddlers needs special attention because it can hamper their physical and mental development. Stunting is associated with an increased risk of morbidity and mortality as well as stunted growth in the baby's motor and mental abilities (Kemenkes RI, 2018). Stunting also causes degenerative diseases in old age such as hypertension and obesity because people with the stunted body have a low ideal body weight. An increase in several kilograms of weight can have an impact on the person's Body Mass Index (Apriluana, 2018).

Stunting can inhibit organs to grow and develop properly and optimally. Data shows that children under five who experience stunting contribute as much as 15% (1.5 million) of deaths globally. Stunting will have an impact on toddlers during the period of growth and development, both short-term and long-term impacts. The short-term effects are failure to thrive, barriers to cognitive and motor development, the nonoptimal physical size of the body, and metabolic disorders. Then the long-term impacts include a decrease in intellectual capacity, structural and functional disorders of nerves and permanent brain cells which can cause a decrease in the ability to absorb information and knowledge in the playing area, decrease productivity as an adult and increase the risk of non-communicable diseases such as hypertension, coronary heart disease, stroke, and diabetes mellitus (Bappenas, 2018).

Stunting is usually affected by many factors. Direct factors include low nutritional intake and health status, while indirect factors are income and economic inequality, food system, health system, urbanization, and others (Bappenas, 2018). Many previous researchers indicated that the factors causing stunting include lack of knowledge, food insecurity, premature or low birth weight births, insufficient exclusive breastfeeding, management of children's complementary foods, environmental sanitation, and low socioeconomic status of the family (Beal, et al, 2018; Bukusuba, et al, 2017; Masereka, et al, 2020).

The number of stunting cases is quite high. There is a need for an integrated intervention both from health workers or collaborating with multi-sector teams to reduce stunting rates and control many factors causing stunting. One of the main factors of stunting in Madukoro village is poverty. It is very difficult for the community to get highly nutritious food. Additionally, the geographical factor such as long distance from traditional markets or from the city of Magelang is the driving force for the difficulty of the Madukoro Village community to get highly nutritious food. Another factor is the lack of information about stunting and the lack of awareness from parents to always participate in an integrated health service (Posyandu) activity. Moreover, many children do not receive complete vaccination and exclusive breastfeeding.

Another factor which causes newborns experiencing stunting is nutritional status of pregnant women. Problems regarding nutrition must be considered since the baby is in the womb (Sampe et al., 2020). If there is a lack of nutritional status in early life, it will have an impact on subsequent lives such as delayed fetal growth, low birth weight (LBW), small, short, thin, low immune system, and the risk of death (Zaif et al, 2017).

The objectives of this service were as follows:

- Increasing public information about stunting.
- Informing causative factors of stunting.
- Informing how to prevent health problems.
- Teaching how to make complementary foods aiming to reduce stunting cases in infants aged 6 months and over.
- Implementing one of the roles of Higher Education as a source of knowledge and technology for the community in the form of the Integrated Community Service Program (PPMT).

## **METHOD**

The following is some stage to overcome problems faced by partners. The solution offered is to socialize stunting, how to handle stunting, causative factors of stunting, and how to prepare complementary foods. The complete stages can be perceived below.

### **Survey Stage**

Community service team determined the location to carry out community service by looking at the highest stunting rates in Magelang. Then, it was found that in the Kajoran sub-district, especially the Madukoro village, the stunting rates were quite high.

### **Permission Stage**

The team submitted a permit letter to conduct the Integrated Community Service Program (PPMT) with the topic of stunting to the Village Head and the Head of the Posyandu in Madukoro.

### **Partner Agreement Stage**

The team made an agreement with the Head of the Posyandu and several health cadres by asking for their willingness to become partners and participate in the implementation of community service.

- Preparing and conducting counselling
- Preparing food ingredients for complementary foods

## **RESULTS AND DISCUSSIONS**

The Integrated Community Service Program (PPMT) activities carried out in Madukoro village, Kajoran sub-district, Magelang Regency included:

### **Posyandu Activities**

Along with Posyandu cadres, the community service team measured baby's weight, height, upper arm circumference, head circumference, and provide socialization about good things for children growth period to encourage motoric and cognitive development especially babies aged 12 -36 months.

The steps for the Posyandu activities are as follows:

- Prepare tools and materials such as baby scales, baby height gauges, head circumference measuring devices, and upper arm circumference.

- Register mothers who come to the Posyandu.
- Measure weight and circumference of the baby's upper arm and head.
- Calculate the Z-Score to find out babies who experienced stunting problems.
- The activity started at 08.30 and ended at 12 noon. The Posyandu activity took a very long time because the team made introductions and held deliberations regarding how to handle stunting.

### **Health Education About Stunting**

In this activity, the team collaborated with the midwives in Maduroko and Posyandu cadres. The targets of the activity were mothers with stunting children because stunting can be prevented if it is handled well and properly. If mothers understand the meaning of stunting, the causative factors and prevention of eating is high. It is hoped that the child will avoid stunting.

This counselling provided information about the definition of stunting, the factors that cause stunting, how to handle stunting, how to prevent stunting in infants, and how to make complementary foods for infants aged over 6 months (Bella & Fajar, 2019). This counselling activity was greeted with a good response by mothers with stunting children as evidenced by the enthusiasm and active participation during the counselling.

One of the primary challenges of this activity was the long distance. The team had to wait for the mother to gather. However, these barriers did not have an impact on counselling. Counselling continues to run smoothly (Alfarisi et al., 2019).

### **Preparing Complementary Foods**

The team prepared complementary foods according to food ingredients available in Madukoro village. The activity of preparing complementary foods ran well. Participants received information about complementary foods and put much attention on how to make complementary foods with easily available materials.

Participants did not know that complementary foods were important when children were 6 months and older. Many participants did not know about complementary foods. There were many cases of mothers in Madukoro village who did not give complementary foods to their babies, thus triggering high stunting health problems.

### **CONCLUSIONS AND SUGGESTIONS**

The implementation of the Integrated Community Service Program (PPMT) carried out with outreach activities on stunting and the provision of complementary foods in Madukoro Village, Kajoran District, Magelang Regency run well and smoothly. The programs which have been conducted including:

- Assisting Posyandu activities in Madukoro Village.
- Counselling on Stunting.
- Preparing Complementary Foods.

It is expected to reduce the stunting rates in Madukoro village. People who experience stunting must share information about stunting health problems so that parents can easily understand what stunting is, how to handle it, and what causes it. For the community especially pregnant women and mothers with children aged 0-36 months, it is expected that they will always participate in Posyandu activities so that the cadres can monitor their health status.

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