

Nutrition Disc as Media for Increasing Skills of Integrated Health Post Cadres at Jaten II Community Health Center, Karanganyar, Central Java, Indonesia

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ABSTRACT

Background: Stunting is the main nutritional problem faced by children in Indonesia. Nutrition discs can be used as one of the first steps to detect children with stunting. This study aimed to find whether nutrition discs are an effective medium for improving the measurement skills of health cadres to detect stunting early.

Subjects and Method: This was a quasi-experimental study conducted in the Jaten II Community Health Center, Karanganyar, Central Java, from September 2022 to February 2023. A sample of 33 health cadres was selected using total sampling. The dependent variable was cadre skills. The independent variable was nutritional disc media. The instrument in this study used a questionnaire sheet containing 10 numbers regarding stunting knowledge and 25 numbers regarding anthropometric measurement skills. The data were examined using Wilcoxon sign rank test run on SPSS IBM 25.

Results: The results of the univariate analysis showed that most of the respondents were aged 40-60 years (78.8%) with a high school educational background, 18 people (54.5%), 18 people (54.5%) had been cadres for 2-10 years and 24 people (72.7%) were not working. Bivariate analysis using the Wilcoxon sign rank test showed $p=0.001$ (OR=0.35; RR= 0.77 to 1.11; CI 95%).

Conclusion: Nutrition discs are an effective medium for improving the measurement skills of health cadres to detect stunting early.

Keywords: Anthropometry, health post cadres, nutrition disc, skills, stunting

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BACKGROUND

Stunting is still a nutritional problem highlighted by the government. Stunting is caused by inadequate nutrition and nutri-

tional intake, wrong parenting patterns due to the mother's lack of knowledge during pregnancy and breastfeeding, poor environmental sanitation, lack of clean water facili-

ties, and limited access to health facilities. (Aryu Candra, 2020; Rahmadhita, 2020). Stunting give an impact on physical growth, cognitive development, intelligence level, and immunity, and reduces the quality of a country's human resources (Yadika et al., 2019). Children with stunting will experience stunted and irreversible growth (Daracantika & Ainin, 2021). The impact of stunting can last a lifetime and will influence from generation to generation (Gani et al., 2020). Apart from that, it is very likely that children who experience stunting will grow up to be unhealthy and poor individuals. (Yadika et al., 2019)

Indonesia is included in the list of countries with chronic stunting rates based on WHO standards which state that "a public health problem can be considered chronic if the prevalence of stunting is more than 20% (Ministry of Health of the Republic of Indonesia, 2022). The prevalence of stunting in Indonesia will reach 21.6% in 2022, although this figure has decreased compared to 2021 which reached 24.4%, stunting in Indonesia still requires more attention. The Indonesian government has a target to reduce the stunting rate by 7.6% to 16.8% (BKKBN, 2020).

Central Java Province is ranked 20th nationally with a stunting prevalence reaching 20.8% in 2021. Karanganyar Regency is the 13th district out of 35 districts/cities in Central Java with a stunting rate of 20.3% (Ministry of Health of the Republic of Indonesia, 2022). Jaten II Community Health Center is one of the community health centers with a fairly high number of stunting, namely 79 children (Jaten II Community Health Center, 2021).

The government has issued several regulations as a form of effort to reduce stunting. RI Presidential Regulation No. 72 of 2021 concerning the Acceleration of Reducing Stunting contains a national

strategy involving ministries/institutions, provincial regional governments, district/city regional governments, village governments, and stakeholders. BKKBN has issued regulation No. 12 of 2021 concerning the National Action Plan for the Acceleration of Reducing Stunting Rates in Indonesia 2012 - 2024 which includes a specific and sensitive nutritional intervention framework in overcoming stunting with a multi-sector and multi-stakeholder approach. Medical management of stunting cases has been regulated in national guidelines through the Republic of Indonesia Minister of Health Decree No.HK.01.07/MENKES/1928/2022 (Permenkes No 12 Tahun 2022).

The government continues to strive to reduce stunting rates through several health policies, including the Healthy Indonesia program with a family approach, providing additional food to pregnant women, providing additional food in the form of animal protein (eggs, fish, chicken, meat, milk) to children aged 6-24 months. and the first 1000 days of life. Massive distribution of information on stunting reduction has been carried out through various government and private institutions in the form of counseling both verbally and in writing. One form of counseling is the Stunting-Free ABCDE message which includes actively taking blood supplement tablets (A), pregnant women regularly having pregnancy checks at least 6 times (B), consuming enough animal protein (C), coming to the integrated healthcare center every month (D), Exclusive Breast milk 6 months (E)(Permenkes No 12 Tahun 2022).

Efforts that have been made by the government to reduce stunting rates have several obstacles, including the attitude of people who are embarrassed and do not come to integrated healthcare centers because their children are stunted, pregnant women who are at a young age with low

levels of education, lack of education regarding sexual and reproductive health in adolescents. girls and women of child-bearing age, lack of concern for the environment, so environmental cleanliness is disturbed which can affect each other's survival thereby impacting the health of its citizens (Candra, 2020; Sunarto, 2018).

Another inhibiting factor is that there are still several religious groups with certain beliefs that do not want to take certain medicines that can help improve nutrition or treat certain diseases. These religious groups believe that these medicines cannot be guaranteed to be halal because they think that medicines Nowadays, it is produced by people who do not belong to the same religion as them, so their halal cannot be ascertained. The final factor is that there are still some integrated healthcare center that do not yet have measuring instruments that meet the standards or already have them but there is damage/imperfections in them. The tools for measuring the weight/height of toddlers are an important factor, if the tools used to measure are damaged/not yet in accordance with the standards. it will have an impact on the measurement results (Wulandari et al., 2020; Rahmadhita, 2020).

Based on a preliminary study conducted at the Jaten II Community Health Center in 2021, there were 105 stunted toddlers. (Jaten II Community Health Center, 2021), where the total number of stunted toddlers in Karanganyar Regency is still 4.5% or 2,206 children (Karanganyar Health Department, 2021). This is not in line with the target of reducing stunting in Indonesia, so there is a need for innovation in preventing stunting, namely by providing nutritional disc media to health cadres to increase knowledge of early detection of stunting in toddlers.

SUBJECTS AND METHOD

1. Study Design

This research is a cross-sectional study with a quasi-experimental design conducted in the Jaten II Community Health Center Work Area in September-February 2023.

2. Population and Sample

The population of this study was health cadres in the Jaten II Community Health Center Working Area. The sample was selected by total sampling and obtained a sample size of 33.

3. Study Variables

The dependent variable in this research is cadre skills, while the independent variable: is nutritional disc media.

4. Operational Definition of Variables

Cadre skills are the ability of an integrated healthcare center cadre to carry out anthropometric measurements and classify children's nutritional status.

Nutrition discs are discs that can be rotated and contain classifications of children's nutritional status by categorizing the child's height and age.

5. Study Instruments

The instrument in this study used a questionnaire sheet containing 10 numbers regarding stunting knowledge and 25 numbers regarding skills.

6. Data analysis

Univariate analysis to provide an overview of respondents' characteristics in the form of education level, age, length of time as a cadre, employment status and knowledge about stunting using Ms. Excel 2019. Bivariate analysis to determine differences in cadre skills before and after counseling and providing stunting nutrition discs was examined using Wicoxon test.

7. Research Ethics

This research has been granted a research permit and meets the applicable requirements at DPMPTSP Karanganyar with number: 071/222/IX/2022.

RESULTS

1. Sample Characteristics

Table 1 reported that the characteristics of the respondents were mostly 40-60 years old (78.8) with a high school education

level (54.5%) and 2-10 years as a cadre (54.5%) with non-working status (72.7%) and have good knowledge about stunting (54.5%).

Table 1. Sample characteristics of integrated health post cadres at Jaten II Community Health Center

Characteristics	Category	Frequency	Percentage
Age	< 40 years old	5	15.2%
	40-60 years old	26	78.8%
	> 60 years old	2	6.1%
Education	Elementary school	1	3%
	Junior high school	10	30.3%
	Senior high school	18	54.5%
	Bachelor	4	12.1%
Long time as a cadre	< 2 years	3	9.1%
	2 to 10 years	18	54.5%
	> 10 years	12	36.4%
Job-status	Working	9	27.3%
	Non-Working	24	72.7%
Stunting Knowledge	Good	18	54.5%
	Poor	15	45.5%

2. Bivariate Analysis

Table 2. Determinants of (an analysis by wilcoxon sign rank test)

Groups	Cadre Skills				OR	Mean	SD	p
	Poor		Good					
	N	%	N	%				
Pre-intervention	24	72.7%	77	27.3%	0.35	22.88	1.11	0.001
Post-intervention	16	48.5%	7	51.5%		23.30	0.77	

Based on Table 2, 72.2% of cadres had poor skills before the nutritional disc intervention, while 51.5% showed good skills afterward. This indicates that the intervention improved cadre skills by 0.35 times compared to before, with statistical significance (OR= 0.35; p= 0.001).

measurements to ensure optimal improvements (Mamik, 2019; Restu, 2022).

Skills are the application of knowledge, so a person's skill level is related to the level of knowledge. The cadre's knowledge about nutrition discs is important because good knowledge tends to improve the quality of the cadres' work. A good level of knowledge in integrated healthcare center cadres means that cadres have the ability to implement knowledge related to nutrition discs better so that they can improve their skills and be able to work optimally in integrated healthcare centers, especially regarding growth and development. (Rahayu et al., 2022).

DISCUSSION

Stunting, a growth delay caused by factors such as inadequate nutrition, poor parenting, unsanitary conditions, and limited access to healthcare, is critical to detect early for effective nutritional intervention (Candra, 2020; Sunarto, 2018). Early detection relies on skills in anthropometric

Knowledge is influenced by several factors, including education level, where higher education correlates with better knowledge and easier acceptance of new concepts; age, which brings maturity in thinking and working; and experience, which enhances maturity in decision-making. Skills, on the other hand, are directly influenced by motivation, which drives a person to take action, and expertise, which equips them with the capability and proficiency to perform tasks effectively (Hidayatun et al., 2018).

The findings of this study align with Islami & Agustiansyah (2018), which state that modifying nutrition discs is effective in improving cadres' skills in determining toddlers' nutritional status. After receiving education and demonstrations on the discs' use, cadres showed a significant increase in knowledge and skills, with notable differences observed before and after using the nutrition disc (Mahmudah and Sari, 2020; Sari and Mahmudah, 2020).

The Nutrition Disc is a practical and easy tool to determine the nutritional status and health of children and adults. This tool has three categories for determining normal or abnormal nutritional status, namely upper limit, ideal, and lower limit. Nutrition discs can also be used for nutrition and health education. The nutritional disc copyright is owned by Indonesian Food Nutrition and linisehat.com (Islami & Agustiansyah, 2018). Based on previous research, the results showed that the use of color and media shapes is known to attract the attention of cadres. As many as 60% of cadres like the color in the media and 40% really like it. The discs have different image designs and colors on each side, apart from that, the differences in color use are also based on gender and age, so that they can attract the attention of the user (Putri and Putri, 2018; Rahayu et al., 2022).

A study by Efrina et al. (2023) tested five types of nutritional discs across age groups: 0-12 months, 12-24 months, 24-36 months, 36-48 months, and 48-60 months. The tests showed a 9% increase in participants with good knowledge and a 47.4% increase in those with sufficient knowledge (Sefrina et al., 2023).

A study by Islami and Agustiansyah (2018) found that modifying the nutrition disc effectively improves cadre skills in determining nutritional status, allowing for early detection of nutritional problems in children. Similarly, Rahayu et al. (2022) demonstrated significant skill improvements following intervention ($p = 0.001$).

Research indicates that providing nutritional discs to health cadres has led to increased efforts in stunting prevention. The intervention showed a rise in the average score from 22.88 before using the discs to 23.30 afterward, demonstrating an improvement in mothers' skills in assessing children's nutritional status. This suggests that nutrition discs are an effective tool for enhancing health cadres' abilities to detect stunting early.

The study's limitations include a small sample size of 33 respondents and the lack of formal training among participants, which may not accurately reflect the real situation. Future research should involve a larger sample and ensure that participants receive formal training to improve data accuracy.

AUTHORS CONTRIBUTIONS

All authors share tasks and contribute to each other in the research and writing of this article

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CONFLICT OF INTEREST

No conflict of interest.

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