

Implementation Of Public Health Program Model To Manage Malnutrition Among Under-Five Children In Purworejo District, Central Java

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Abstract

Background: Purworejo District is one of the regions in Indonesia that still has a high rate of malnutrition among children. The prevalence of malnutrition among under-five children in Purworejo District continues to increase. Therefore an effective health program is needed to manage such problem.

Purpose: This study aims to develop and evaluate the "Implementation of Public Health Program Model to Manage Malnutrition among Under-five Children in Purworejo District, Central Java".

Methods: This study applied qualitative and quantitative designs with descriptive and analytical analysis. The initial stage of this study is performed by understanding of health problems (advanced identification), followed by the planning stage (model creation), program implementation (model implementation), community education, to the evaluation stage of the "Implementation of Public Health Program Model to Manage Malnutrition among Under-five Children in Purworejo District, Central Java". The current study was conducted in Grantung Village, Bayan Sub-District, Purworejo District, Central Java from August to November 2023

Result: The study results revealed that the "Implementation of Public Health Program Model to Manage Malnutrition among Under-five Children in Purworejo District, Central Java" was effective to indirectly manage malnutrition among under-five children in Purworejo District. There was a significant increase in the knowledge level (p-value=0.001), attitude (p-value=0.001), and perception (p-value=0.023) of parents/caretakers regarding malnutrition for the better.

Conclusion :

Keywords: Public Health Program Model, Malnutrition, Under-five children

Introduction

The problem of malnutrition among children in Indonesia is still a serious concern because it can impact children's health and growth, as well as have long-term impacts on their future. Malnutrition is a condition when children do not receive nutritional intake according to their needs. Malnutrition has two forms namely undernutrition such as wasting, stunting and underweight, and also overnutrition such as obesity. Such condition should not be neglected since it can have an adverse impact on the child's general health condition as well as the process of growth and development. The first thousand (1000) days of a child's life is a golden period for their growth and development. During this period, children need adequate nutritional intake to optimize their growth (Sari & Yulianto, 2020).

Purworejo District is one of the regions in Indonesia that still has a high rate of malnutrition among children. The prevalence of malnutrition among under-five children in Purworejo District continues to increase. Reported data showed that the prevalence of

under-five children with malnutrition in 2016 in Purworejo District was 3.93%, in 2017 it decreased to 3.88%, in 2018 it increased again to 4.71%, in 2019 it became 4.31%, and in 2020 it became 9.46 %. Thus, an effective public health program or model is required to solve this problem (Medium Term Regional Development Plan for Purworejo District in 2021-2026, 2021).

There are several programs that were already running to manage malnutrition among children in Indonesia, such as the Complementary Feeding Program (PMT), the Toddler Complementary Feeding Program (PMT), the Stunting Reduction Acceleration Program, the Posyandu Program, the National Action Plan in 2017-2021, and several other programs. Several programs implemented in Indonesia have achieved some success in decreasing malnutrition rate among under-five children. However, family-based programs were still lacking. The complex challenges related to malnutrition still exists, especially regarding different geographical and social contexts in each region.

Furthermore, the lack of cross-sector collaboration can also be a challenge. The success of national programs can also vary from one region to another. Therefore, continuous monitoring, evaluation and improvement of these programs should be applied to achieve better outcomes.

The public health program model under study involved collaboration between local government, health workers, the community and other related agencies. This model was implemented with an instrument in the form of a book entitled malnutrition-free family. This book contains important information related to malnutrition, starting from the definition, types of malnutrition, explanations about wasting, stunting, underweight, as well as overnutrition such as obesity. Besides malnutrition, this book also contains material about infant and young child feeding (IYCF), and family parenting styles regarding the fulfillment of nutrition for children. In addition, this book also contains records of several things such as child growth monitoring records (by health cadres), records

of nutritional supplements (by health workers), immunization records (by health workers), immunization records (by health workers), records of routine health checks at the community health center (by health workers), records of additional food (by health workers), and health referral records (by specialist doctors / nutritionists/ psychologists/ other experts). In addition of the Health Service, this book also integrates with related agencies such as the Social Service, Education Service, and Village Funds through the receipt record sheet regarding welfare programs for malnourished children.

The "Implementation of Public Health Program Model to Manage Malnutrition among Under-five Children in Purworejo District, Central Java" is expected to improve the nutritional status of children in Purworejo and become an example for other regions in Indonesia.

Methods

This study applied qualitative and quantitative designs with descriptive and

analytical analysis. The initial stage of this study is performed by understanding health problems (advanced identification), followed by the planning stage (model creation), program implementation (model implementation), community education, to the evaluation stage of the "Implementation of Public Health Program Model to Manage Malnutrition among Under-five Children in Purworejo District, Central Java".

RESULTS AND DISCUSSION

a. Understanding of Health Problems (Advanced Identification)

At this stage the researchers strengthened their understanding of the health problems they were facing. They were not only relying on the secondary data obtained, but also conducting direct data searches to obtain primary data. At this stage, the researchers succeeded in interviewing 38 resource persons consisting of 2 people from the Purworejo District Health Office and 36 people from several CHCs in the Purworejo District area. Based on the interviews, several main things were identified, namely: there were already

many health programs carried out to dealing with the problem of malnutrition among under-five children in Purworejo District, but there was still a lack of family-based programs; lack of family knowledge about nutrition for under-five children; many cross-sectoral collaborations had been carried out, but there was no media or instrument that connected such cross-sectoral collaboration; and there were many funding programs to manage malnutrition, but it was still questionable whether such funds were right on target.

Most health programs in Indonesia focus on health services provided in health facilities. Resources, including health workers and budgets, are often centralized in health facilities rather than reaching families directly. Knowledge regarding nutrition and good nutritional practices among parents and families still varies. Many families may not realize how important their role is in providing balanced nutrition to their children.

Lack of coordination and collaboration between different health programs can hinder the effectiveness of malnutrition prevention

efforts. Poor coordination can result in overlap or uncertainty in managing resources. Economic factor also plays an important role. Many families in Indonesia live below the poverty line, and a lack of financial resources can be an obstacle to obtaining nutritious food, so that financial aids that are not well targeted would be a shame.

b. Planning (Model Creation)

This planning stage was performed based on the existing health problems. The researchers outlined this plan in a model called the "Implementation of Public Health Program Model to Manage Malnutrition among Under-five Children in Purworejo District, Central Java". The activities to be performed in this model were (chart 1):

- a. This model was based on family empowerment
- b. The implementation of this model was assisted by an instrument in the form of the book entitled "Malnutrition-Free Family". Such book is intended to increase family knowledge about nutrition for under-five children. The

materials provided includes: nutrition, malnutrition, infant and young child feeding (IYCF), and family parenting styles regarding fulfillment of nutrition for children, and recapitulates access improvement support for families, such as: providing nutritional supplements, immunizations, routine health checks at CHC, providing additional food, and welfare programs for malnourished children.

- c. Strengthening nutrition education in families by educators/health workers.
- d. Monitoring of children's growth by health cadres.
- e. Evaluation by health workers.
- f. Sustainability of the program by health cadres

The expected end result of this model is an increase in knowledge & quality of life.

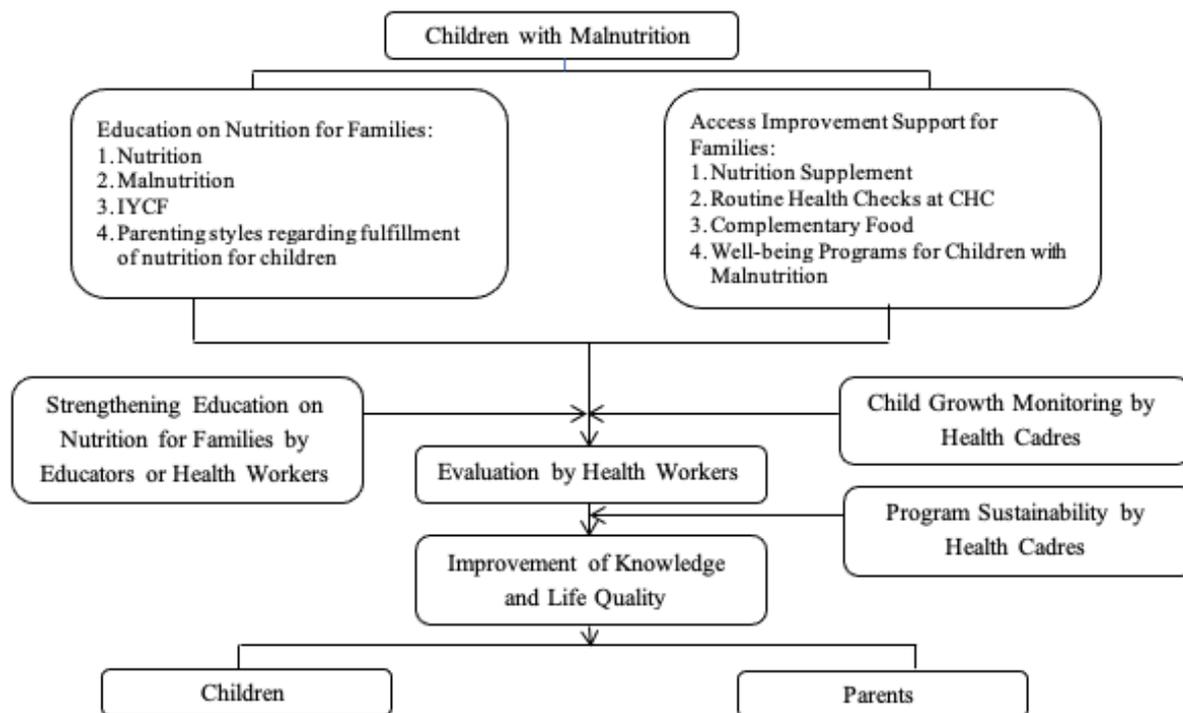


Chart 1. Implementation of Public Health Program Model to Manage Malnutrition among Under-five Children in Purworejo District, Central Java

“Implementation of Public Health Program Model to Manage Malnutrition among Under-five Children in Purworejo District, Central Java” was an effective and important approach in managing malnutrition among under-five children with a focus on the family as a core unit. This allows identification and treatment of nutritional, health and environmental aspects that may influence a child's growth and development.

This model gives families the tools and knowledge to take an active role in caring for their children. Such model includes health

education about nutrition, understanding the importance of a balanced food intake, and how to prepare nutritious food. This model works directly with families. It is expected that this program can be more effective in changing children's nutrition-related behavior including dietary changes, meal planning, and daily nutritional practices. In addition, such model can also include elements of strong community engagement which may creates social support and mutual aid among families in the same community.

c. Model Implementation

The initial stage of the "Implementation of Public Health Program Model to Manage Malnutrition among Under-five Children in Purworejo District, Central Java" was performed in Grantung Village, Bayan Sub-District, Purworejo District, Central Java on October 17, 2023 at the Village Hall, and it run smoothly. The implementation of this program involved 41 respondents, namely under-five children with malnutrition. The children were accompanied by their respective parents/caretakers. In addition, we also invited the Village Head, community leaders, village midwives and health cadres. There were 65 invitees who attended the program. The implementation is in accordance with the theory of Community Mobilization Theory that a program or action planned in the previous stage is implemented by the community with the support of relevant partners (Minkler, 1992).

At this stage, it was also performed an initial assessment of the activity through a pre-test using questionnaire sheet which contained

several statements and questions to be answered by the parents/caretakers. The pre-test questionnaire consisted of several aspects, including knowledge about nutrition, malnutrition, IYCF, and family parenting styles regarding fulfillment of nutrition for children; attitude towards the prevention of malnutrition; and parental perception towards malnutrition.

d. Strengthening Community Education

At this stage, the researchers strengthened community education through health education related to nutrition, especially malnutrition among under-five. Health education was hold on October 30, 2023 by the study team at Grantung Village Hall, Bayan Sub-District, Purworejo District, Central Java. At this stage, parents/caretakers of under-five children were invited to take part in the health education. It is expected to increase awareness of parents/caretakers regarding malnutrition among under-five children.

This stage is very important since it is in accordance with existing theory that health education to the community may increase

understanding about malnutrition as an important component in efforts to prevent and manage nutritional problems in the community. Malnutrition is a global problem that affects the health and development of individuals, especially children. So, it is important to provide accurate and relevant information to the public. The benefit of this activity is that as basic knowledge, health education provides a basic understanding regarding malnutrition, including its types, causes, symptoms and impact on health. This helps people recognize malnutrition and understand how important it is to maintain good nutrition. Furthermore, health education emphasizes prevention as a priority. People need to know how to choose nutritious foods, plan balanced diets, and provide appropriate foods to their children and families.¹⁰⁻¹²

e. Evaluation and Monitoring

The evaluation stage of the "Implementation of Public Health Program Model to Manage Malnutrition among Under-five Children in Purworejo District, Central Java" was conducted on October 30, 2023

using a post-test questionnaire sheet. The post-test questionnaire sheet contained several statements and questions to be answered by the respondent's parents/caretakers. Statistical processing and analysis were further performed on the answers on post-test questionnaire. The evaluation results involved several aspects namely, knowledge about nutrition, malnutrition, IYCF, and family parenting styles regarding fulfillment of nutrition for children; attitude towards malnutrition prevention; and perception towards malnutrition. The evaluation results are presented in the following tables:

f. Knowledge about Nutrition, Malnutrition, IYCF, and Family Parenting Styles regarding Fulfillment of Nutrition for Children

The first aspect evaluated was knowledge about malnutrition, IYCF, and family parenting styles regarding fulfillment of nutrition for children. The results of the analysis on changes in knowledge can be observed in table 1.

Table 1. Knowledge about Nutrition, Malnutrition, IYCF, and Family Parenting Styles regarding Fulfillment of Nutrition for Children

No	Knowledge	Pre-test		Post-Test		p-value
		n	%	n	%	
1	Good	23	56.1	30	73.2	0.001
2	Poor	18	43.9	11	26.8	
Total		41	100	41	100	

The results of analysis presented in Table 1 showed that there was a change in knowledge about nutrition, malnutrition, IYCF, and family parenting styles regarding fulfillment of nutrition for children of among parents/caretakers for the better. Such finding can be observed in the comparison between scores before and after the "Implementation of Public Health Program Model to Manage Malnutrition among Under-five Children in Purworejo District, Central Java". 23 Parents/caretakers had good knowledge before implementation (56.1%) and 30 parents/caretakers had good knowledge after implementation (73.2%). It can be concluded that there was a significant difference in the level of knowledge before and after the "Implementation of Public Health Program Model to Manage Malnutrition among Under-

five Children in Purworejo District, Central Java" (p-value=0.001).

Such finding is certainly the expected result. Prawirohartono (2005) states that the nutritional status of children can be influenced by direct and indirect factors. Direct factors include infectious diseases and food intake, while indirect factors include the maternal or family knowledge about nutrition. Nutritional knowledge will influence nutritional status. Nutritional knowledge is knowledge related to food and nutrients. Maternal attitudes and behavior in choosing food to be consumed by children are influenced by various factors, including a the level of knowledge about nutrition, which can further influence the children's nutritional status. Insufficient maternal knowledge can be one of the determinants of children's nutritional status since it determines the maternal attitude or behavior in choosing food to be consumed by the children as well as eating patterns related to the amount, type and frequency. This will influence the children's food intake. Furthermore, maternal knowledge can be

influenced by age, education, knowledge, employment and income. Moreover, food intake of children is also influenced by local culture which can also influence food choices. Therefore, if a mother has poor knowledge on nutrition, the food intake given her child will also be inappropriate which can further affect the child's health status.³⁷⁻³⁸

g. Change in Attitude towards the Prevention of Malnutrition

The second aspect evaluated was changes in attitude towards the prevention of malnutrition. The results of the analysis regarding the evaluation of changes in attitude towards the prevention of malnutrition can be observed in the following table 2:

Table 2 Evaluation of Change in Attitude towards the Prevention of Malnutrition

No	Attitude	Pre-test n	Pre-test %	Post-Test n	Post-Test %	p-value
1	Good	26	63.4	29	70.7	0.001
2	Poor	15	36.6	12	29.3	
Total		41	100	41	100	

The results of analysis presented in Table 2 indicated that there was a change in the attitude towards the prevention of malnutrition among respondents for the better. Such finding can be observed in the comparison between scores before and after the "Implementation of

Public Health Program Model to Manage Malnutrition among Under-five Children in Purworejo District, Central Java". 26 Parents/caretakers had good attitude before implementation (63.4%) and 29 parents/caretakers had good perception after implementation (70.7%). It can be concluded that there was a significant difference in attitude before and after the "Implementation of Public Health Program Model to Manage Malnutrition among Under-five Children in Purworejo District, Central Java" (p-value=0.001).

Maternal attitude can influence the child's nutritional status. However, many other factors that can cause malnutrition, such as poverty, lack of knowledge and inappropriate child care patterns, as well as suboptimal feeding. Therefore, UNICEF Indonesia underlines the importance of education about nutrition so as to prevent malnutrition among children since good health education can influence a person's attitude towards an issue.¹⁵

h. Change in Perception towards Malnutrition

The third aspect evaluated was change in perception towards malnutrition. The results of the analysis on the evaluation of change in perceptions towards malnutrition can be observed in the following table 3:

Table 3 Evaluation of Change in Perception towards Malnutrition

No	Perception	Pre-test		Post-Test		p-value
		n	%	n	%	
1	Good	22	53.7	33	80.5	0.023
2	Poor	19	46.1	8	19.5	
Total		41	100	41	100	

The results of analysis presented in Table 3 indicated that there was a change in the perception towards malnutrition among respondents for the better. Such finding can be observed in the comparison between scores before and after the "Implementation of Public Health Program Model to Manage Malnutrition among Under-five Children in Purworejo District, Central Java". 22 Parents/caretakers had good perception before implementation (53.7%) and 33 parents/caretakers had good perception after implementation (80.5%). It can be concluded that there was a significant difference in perception before and after the

"Implementation of Public Health Program Model to Manage Malnutrition among Under-five Children in Purworejo District, Central Java" (p-value= 0.023).

Relationship between maternal perception and malnutrition among under-five children has become a research topic that has attracted the attention of health experts. A study conducted by Danumaya. A, et al. (2021) reported that wrong perception towards children's nutritional status was one of the factors that influenced malnutrition among under-five children since it could lead to the provision of inappropriate food and further had a negative impact on child growth and health. Meanwhile, according to experts, there are two types of malnutrition, namely underweight and overweight. Malnutrition can cause ongoing poverty. Although poverty contributes to malnutrition, lack of knowledge, poor childcare practices and inadequate child feeding also contribute to high rates of malnutrition.^{13,15,17}

Due to time constraints, the researchers could not do monitoring. However, it was

planned to be conducted by the village midwife and health cadres of Grantung Village, Bayan Sub-District, Purworejo District. Furthermore, the researchers had also made a special form to be used by the community, especially village midwives and health cadres for further monitoring.

This study had several limitations. The first limitation was time. The study time was quite short so that the model was implemented in a short time, especially regarding the evaluation. The evaluation until the behavioral changes stage could be conducted since behavioral changes can only be observed within an ideal time period of 6 months or at least 3 months after the intervention. Limited time also prevented the researchers from evaluating changes in the nutritional status of children involved in this study because ideally, changes in nutritional status could only be evaluated after 6-12 months after the evaluation. Moreover, monitoring stage after evaluation also could not be performed due to limited time.

The second limitation was funding. Funds for health research are quite large, especially research with interventions applied in this study from the initial stage, study process, to the final stage. The third limitation was the research bureaucracy which was less standardized. This study got approval from the Health Research Ethics Commission of Semarang State University and also research permission from the Purworejo District Government through the Investment Service and One Stop Integrated Services Office through a letter number Number: 562.42/209/2023. However, during the process in the field, the Village Officers still asked for another permit.

Conclusion and Recommendation

The results of the study revealed that the "Implementation of Public Health Program Model to Manage Malnutrition among Under-five Children in Purworejo District, Central Java" was effective to indirectly manage malnutrition among under-five children in Purworejo District through significant improvement in knowledge, attitude and

perception of parents/caretakers of under-five children. Such improvement is expected to influence the behavior/practice regarding fulfillment of children's nutrition for the better.

The expected final outcome is a decrease in the rate of malnutrition cases.

The model approach focuses on empowering families by involving various parties, including local government, health workers, and local communities who work together to monitor nutritional status and provide nutritional education to children and families.

The current study also highlights the importance of nutrition education for parents/caretakers and community members.

By increasing their understanding

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