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VCO-Prebiotics for Children's Nutrition: A Supplement-Based Approach to Overcoming Stunting with Housewife Partners as DASHAT Program Participants

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ABSTRACT

Stunting in children is a chronic malnutrition problem caused by a lack of nutritional intake for a long time, especially in the first 1,000 days of life. The prevalence of stunted children in West Sumatra is 25.2%, and in Padang City it is 19.5%, which shows a high stunting rate in Padang City. The Community service activities empower housewives to produce VCO with prebiotics as a nutritional supplement for stunted children in Bukik Karan Rawang Village, Padang City. Providing VCO supplements that contain good fats, prebiotics, and antioxidants improves children's digestive systems, increases their immunity, prevents them from infectious diseases, and supports the development of their brains and nervous systems. Technology transfer provides skills for mothers of stunted children to make their own VCO, and can also improve the family economy. The growth and development of stunted children improve, as indicated by measurable parameters such as increased height and weight, after they are given VCO with prebiotics. Weight gain between 1-1.8 kg, an average of 1.47 kg, and height between 2.2-7 cm, an average of 4.38 cm in stunted children. Education on diet and Parenting Patterns for stunted children is carried out by providing knowledge, training, nutritional counseling, and parenting to increase insight among mothers of stunted children about nutrition supplements and healthy and nutritious foods to achieve improved health. Providing VCO with prebiotics can enhance children's growth and development and improve their nutritional status to help overcome stunting.

Keywords: education, parenting, stunting, supplements, VCO-prebiotics

INTRODUCTION

Stunting is when a toddler has a length or height less than their age and gender as measured by the WHO child growth standards. Stunting is a chronic malnutrition problem caused by a lack of nutritional intake over a long period, especially in the first 1,000 days of life. Nutrition in the first 1000 days of life (fetus and infant 2 years) is important for brain development, body mass growth, body composition, and glucose, lipid, protein, hormone, and gene metabolism (Dewey, 2016; Thurstan et al., 2022). Stunting impacts low intelligence, affects the quality of human resources, and has a higher risk of developing chronic diseases in adulthood (Sudfeld et al., 2015; Vaivada et al., 2020). Stunting in developing countries is a multidimensional issue that requires integrated interventions to ensure children can achieve optimal growth and development (Prendergast & Humphrey, 2014). Many factors contribute to stunting in underdeveloped nations, including a diet

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heavy in high-calorie but low-nutrient staple foods and a deficiency in micronutrients such as protein, iron, zinc, and vitamin A. Environments with poor access to sanitation and clean water increase the risk of diarrheal diseases and parasitic infections, which can reduce nutrient absorption (Black et al., 2008; Victora et al., 2008). In many developing countries, poverty is a fundamental problem resulting from the inability of families to provide nutritious food. Low food security means that many families do not have stable access to food (Bhutta et al., 2020).

The government still fails to properly resolve this problem of stunting in Indonesia, where the 2022 Indonesian Nutritional Status Survey (SSGI) found that 21.6% of people are stunted. The prevalence in West Sumatra is 25.2%, and in Padang City it is 19.5%. (Padang City Population and Civil Registry 2023). As of September 2023, the Padang City Health Office recorded 1,268 children indicated as stunting based on e-PPGBM data from 55,800 toddlers inputted (Padang City Health Office, 2023). In 2024, the Padang City Government has targeted a stunting rate below 14%, together with the Padang City Women's Empowerment, Child Protection, Population Control, and Family Planning Service (DP3AP2KB). This effort aims to ensure that Indonesian children can grow and develop optimally and maximally, accompanied by emotional, social, and physical abilities that are ready to learn and can innovate and compete globally (Padang Public Information, 2024).

The Padang City Government has formed a program, DASHAT (Dapur Sehat Atasi Stunting), a community organization formed to overcome stunting. This activity is driven by the PKK of Padang City, Health Center, BKKBN, and the Village Head, and the PKK Team of Rawang Village as advisors/protectors, with an organizational structure consisting of the Head of the Working Group, secretary, and treasurer. The current condition of DASHAT is not optimal for serving stunted children, so the achievement in overcoming stunting is still very low, which is influenced by many factors, including the low level of maternal education and low and unstable family income, making it difficult to meet the family's nutritional needs. Through the Healthy Kitchen to Overcome Stunting (DASHAT) program in Bukik Karan, Rawang Padang Selatan sub-district, Padang City, it is hoped that it can change people's behavior in the family.

By providing a nutritious diet for children, particularly those who are at risk of stunting and come from disadvantaged homes, this program seeks to empower the community. This program is part of the Padang City Government's efforts to address the problem of stunting while maximizing programs such as Bangga Kencana and Kabertas. It is intended that stunting cases will be prevented as effectively as possible. (InfoPublik Padang, 2024). Stunting in children, which is a concern for DASHAT partners, is caused by poor eating patterns that result from an insufficiently nutritious diet, unbalanced nutrition due to a lack of food variety, and a food menu that lacks protein; these issues stem from mothers' limited knowledge about nutrition and healthy food. Poor parenting patterns in stunted children due to lack of attention and affection from parents, caused by the parents' busyness, earning a living, and good and proper child care, are still not understood. The main cause is the low level of education of the mother of the stunted child. Parents of stunted children who are members of DASHAT mostly have low and irregular incomes, so they cannot provide a decent environment and place to live. Small, narrow, dirty houses that lack sanitation and access to clean water do not provide security and comfort for children's growth and development; this situation also contributes to stunting in children. To improve the achievement of overcoming stunting, the PKM team collaborates with DASHAT as a partner in implementing PKM. VCO supplements contain prebiotics, beneficial fats, and antioxidants, intending to improve the digestive system, increase body resistance (immunity), protect children from infectious diseases, and help brain and nervous system development (Syukur et al., 2017; Intahphuak et al., 2010).

VCO is rich in MCFA, such as lauric acid, which is easily absorbed by the body and can provide fast energy. Lauric acid also has antimicrobial properties that support digestion for health and are useful for nutrient absorption in stunted children. (Dayrit, 2015; Marina et al., 2009). VCO aids in the absorption of fat-soluble vitamins (A, D, E, and K), which are essential for bone growth and body metabolism, help protect body cells from free radical damage, and support the child's immune system (Prasanna et al., 2024; Nitbani et al., 2022). Stunted children frequently encounter digestive disorders like malabsorption or intestinal infections, which VCO helps to improve. The antimicrobial content in VCO can help maintain digestive tract health.

Improves Nutritional Status in children, if given together with a diet high in protein, vitamins, and minerals, VCO can support improvements in children's nutritional status (Iswati & Nuraini, 2023; Marina et al., 2009). Technology transfer provides skills for mothers of stunted children to make their VCO a family supplement nutrient, and can also improve the family economy. VCO, which will be given as a supplement, has obtained 3 patents (Prof. Dr. Sumaryati Sukur), namely, 1) in the fermentation process (No: S00201707002), 2) VCO composition (No: S00201707004), and 3) BioPhytoMega trademark (No: D002017051363).

METHOD

Community service activities to overcome stunting in collaboration with DASHAT (Healthy Kitchen to Overcome Stunting) partners in Bukik Karan, Rawang Village, South Padang, Padang City. Housewives with stunted children attended the activity, which included 15 stunted children aged 2-4 years. The activity began with an interview with the mother of a stunted child regarding the eating habits and parenting patterns that the mother has applied to her child, the child's birth history, the provision of exclusive breastfeeding and complementary feeding to the child, as well as data on the mother's education and family income.

Providing a nutritious food menu and VCO supplements with prebiotics

Providing nutritious food to stunted children with a balanced menu, sufficient nutritional intake, and a varied menu according to the needs of stunted children. The food on the menu contains high protein (eggs, various types of fish, chicken, and meat). The lipid needs of stunted children can come from plants (soybeans, avocados, coconut oil) and animal lipids (meat/fish/chicken, dairy products), vitamins, and minerals from vegetables and fruits. The stunted child menu program consists of breakfast, lunch, and dinner with a balanced menu rich in nutrition. To complete the nutritional needs of stunted children, VCO supplements with prebiotics will be added to increase digestibility and overcome malnutrition, thereby increasing the weight gain and height of stunted children, the immunity of stunted children to prevent infection, and increasing brain and nerve development of stunted children. Providing VCO routinely on the menu, as much as once a day, 1 tablespoon for 2 months, is enough for stunted children to be healthy and well-nourished.

Socialization of stunting children's eating patterns

Providing knowledge (education) on food nutrition for stunted children to housewives who are members of DASHAT partners regarding the importance of knowledge about nutritious food, adequate nutritional intake, varied menus, and healthy and nutritious food processing for family members, especially toddlers, pregnant women, and those who are breastfeeding. Socialized foods are known for their high nutritional value, and they provide

benefits from supplements, particularly VCO. It is important to incorporate VCO into the family's daily menu as a supplement to enhance the nutritional status of stunted children in a short period. This activity is carried out in two ways, namely: (1) providing balanced nutritious food according to the child's growth conditions, (2) introducing balanced food and food processing to maintain the nutritional value of food, and (3) introducing prebiotic VCO as a nutritional supplement for stunted children. And materials, tutorials, and nutritional consultations. We provide education on the significance of consuming nutritious food for maintaining health, fostering child growth and development, enhancing intelligence, and bolstering disease resistance.

Socialization of parenting patterns for stunting children

Providing education and counseling on parenting patterns for parents of stunted children. Parenting education is to increase parents' understanding and proficiency in raising children, including enhancing parenting styles to overcome stunting. Giving children access to DASHAT encourages early childhood stimulation, observed growth, and development. The first steps in the family's vital involvement in managing the stunting issue are psychosocial stimulation and parenting strategies. The role of the family is important to help overcome the problem of stunting; it starts with implementing parenting patterns and psychosocial stimulation. Parenting patterns should begin in the first 1000 days of life. Nutrition in the first 1000 days of life (fetus and 2-year-old baby) is crucial and can be achieved by improving the nutritional quality of pregnant and lactating mothers. Good baby care includes allowing the child to breastfeed exclusively for six months without introducing other foods, and ensuring that the baby is fed according to proper guidelines with sufficient nutrition, essential for the child's growth and development.

Socialization of the benefits of VCO with prebiotics

Socializing food with high nutritional content and VCO nutritional supplements with prebiotics and providing knowledge about VCO content is beneficial for improving family nutrition, especially for children. Enhancing housewives' understanding of food ingredient processing techniques will help preserve nutritional value, particularly regarding VCO as a nutritional supplement. Awareness about nutrition led mothers of stunted children to use VCO in their daily diet.

Determination of nutritional status of stunting children

The determination of children's nutritional status is based on anthropometric index values, specifically weight-for-age, height-for-age, or weight-for-height, in comparison to the WHO-NCHS reference values. This indicator will be used to observe the success of VCO-prebiotics as a nutritional supplement that can improve the nutritional status of toddlers from undernutrition and chronic malnutrition to excellent nutrition status and increase the height and weight of stunted children. After providing nutritious food and prebiotic VCO supplements, height and weight measurements were taken every 2 weeks, and data were collected to observe the pattern of height and weight increase to determine the nutritional status of stunted children.

RESULTS AND DISCUSSION

Initial data on stunting children

At the beginning of the activity, respondent data were recorded to obtain information about the condition of stunted children before providing nutritious food and prebiotic VCO. Data collection, namely age, weight, and height, was conducted to determine the level of

stunting in children at the beginning of the activity. The results were obtained as shown in Table 1. Based on the classification of nutrition status assessment based on the anthropometric index according to the nutritional status category in the WHO Child Growth Standards for children aged 0-5 years, the initial data of 15 selected respondent children from DASHAT partners Bukik Karan, Rawang Village, South Padang District, and Padang City are based on the anthropometric index of all respondents, including stunted children.

Table 1. Initial data on height and weight measurements of stunted children

No.	Child Name	Age (Month)	Body Weight (Kg)	Height (cm)
	Girl			
1	Toddler 1	47	12.2	93.6
2	Toddler 2	46	10.5	89
3	Toddler 3	32	10.1	84
4	Toddler 4	48	11	92.8
5	Toddler 5	58	13.5	99.6
6	Toddler 6	21	7.8	77.5
7	Toddler 7	42	11.2	100.3
8	Toddler 8	49	12.5	100.3
9	Toddler 9	37	9.7	88
	Boy			
10	Toddler 1	27	11.4	88
11	Toddler 2	37	10.1	85.5
12	Toddler 3	28	7.8	77
13	Toddler 4	33	10.4	85.6
14	Toddler 5	24	9.4	81
15	Toddler 6	37	10.5	83.2

The stunted children who will be included consist of 9 girls and 6 boys aged between 2 and 4 years. In children who experience stunting, there is a close relationship between weight and height because both are important indicators for assessing their nutritional status and growth (Mulyaningsih et al., 2021).

Body weight index by age (BW/A)

This BW/A index describes the relative weight compared to the child's age. This index is crucial for identifying children at risk for health issues related to their weight. By monitoring the Body Weight Index by Age, caregivers and healthcare professionals can implement appropriate nutritional and developmental interventions to support the child's growth and well-being. It is important to note that a child with low BB/U is likely to experience growth problems. The weight of stunted children can vary: Normal or nearly age-appropriate weight: Even though height lags, a child's weight may still be appropriate for his or her height, making him or her appear "proportionately short."

However, this often masks chronic nutritional deficits. Many stunted children underweight also experience wasting (acute malnutrition), which results in low weight for their height. Stunted children weigh less than, ideal weight for their age, but their measurements can vary depending on the severity of stunting and other nutritional conditions. Based on the weight index according to age, the nutritional status of children is obtained based on the Z score from anthropometry as follows: of the 15 stunted child respondents, there are 6 children with very low body weight, 8 children with low body weight, and 1 child is normal, as seen in Table 2.

Table 2. Body weight according to age (BB/A) determines nutritional status based on the Z score from Anthropometry

No.	Child Name	Age (months)	Body Weight (Kg)	Nutritional Status	Threshold (Z-score)
	Girl				
1	Toddler 1	47	12.2	underweight	-3SD-sd-2SD
2	Toddler 2	46	10.5	Very underweight	-3SD
3	Toddler 3	32	10.1	underweight	-3SD-sd-2SD
4	Toddler 4	48	11	Very underweight	-3SD
5	Toddler 5	58	13.5	underweight	-3SD-sd-2SD
6	Toddler 6	21	7.8	Very underweight	-3SD
7	Toddler 7	42	11.2	underweight	-3SD-sd-2SD
8	Toddler 8	49	12.5	underweight	-3SD-sd-2SD
9	Toddler 9	37	9.7	Very underweight	-3SD
	Boy				
10	Toddler 1	27	11.4	Normal	-2SD-sd-1SD
11	Toddler 2	37	10.1	Very underweight	-3SD
12	Toddler 3	28	7.8	Very underweight	-3SD
13	Toddler 4	33	10.4	underweight	-3SD-sd-2SD
14	Toddler 5	24	9.4	underweight	-3SD-sd-2SD
15	Toddler 6	37	10.5	Underweight	-3SD-sd-2SD

Height index by age (H/A)

The H/A index describes a child's height growth based on their age. Long-term malnutrition or frequent illness can cause short children (stunted) or very short children (severely stunted) to appear on this index. Table 3 data shows that there are 4 very short children, 8 short children, and 3 normal children. Stunting and wasting ultimately result in poor child growth and development. Most children suffer from anemia, and their height and weight fall below WHO growth standards. Housewives' knowledge of nutrition and diet is lacking, and poor dietary intake results in poor children's growth (Thurstan et al., 2022).

Body weight index by length and height (BW/H)

This BW/H index describes whether a child's weight is appropriate for their height/length growth. This index can be used to identify children with malnutrition (wasted), severe malnutrition (severely wasted), and children who have a possible risk of being overweight. Based on the Z-score, the nutritional status of children in the initial data collection was 3 people with malnutrition, 8 people with malnutrition, and 4 people with normal (Table 4). Malnutrition is usually caused by disease and acute or chronic lack of nutritional intake (Sudfeld et al., 2015; Dewey, 2016). Weight data is obtained by weighing the child using a digital scale and measuring the child's height using a laser sensor height meter to get more accurate weighing and height measurement data (Figure 1).



Figure 1. The activity of weighing and measuring the height of stunted children

Table 3. Height according to age (H/A) determines nutritional status based on the Z score from Anthropometry

No.	Child Name	Age (months)	Height (cm)	Nutritional status	Threshold (Z-score)
	Girl				
1	Toddler 1	47	93.6	Short	-3SD-sd-2SD
2	Toddler 2	46	89*	Very Short	-3sd
3	Toddler 3	32	84	Short	-3SD-sd-2SD
4	Toddler 4	48	92.8	Short	-3SD-sd-2SD
5	Toddler 5	58	99.6	Short	-3sd-sd-2SD
6	Toddler 6	21	77.5	Short	-3SD-sd-2SD
7	Toddler 7	42	100.3	Normal	-2SD-sd-1SD
8	Toddler 8	49	100.3	Normal	-2SD-sd-1SD
9	Toddler 9	37	88	Short	-3SD-sd-2SD
	Boy				
10	Toddlers 1	27	88	Normal	-2SD-sd-1SD
11	Toddler 2	37	85.5	Very Short	-3SD
12	Toddler 3	28	77*	Very Short	-3SD
13	Toddler 4	33	85.6	Short	-3SD-sd-2SD
14	Toddler 5	24	81	Short	-3SD-sd-2SD
15	Toddler 6	37	83.2*	Very Short	-3SD

*Very short below the lowest standard of Anthropometrics

Table 4. Body weight according to height to determine nutritional status based on the Z score from anthropometry

No.	Child Name	Age (months)	BW (Kg)	Height (cm)	Nutritional status	Threshold (Z-score)
	Girl					
1	Toddler 1	47	12.2	93.6	Malnutrition	-3SD-sd-2SD
2	Toddler 2	46	10.5	89	Malnutrition	-3SD-sd-2SD
3	Toddler 3	32	10.1	84	Normal	-2SD-sd-1SD
4	Toddler 4	48	10.9	92.8	Malnutrition	-3SD-sd-2SD
5	Toddler 5	58	13.5	99.6	Malnutrition	-3SD-sd-2SD
6	Toddler 6	21	7.8	77.5	Malnutrition	-3SD-sd-2SD
7	Toddler 7	42	11.2	100.3	Malnutrition	-3SD
8	Toddler 8	49	12.5	100.3	Malnutrition	-3SD-sd-2SD
9	Toddler 9	37	9.7	88	Malnutrition	-3SD
	Boy					
10	Toddlers 1	27	11.4	88	Normal	-1SD-sd+1SD
11	Toddler 2	37	10.1	85.5	Malnutrition	-3SD-sd-2SD
12	Toddler 3	28	7.8	77	Malnutrition	-3SD
13	Toddler 4	33	10.4	85.6	Normal	-1SD-sd+1SD
14	Toddler 5	24	9.2	81	Malnutrition	-3SD-sd-2SD
15	Toddler 6	37	10.5	83.2	Normal	-1SD-sd+1SD

Data from observation results of mothers of stunting children

From the interview results, data were obtained on education, income, children's diet, and parenting patterns of stunted children. Mothers of stunted children have varying levels of education, ranging from elementary school to undergraduate level; generally, they are housewives who do not work. The family has a low income of between 1 and 3 million. Poor diet, due to insufficient nutrition, unbalanced nutrition, and a diet lacking in protein, is the main cause of stunting in children. Poor parenting and lack of attention and affection mean children grow up without good and proper care.

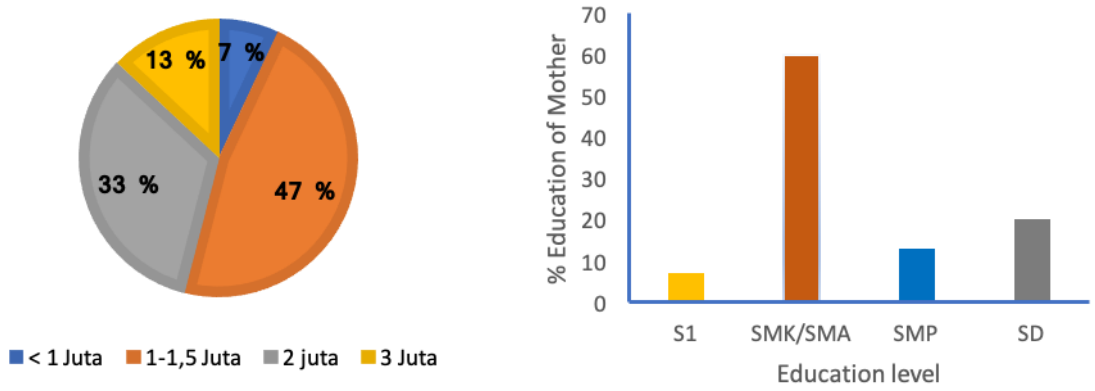


Figure 2. Percentage comparison of income/month and education level of mothers of stunted children

The effect of the administration of VCO-prebiotics on stunting children

Based on the evaluation of the weight and height of stunted children, there was an increase in weight and height as seen in Table 5 compared to the initial weight and height of stunted children. VCO-prebiotics cause this increase in weight and height and help optimize nutrient absorption. Prebiotics can prevent malnutrition in stunted children with the presence of beneficial bacteria in the intestines, namely Lactobacillus, which is added to VCO during the fermentation process (Havenaar et al., 2012; Nitbani et al., 2022). VCO is abundant in medium-chain fatty acids (MCFA), including lauric acid, which the body readily absorbs and provides rapid energy. Lauric acid also has antimicrobial properties that support digestive health for nutrient absorption in stunted children (Iswati & Indria, 2023). The results show that stunted youngsters' weight and height increased following six weeks of VCO treatment. Based on the Z-score from anthropometry, the nutritional status of stunted children improved. Before the administration of VCO, there were three malnourished children, eight undernourished children, and four normal individuals.

Three malnourished children became undernourished, while eight malnourished children became normal. VCO treatment was continued until all stunted children had normal nutritional status because, although there were no more malnourished children after it was administered, there were still three undernourished children, as shown in Table 6.

Education of diet patterns for stunted children

Education on diet patterns for stunted children is crucial in promoting their growth and development. By understanding the nutritional needs and incorporating a balanced diet, caregivers can significantly improve the health outcomes of these children. By equipping mothers with this knowledge, we can improve the overall health and development of their children, ensuring they receive the necessary nutrients for growth and well-being. This education also promotes better dietary habits within the family,

creating a supportive environment for healthier lifestyles. Mothers of stunted children already know foods that have high nutritional value, and the benefits of supplements, especially VCO, are accustomed to consuming VCO as a supplement in the family's daily menu to improve the nutritional status of stunted children in a short period. Providing nutrition material at meetings and consultations with mothers of stunted children can help address their concerns about the causes of stunting.

Table 5. Initial body weight and height were compared after being given VCO prebiotics

No.	Child name	Body weight (Kg)		Height (cm)	
		Beginning	VCO-prebiotic	Beginning	VCO-prebiotic
	Girl				
1	Toddler 1	12.2	14	93.6	98
2	Toddler 2	10.5	12.8	89	94.2
3	Toddler 3	10.1	11,8	84	88.5
4	Toddler 4	11	12.8	92.8	96.2
5	Toddler 5	13.5	14.5	99.6	101.8
6	Toddler 6	7.8	9.3	77.5	80.5
7	Toddler 7	11.2	12.9	100.3	103
8	Toddler 8	12.5	14	100.3	102.8
9	Toddler 9	9.7	11.1	88	93
	Boy				
10	Toddler 1	11.4	13.2	88	94
11	Toddler 2	10.1	11.9	85.5	92
12	Toddler 3	7.8	8.7	77	84
13	Toddler 4	10.4	12	85.6	90.7
14	Toddler 5	9.2	10.5	81	85
15	Toddler 6	10.5	11.5	83.2	87.5

Table 6. Body weight according to height to determine nutritional status based on Z score from Anthropometry after administration of VCO-prebiotics

No.	Child Name	Age (months)	BB (Kg)	TB (cm)	Nutritional status	Threshold (Z-score)
	Girl					
1	Toddler 1	47	14	98	Normal	2SD-SD-1SD
2	Toddler 2	46	12.8	94.2	Normal	2SD-SD-1SD
3	Toddler 3	32	11.8	88.5	Normal	-1SD-sd+1SD
4	Toddlers 4	48	12.8	96.2	Normal	2SD-SD-1SD
5	Toddler 5	58	14.5	101.8	Normal	-1SD-sd+1SD
6	Toddler 6	21	9.3	80.5	Normal	2SD-SD-1SD
7	Toddler 7	42	12.9	103	Malnutrition	-3SD-sd-2SD
8	Toddler 8	49	14	102.8	Normal	-1SD-sd+1SD
9	Toddler 9	37	11.1	93	Malnutrition	-3SD-sd-2SD
	Boy					
10	Toddlers 1	27	13.2	94	Normal	-1SD-sd+1SD
11	Toddler 2	37	11.9	92	Normal	2SD-SD-1SD
12	Toddler 3	28	8.7	82	Malnutrition	-3SD-sd-2SD
13	Toddler 4	33	12	90.7	Normal	-1SD-sd+1SD
14	Toddler 5	24	10.5	85	Normal	-2SD-sd-1SD
15	Toddler 6	37	11.5	87.5	Normal	-1SD-sd+1SD



Figure 3. Nutrition counseling activities, healthy food processing, and provision of VCO to mothers of stunted children

The Education of VCO-prebiotics as a supplement for stunting children

The education of VCO-prebiotic nutritional supplements can increase the knowledge of mothers of stunted children about VCO, with prebiotics being used as a supplement in the family's daily menu to improve and enhance the nutritional quality for family members, especially for toddlers who experience stunting. VCO with prebiotics can help stunted children get better nutrition faster than other foods because it has prebiotics that prevent malnutrition, antioxidants that strengthen the immune system against infections, and healthy fats that support the development of the brain in toddlers. After all, they have omega-3 fatty acids (ALA, EPA, and DHA) (Marina et al., 2009; Armaini et al., 2020). DASHAT partners provide VCO as a nutritional supplement to stunted children suffering from malnutrition, including severe malnutrition.



Figure 4. Education of VCO-prebiotics and provision of VCO for stunted children

Education of parenting patterns for stunting children

Providing education and counseling on parenting patterns for parents of stunted children increases the knowledge and skills of parents in implementing appropriate parenting for children, including improving parenting patterns to prevent stunting. Healthy Kitchens to Overcome Stunting (DASHAT) provides access to early childhood resources that promote stimulation and monitor child growth and development. The family's role is crucial in addressing the stunting problem, with implementation starting with effective parenting patterns and psychoeducation. Parents of stunted children should be aware that effective parenting patterns need to begin in the first 1000 days of life (HPK). Nutrition in the first 1000 days of life (fetus and 2-year-old baby) is critical to improve and can be done by improving the nutritional quality of pregnant and lactating mothers. Good care for babies includes allowing the child to breastfeed exclusively for six months without introducing other foods, and ensuring that the baby is fed according to proper guidelines with sufficient nutrition, essential for the child's growth and development.



Figure 5. Education of parenting patterns, diet patterns, and clean water and sanitation

CONCLUSION

The growth and development of the health of stunted children improve as their nutritional status increases, leading to healthier children who experience growth in height and weight after being given VCO-prebiotic. Education about dietary patterns is crucial for empowering parents regarding their children's nutrition. By understanding the importance of a balanced diet and proper feeding practices, caregivers can significantly contribute to their child's overall health and well-being. This program increases mothers' knowledge about nutritional supplements, healthy and nutritious foods, food processing methods, and menu variations that can improve their health and nutritional status. Additionally, education on parenting practices for stunted children enhances parents' skills in implementing effective parenting strategies to prevent stunting and increased the knowledge and skills of parents of stunted children in implementing appropriate parenting for children to prevent growth retardation.

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