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The Effect of Health Counseling on Maternal Knowledge Regarding Stunting: Pre-experimental Study

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ABSTRACT

Introduction: Education plays a crucial role in empowering mothers with the knowledge necessary to optimize the care and development of their toddlers. Understanding the impact of health education on maternal knowledge is essential to improve health outcomes for young children and support effective parenting practices.
Objective: This study aims to analyze the effect of health education on the knowledge levels of mothers with toddlers.
Method: This study employed a pre-experimental design using a one-group pre-test and post-test approach. The population consisted of mothers with children under five years old (toddlers), with a sample of 33 participants selected through accidental sampling. The study was conducted in Wado, Sumedang Regency, from March 20 to April 20, 2024. Data analysis was performed using the Wilcoxon signed-rank test to evaluate the effect of health education on maternal knowledge.
Result: The results of this study indicated an increase in the knowledge of mothers with toddlers, from a moderate category (48.5%) to a good category (90.9%). The P-value obtained was 0.000 (< 0.05), indicating a significant effect of health education on stunting prevention on maternal knowledge.
Conclusion: This study concludes that health education significantly enhances maternal knowledge about stunting prevention, with a shift from moderate to good understanding. These findings highlight the effectiveness of health education as a key intervention in improving maternal awareness. Integrating structured health education programs into community healthcare strategies is essential to reducing stunting prevalence and promoting better child health outcomes.

Keywords: health education, maternal knowledge, stunting prevention

Introduction

Stunting remains a priority issue in addressing health problems among children under five years old (Rusana et al., 2023). According to WHO in 2022, approximately 148.1 million children under the age of five worldwide, representing 22.3% of the total under-five population, were affected (World Health Organization, 2023). Indonesia ranks second in Southeast Asia for the highest stunting cases, with a prevalence of 31%, following Timor-Leste (Asia Development Bank, 2022). Although the prevalence of stunting in Indonesia, as reported by the Indonesian Nutritional Status Survey, decreased from 24.4% in 2021 to 21.6% in 2022, this achievement still falls short of the national target of 14% (Kementerian Kesehatan RI, 2022 ; Tarmizi, 2023).

According to the Ministry of Health of the Republic of Indonesia (2022), data from the Indonesian Nutritional Status Survey in 2022 shows that the prevalence of stunting in children under five (height-for-age) in West Java Province is 20.2%, with Sumedang Regency having the highest stunting rate compared to other regions in West Java, at 27.6% (Kementerian Kesehatan RI, 2022). Meanwhile, the number of toddlers in Wado Village, according to the electronic application for Community-Based Nutrition Reporting and Recording (e-PPGM) in 2023, reached 322 toddlers, with 13 cases of stunting. This indicates a gap in knowledge among mothers regarding stunting prevention (Kementerian Kesehatan RI, 2024).

The impact of stunting on toddlers will hinder cognitive development from an early age into adulthood. Short-term effects of stunting in toddlers include delays in sensory and motor development, body metabolism, and physical growth (Nurapandi *et al.,* 2022). Additionally, it increases the risk of higher morbidity and mortality rates, hinders national economic growth and development, contributes to rising poverty levels, and exacerbates social inequalities (Harleni *et al*., 2022 ; Wulandari et al., 2022).

The factors contributing to stunting include education, family economic status, maternal nutrition status during pregnancy, sanitation and environment, low birth weight (LBW), and lack of knowledge among mothers and families (Hikmah & Sunarsih, 2024). Insufficient maternal knowledge is one of the key factors leading to nutritional deficiencies that result in stunting (Kuswanti & Azzahra, 2022) ; (Yunitasari et al., 2020).

This is supported by a study conducted by Siauta et al., (2023) which found that mothers with insufficient knowledge about nutrition tend to provide diets that do not meet nutritional requirements, particularly during the first 1000 days of life. Therefore, health education interventions play a crucial role in stunting prevention by assisting mothers in ensuring optimal nutrition for their children (Siauta et al., 2023).

A study by Safitri et al., (2024) examined the effect of health education using PowerPoint media on increasing maternal knowledge about stunting in Karangsari Village, Garut Regency. It was found that PowerPoint-based education significantly improved maternal knowledge, with the average score increasing from 17.2 before the intervention to 19.6 after the intervention. This demonstrates that the use of visual media in health education can effectively enhance maternal knowledge regarding stunting prevention (Safitri et al., 2024).

Another study by Putriani et al., (2023) examined the effect of health education using leaflets on increasing maternal knowledge about stunting prevention in toddlers aged 12-36 months. The study found that health education using leaflets had a significant impact on improving maternal knowledge about stunting prevention. Before the intervention, 48% of respondents were in the category of insufficient knowledge, while after the intervention, 70% of respondents moved to the "good knowledge" category, with a p-value of 0.000 indicating a

significant difference. Additionally, the leaflet method was shown to facilitate a better understanding of stunting through visual information that was easier to comprehend and remember (Putriani et al., 2023).

Health promotion through health education is one of the methods of delivering messages to the community to ensure that information is easily received and understood (Sukmawati et al., 2020). To date, no research has been conducted on health education for stunting prevention using leaflet and PowerPoint methods in Wado Village, Sumedang Regency. Based on this background, the researcher is interested in conducting further research on the Effect of Health Education on Stunting Prevention on the Knowledge of Mothers with Toddlers in Wado Village, Sumedang in 2024.

Objective

This study aims to analyze the effect of health education on the knowledge levels of mothers with toddlers in Wado Village, Sumedang.

Methods

Research design

This study employed a pre-experimental design using a one-group pre-test and post-test approach.

Population and sample

The population consisted of mothers with children under five years old (toddlers), with a sample of 33 participants selected through accidental sampling.

Research instrument

The data collection technique in this study involved primary data, which was obtained through the distribution of a questionnaire containing 10 multiple-choice questions related to knowledge of stunting.

Data collection

The data collection technique in this study involved primary data, which was obtained through the distribution of a questionnaire to 33 respondents.

Data analysis

Data analysis in this study was conducted using univariate analysis to describe maternal knowledge before and after receiving health education. Bivariate analysis was performed using the Wilcoxon test to examine the effect of health education on stunting prevention on maternal knowledge in Wado Village, Sumedang.

Result

The results of the study show that the characteristics of the respondents can be described as follows the majority of participants, 33 individuals (100%), were in the age range of 21-46 years. Regarding educational background, the majority of respondents had completed junior high school, with 16 individuals (48.5%), followed by high school graduates, with 14 individuals (42.4%). Meanwhile, the majority of respondents, 32 individuals (97.0%), were housewives.

Table 1. Respondent Characteristics

Characteristic	f	%
Age Range		
Mean : 31.36		
> Mean	14	57.5
≤ Mean	19	42.5
20-25	11	33.3
26-31	8	24.2
32-37	6	18.2
38-43	5	15.2
44-49	3	9.1
Occupation		
Housewife	32	97.0
Working	1	3.0
Educational Level		
Elementary School	2	6.1
Junior High School	16	48.5
High School	14	42.4
Diploma	1	3.0

Based on Table 2, it is known that the respondents' knowledge before the health education intervention on stunting prevention was mostly in the Sufficient category, with 16 individuals (48.5%), and the least in the good category, with 5 individuals (15.2%). Based on Table 2, it is known that after the health education intervention on stunting prevention, the majority of respondents were in the good category, with 30 individuals (90.9%), and the least in the sufficient category, with 3 individuals (9.1%). This shows that there was an increase in the number of mothers with good knowledge about stunting prevention, rising from 5 individuals before the intervention to 30 individuals after the intervention.

Table 2. Pre-post test

	Knowledge Level	f	%
Pre-test	Good	5	15.2 %
	Sufficient	16	48.5 %
	Deficient	12	36.4 %
Post-test	Good	30	90.9 %
	Sufficient	3	9.1%

The statistical test used in this study was the non-parametric Wilcoxon test, as the results of the normality test using the Shapiro-Wilk test showed a significance value of 0.000 (<0.05) for knowledge. Therefore, the Wilcoxon test yielded a p-value of 0.000 (<0.05), which indicates that there is a significant effect between the maternal knowledge scores before and after the health education intervention on stunting prevention.

Table 3. Wilcoxon test

Pretest-Posttest	f	%	*P-Value*
Decline	0	0	
Increased	32	97%	0,000
Consistent	1	3%	

Discussion

Inadequate education and relatively young age are risk factors for stunting, as mothers may not fully understand or grasp the proper methods of child-rearing. Age influences a mother's ability and readiness to care for her child (Astuti et al., 2023). The mother's age also affects her maturity in parenting practices and decision-making regarding her child's diet (Indrayani & Khadijah, 2020). The results of the study show that the majority of mothers are housewives, with 32 individuals (97.0%) and 1 working mother (3.0%). Housewives are an ideal target group for receiving education on child development and stunting prevention, as they are the closest individuals and have the most influence on child-rearing and nutrition patterns (Anugrah et al., 2024).

Based on the research results in Wado Village, Sumedang, there was an increase in knowledge among mothers with children under the age of five, totaling 33 mothers. Before receiving health education on stunting prevention using leaflet and Power Point, the majority had adequate knowledge of stunting prevention in children, with 16 individuals (48.5%) in this category, while a smaller portion had good knowledge, with 5 individuals (15.2%).

After the health education intervention, the Wilcoxon statistical test showed an increase in knowledge among mothers of young children, with those previously in the adequate knowledge category (16 individuals, 48.5%) improving to the good knowledge category (30 individuals, 90.9%). This increase in knowledge among mothers of young children proves that stunting prevention education has a positive impact on improving knowledge (Sukmawati et al., 2023). There is a process of knowledge acceptance that occurs sequentially within an individual after receiving a stimulus in the form of health education, starting with awareness, where the individual becomes aware of and knows about the stimulus (object). This is followed by interest, where the individual becomes interested in the stimulus or object. Lastly, evaluation occurs, where the individual weighs the pros and cons of the stimulus in relation to themselves (Notoatmodjo 2010 ; Hendrawan et al., 2019).

The increase in knowledge among mothers is attributed to the effective stimulus they received regarding stunting, delivered through educational materials using leaflets and PowerPoint with visually appealing content. This approach captured the mothers' attention and made it easier for them to understand and retain the information more effectively (Ervina et al., 2020). The findings of this study are consistent with the research conducted by Isndaruwati et al., (2020) which revealed that before health education, the majority of respondents had adequate knowledge, with 41 respondents (55.4%) in this category. This aligns with Notoatmodjo (2012) statement that knowledge is the result of awareness, which occurs after an individual perceives a particular object (Isndaruwati et al., 2020).

Another study conducted by Putriani et al., (2023) titled "The Effect of Health Education Using Leaflet Media on Maternal Knowledge About Stunting Prevention in Children Aged 12-36 Months in the Work Area of Ambalawi Health Center, Bima District" found that before the health education, a significant portion of respondents (48%) had poor knowledge. However, after the intervention, 70% of the respondents improved to the good knowledge category,

with a p-value of 0.000, indicating a significant difference. Additionally, the leaflet method was shown to facilitate better understanding of stunting through visual information that was easier to comprehend and remember (Putriani et al., 2023).

A study by Safitri et al., (2024) examined the effect of health education using PowerPoint media on improving the knowledge of mothers with young children regarding stunting, conducted in Karangsari Village, Garut District. The results indicated that PowerPoint-based health education significantly improved maternal knowledge, with the average score increasing from 17.2 before the intervention to 19.6 after the intervention. This demonstrates that using visual media in health education can effectively enhance mothers' knowledge about stunting prevention (Safitri et al., 2024).

Health education is a conscious effort to induce behavior change towards healthy living, both in the community environment and socially. The goal of health education is to transform public behavior from unhealthy to healthy (Sukmawati et al., 2023). Therefore, efforts to improve knowledge about stunting are necessary to reduce the incidence of stunting (Rahayu et al., 2022). Therefore, health education, as part of health promotion, is necessary to increase awareness and knowledge, especially among mothers of young children. Knowledge improvement occurs when the messages or materials delivered are appropriate and effective (Yanti et al., 2022). The use of media such as leaflets and PowerPoint makes the health education process more engaging and varied in delivering information. Hence, providing and conveying information is an essential aspect of health education. The true meaning of health education lies in providing enlightenment and information, with the expectation that after health education interventions, there will be an improvement in knowledge among the community, particularly mothers of young children (Astuti et al., 2023).

Conclusion

This study concludes that health education significantly enhances maternal knowledge about stunting prevention, with a shift from moderate to good understanding. These findings highlight the effectiveness of health education as a key intervention in improving maternal awareness. Integrating structured health education programs into community healthcare strategies is essential to reducing stunting prevalence and promoting better child health outcomes.

Conflict of interest

The researchers stated that there is no conflict of interest related to the implementation and publication of the results of this research. The entire research process, from planning, data collection, analysis, to report preparation, was carried out independently without any influence or pressure from any third party. A commitment to research ethics is upheld throughout the research process, ensuring transparency, accuracy and honesty in reporting results. Respondents' participation was voluntary with informed consent, and their confidentiality and privacy were maintained in accordance with applicable research ethics standards. With this statement, researchers hope that the research results can be trusted and used as a valid reference for the development of science and health practices related to ethnomedicine and reproductive health.

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Authors' contribution

Each author makes an equal contribution to all parts of the research. All authors have reviewed and approved the final draft critically and are responsible for the index and similarity of the manuscript.

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