

COMMUNITY SERVICE ARTICLES

Effect of Health Education on Mothers' Knowledge of Balanced Nutrition, Child Growth and Development, and Complete Immunization at Nuri ILP Posyandu, UPT Puskesmas Kenangan, Medan

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Abstract: Balanced nutrition, growth and development monitoring, and complete immunization are essential factors in supporting child health. Mothers' lack of knowledge regarding these aspects may increase the risk of growth disorders, infectious diseases, and developmental delays in children. This community service activity aimed to assess mothers' level of knowledge regarding balanced nutrition, child growth and development, and complete immunization at Posyandu (Pusat Layanan Terpadu/Integrated Service Center) Nuri ILP, UPT(Unit Pelayanan Terpadu/Integrated Service Unit) Puskesmas Kenangan Medan. Method: The activity was conducted through health education and questionnaire distribution to mothers with toddlers. The program was carried out using interactive and educational approaches, including lectures, discussions, and evaluation of participants' understanding. The results showed an improvement in mothers' knowledge after the educational intervention, particularly regarding the importance of providing balanced nutrition, routine monitoring of child growth, and completion of basic immunization. Conclusion: Health education at posyandu can be an effective approach to improve mothers' knowledge and awareness of child health.

Keywords: Balanced nutrition, child growth and development, complete immunization, maternal knowledge, posyandu

INTRODUCTION

Child health is one of the primary indicators in determining the quality of future human resources. Healthy children will have the ability to grow and develop optimally—physically, mentally, socially, and emotionally. Therefore, efforts to maintain children's health must begin at an early stage through the fulfillment of their basic needs. This includes adequate nutritional intake, routine monitoring of growth and development, and the provision of complete immunizations according to the recommended schedule. These three aspects are essential components in reducing morbidity and mortality rates in children, particularly during the toddler years.¹

Nutritional problems in children remain a major public health challenge in Indonesia. According to data from the Ministry of Health of the Republic of Indonesia, the prevalence of stunting and nutritional issues among toddlers is still considerably high in various regions.² Factors influencing this condition are not only related to family economics but are also affected by the mother's level of knowledge regarding healthy eating patterns and children's nutritional needs. Mothers with a good understanding of balanced nutrition tend to be more capable of providing nutritious food and managing their children's dietary habits compared to those with a lower level of knowledge.³

In addition to fulfilling nutritional needs, periodic monitoring of child growth and development is also highly critical. Growth and development refer to the process of increasing body size and functional abilities, which encompass motor, language, social, and emotional aspects. This monitoring can be conducted through Posyandu (integrated health post) activities, which include measuring weight, height, and head circumference, as well as assessing age-appropriate child development. Early detection of growth and developmental disorders is essential to ensure prompt intervention, thereby preventing long-term impacts.^{4,5}

Growth and developmental disorders in children can occur due to various factors, such as malnutrition, recurrent infectious diseases, lack of stimulation, and environmental factors. Children experiencing developmental delays are at risk of suffering from impaired learning abilities, decreased productivity, and future health problems. Therefore, the active involvement of parents, particularly mothers, is highly required in routinely monitoring their children's growth and development.⁶

Complete immunization is also an extremely effective promotive and preventive measure to protect children from dangerous communicable diseases, such as measles, polio, hepatitis B, diphtheria, pertussis, and tetanus. Immunization programs have been proven to reduce morbidity, disability, and

mortality rates caused by vaccine-preventable diseases (VPDs).⁷

Nonetheless, there are still members of the community who have not provided complete immunizations for their children due to various factors, such as a lack of knowledge, concerns over immunization side effects, misinformation, and low awareness of the importance of immunization. A mother's lack of understanding regarding the benefits of immunization can negatively affect compliance with the child's immunization schedule. Therefore, health education for mothers is highly necessary to improve their understanding and awareness of the importance of complete immunization.^{7,8}

As a form of Community-Based Health Efforts (Upaya Kesehatan Bersumber daya Masyarakat / UKBM), Posyandu (integrated health post) plays a vital role in improving maternal and child health in the community. Posyandu serves not only as a facility for basic health services but also as a platform for health education and promotion. Through Posyandu activities, mothers can obtain information regarding balanced nutrition, growth and development monitoring, immunization, and general child health.

The Nuri ILP Posyandu under the Kenangan Primary Health Centre in Medan is one of the active facilities providing maternal and child health services. Nevertheless, some mothers there are still found to have a poor understanding of the importance of balanced

nutrition, growth and development monitoring, and complete immunization in children. This condition highlights the urgent need for continuous health education efforts to enhance mothers' knowledge in maintaining child health.

Based on this background, this community service activity was conducted to determine the level of mothers' knowledge regarding balanced nutrition, growth and development, and complete immunization in children at the Nuri ILP Posyandu, Kenangan Primary Health Centre, Medan. Additionally, it aimed to enhance mothers' understanding through health counseling activities.

METHOD

This community service activity was conducted at the Nuri ILP Posyandu, Kenangan Primary Health Centre, Medan, in May 2026. The population in this study consisted of all mothers with toddlers who were present during the Posyandu activities at the time of the study. The research sample comprised 20 respondents who met the inclusion and exclusion criteria. The sampling technique utilized the accidental sampling method, specifically targeting mothers who visited the Posyandu and agreed to participate as respondents while the activity was underway.

This study employed a descriptive-analytical design with a cross-sectional approach. The data used in this study were primary data, obtained directly through

questionnaires completed by the respondents. The assessment of knowledge levels was categorized into three levels: good, fair, and poor, based on the respondents' answer scores.

In addition to administering the questionnaires, the activity included health counseling using interactive-educational methods, such as lectures, discussions, and Q&A sessions. The counseling materials covered the importance of balanced nutrition in children, routine monitoring of growth and development, the benefits of complete immunization, and the schedule for basic childhood immunization. The process began with an evaluation questionnaire (pre-test), followed by the health counseling session, and concluded with a final evaluation (post-test) to measure the participants' knowledge improvement after receiving the health education.

RESULT

The community service activity regarding mothers' level of knowledge about balanced nutrition, child growth and development, and complete immunization in children was conducted at Posyandu Nuri ILP, UPT Puskesmas Kenangan Medan, involving a total of 20 mothers with toddlers as respondents.

Tabel 1. Respondent Characteristics

Characteristics	Frequency (n)	Percentage (%)
Maternal Age		

< 20 years	1	5%
20 - 35 years	19	85%
> 35 years	2	10%
Educational Level		
Primary School	2	10%
Junior High School	5	25%
Senior High School	10	50%
Higher Education	3	15%
Number of Children		
1 child	8	10%
≥ 2 children	12	60%

Based on Table 1, the majority of respondents were in the 20–35 years age group, totaling 17 individuals (85%). Based on educational level, most respondents had completed senior high school, amounting to 10 individuals (50%). The majority of mothers had ≥ 2 children, totaling 12 individuals (60%).

Table 2. Mothers' Knowledge Levels Before Health Education

Knowledge Level	n	%
Good	5	25 %
Moderate	8	40%
Poor	7	35%
Total	20	100%

Based on Table 2, the level of mothers' knowledge before the educational intervention was predominantly in the moderate category, with 8 respondents

(40%). Respondents with poor knowledge totaled 7 individuals (35%), while those in the good category accounted for 5 individuals (25%).

Table 2. Mothers' Knowledge Levels After Health Education

Knowledge Level	n	%
Good	15	75 %
Moderate	4	20%
Poor	1	5%
Total	20	100%

Based on Table 3, after the health education intervention, there was an improvement in mothers' level of knowledge. The majority of respondents were in the good category, totaling 15 individuals (75%), while 4 respondents (20%) were in the moderate category and only 1 respondent (5%) was in the poor category.

Table 4. Comparison of Knowledge Levels Before and After Counseling

Knowledge Level	After Education	HealthAfter Education	Health
Good	5(25%)	15(75%)	
Moderate	8 (40%)	4 (20%)	
Poor	7 (35%)	1 (30%)	
Total	20 (100%)	20 (100%)	

Based on Table 4, there was an increase in mothers' knowledge after the health education was provided. The proportion of respondents in the good knowledge category increased from 25% to 75%, while the poor category decreased from 35% to 5%.

DISCUSSION

Based on the results of the community service activity conducted at Posyandu Nuri ILP, UPT Puskesmas Kenangan Medan, it was found that mothers' level of knowledge regarding balanced nutrition, child growth and development, and complete immunization improved after the health education intervention. This indicates that health education plays an important role in enhancing community understanding, particularly among mothers with toddlers, in efforts to maintain children's health.

In this study, the majority of respondents were in the 20–35 years age group. This age range represents the productive and reproductive period, which generally has a better capacity to receive information and adopt health-related behaviors compared to older age groups. In addition, most respondents had a senior high school level of education. An individual's level of education can influence their ability to receive, understand, and process health information. The higher a person's educational level, the easier it is for them to understand the importance of healthy lifestyle behaviors, including maintaining children's health.

The results of the study showed that before the educational intervention, most respondents had knowledge levels in the moderate and poor categories. This indicates that some mothers had not yet fully understood the principles of balanced

nutrition, the importance of monitoring child growth and development, and the benefits of complete immunization. This lack of knowledge may be influenced by several factors, such as limited access to information, low frequency of health education, and suboptimal utilization of health services.

Mothers' knowledge regarding balanced nutrition is a crucial factor in determining a child's health status. Balanced nutrition in children must meet both macro- and micronutrient requirements necessary for growth and development.⁹ Children who receive adequate nutritional intake will have optimal physical growth, good immune function, and better cognitive development. Conversely, malnutrition can lead to various health problems such as stunting, underweight, developmental disorders, and decreased immunity.¹⁰

In addition to balanced nutrition, monitoring child growth and development is also an important aspect discussed in this educational activity. Child growth and development is a continuous process that occurs from birth to adulthood. Growth is related to changes in physical size such as body weight, height, and head circumference, while development refers to motor, language, social, and emotional abilities. Routine monitoring of growth and development is essential for early detection of growth disorders or developmental delays.^{11,12}

The evaluation results showed that after the educational intervention, most mothers

understood the importance of bringing their children to the posyandu every month for weighing and developmental monitoring. Before receiving education, some mothers believed that weighing was only necessary when the child was ill. After the explanation, mothers began to understand that routine monitoring aims to assess whether a child's growth is appropriate for their age and to detect health problems as early as possible.¹³

Undetected growth and developmental disorders can have long-term impacts on a child's quality of life.¹⁴ Children with developmental delays may experience learning difficulties, communication disorders, and challenges in social interaction. Therefore, early detection through posyandu activities is very important so that timely interventions can be implemented. Posyandu serves as an effective platform for monitoring child health because it is community-based and easily accessible.¹⁵

Another aspect discussed in this activity is complete immunization in children. Immunization is one of the most effective preventive measures to protect against infectious diseases. Immunization programs have been proven to reduce morbidity and mortality from vaccine-preventable diseases such as measles, polio, diphtheria, tetanus, and hepatitis B. However, there are still members of the community who do not provide complete immunization

for their children due to lack of knowledge or misinformation about vaccines.¹⁶

Before the educational session, some respondents had misconceptions regarding the side effects of immunization. Some mothers were concerned when their children developed a fever after vaccination and were hesitant to continue subsequent doses. After receiving education, mothers began to understand that mild fever following immunization is a normal immune response in the process of developing immunity and is usually temporary. This explanation helped improve understanding and reduce mothers' concerns regarding immunization.¹⁶

The increase in knowledge levels after the educational intervention indicates that direct educational methods—such as lectures, discussions, and question-and-answer sessions—are quite effective in improving community understanding. Interactive education allows participants to ask about aspects they do not yet understand, enabling the information delivered to be better received. In addition, the use of educational media such as leaflets and simple explanations also helps participants understand the material more easily.¹⁷

The results of this study are consistent with several previous studies which state that health education can improve mothers' knowledge regarding child health. Good knowledge will influence mothers' behavior in providing care for their children, including in providing nutritious food, monitoring

growth, and adhering to immunization schedules. With increased maternal knowledge, it is expected that positive behavioral changes will occur, thereby improving children's health outcomes.¹⁸

Posyandu plays a very important role in improving maternal and child health in the community. In addition to serving as a basic health service facility, posyandu also functions as a platform for health promotion and community empowerment. Educational activities conducted regularly at posyandu can help increase community awareness of the importance of maintaining children's health from an early age. Therefore, support from healthcare workers, posyandu cadres, and the community is needed to ensure that health education activities can be carried out sustainably.^{19 20}

Overall, the results of this community service activity show that mothers' knowledge regarding balanced nutrition, child growth and development, and complete immunization can be improved through structured and interactive health education. This increase in knowledge is expected to have a positive impact on mothers' behavior in maintaining their children's health, thereby supporting the development of a healthy, intelligent, and high-quality future generation.

CONCLUSION

Based on the results of the community service activity conducted at Posyandu Nuri

ILP, UPT Puskesmas Kenangan Medan, it can be concluded that mothers' level of knowledge regarding balanced nutrition, child growth and development, and complete immunization improved after the health education intervention. Prior to the educational activity, most respondents still had knowledge levels in the moderate and poor categories, particularly regarding the importance of balanced nutrition, routine growth and development monitoring, and the benefits of complete immunization for children.

After the health education was delivered through lectures, discussions, and question-and-answer sessions, the majority of respondents demonstrated improved understanding, as indicated by the increase in the number of respondents in the good knowledge category. Mothers became more aware of the importance of providing nutritionally adequate food according to children's needs, the importance of regular monitoring of child growth and development at posyandu, and the importance of completing immunization according to the recommended schedule to prevent infectious diseases in children.

Health education activities at posyandu have proven to be effective as a means of community education and health promotion, particularly in improving mothers' knowledge about child health. Good knowledge is expected to influence mothers' behavior in adopting healthy lifestyles and

providing optimal care for their children, thereby supporting optimal growth and development.

Therefore, health education activities regarding balanced nutrition, child growth and development, and complete immunization need to be conducted regularly and sustainably through posyandu and other healthcare facilities. Support from healthcare workers, posyandu cadres, and active community participation is essential to ensure that efforts to improve child health can be carried out optimally and continuously.

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