



IMPACT OF IMPLEMENTATION OF NUTRITION COUNSELING AND INTERVENTION ON TODDLERS WITH MALNUTRITION

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ABSTRACT

Malnutrition among toddlers remains a critical public health issue in developing countries. This study evaluated the impact of nutritional counseling and interventions on malnourished toddlers in Walenrang Barat Public Health Center, Luwu Regency, South Sulawesi, in 2024. A pre-experimental design with a one-group pre-test and post-test approach was employed, involving 31 participants selected through total sampling. Data were collected using observation sheets and analyzed with the Wilcoxon test and paired t-test. The results revealed significant improvements in toddlers' weight and height after the intervention, with average weight increasing from 9.1 kg to 9.4 kg and height from 84.3 cm to 85.4 cm. Statistical analysis yielded a p-value of $p = 0.000$ ($\alpha = 0.05$), indicating the effectiveness of the interventions. Counseling sessions enhanced parental awareness of balanced nutrition, fostering healthier feeding practices and supporting children's growth and development. Nutritional interventions, including supplementation, directly addressed nutrient deficiencies, leading to noticeable improvements in toddlers' physical health and activity levels. These findings highlight the importance of integrating counseling and nutritional interventions as a strategy to combat malnutrition. By equipping parents with knowledge and practical skills, these measures contribute to sustainable improvements in children's nutritional status and overall health.

Keywords: achievement index; gadget addiction; sleep quality

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INTRODUCTION

The issue of malnutrition among toddlers is a significant public health challenge in many developing countries. Nutritional interventions, including counseling and food supplementation, have been identified as critical strategies to address this problem. Research shows that micronutrient-fortified food supplementation, supported by nutrition education, can improve children's physical growth, although its impact may be limited without other interventions to reduce morbidity (Bhandari et al., 2001).

In India, the use of oral nutritional supplements combined with dietary counseling has been shown to enhance the growth of children at risk of malnutrition, particularly those described as picky eaters (Khanna et al., 2021). Another study indicates that nutritional interventions, encompassing supplementation and counseling, can improve dietary intake and nutritional status among children at risk of malnutrition (Fiore et al., 2002).

Community-based interventions have also demonstrated effectiveness in improving the nutritional status of children under five years old in the Eastern Mediterranean region, with significant improvements in weight-for-height z-scores (Ghodsai et al., 2021). In Iran, a national nutrition intervention program that combines nutrition education with affordable complementary foods has successfully reduced the risk of malnutrition among children (Shenavar et al., 2022).

Nutrition counseling, as part of the Integrated Management of Childhood Illness (IMCI) strategy, has been proven to enhance physicians' knowledge, assessment practices, and counseling, while also increasing food intake and weight gain among children (Santos et al., 2001). However, in humanitarian settings such as refugee camps in Somalia, nutrition counseling and unconditional cash transfers have not shown significant impacts on children's growth or household food security (Kalid et al., 2022). This study aims to evaluate the impact of implementing counseling and nutritional interventions on malnourished toddlers.

METHOD

The type of research used in this study is a pre-experimental design with a one-group pre-test and post-test approach. Measurements were conducted before the intervention was administered, followed by measurements after the intervention. The population and sample comprised 31 individuals, selected using total sampling. Data collection was performed using observation sheets. Data analysis was conducted using the Wilcoxon test and paired t-test in the working area of the Walenrang Barat Public Health Center, Luwu Regency, South Sulawesi, in 2024.

RESULT

The results of the study, based on the Wilcoxon test and paired t-test, showed a p-value of $\rho = 0.000$, which is less than the significance level $\alpha = 0.05$. The conclusion of the study is that the implementation of counseling and nutritional interventions has a significant effect on malnourished toddlers in the working area of Walenrang Barat Public Health Center, Luwu Regency, South Sulawesi, in 2024.

Table 1.
Frequency distribution based on respondent characteristics

| Characteristics | f | % |
|--------------------|----|------|
| Mother's Education | | |
| Elementary school | 9 | 29,0 |
| Junior high school | 15 | 48,4 |
| Senior High School | 7 | 22,6 |
| Mother's Job | | |
| Housewife | 27 | 87.1 |
| Self-employed | 4 | 12.9 |
| Toddler Age | | |
| 24-30 Months | 21 | 67,7 |
| 31-36 Months | 10 | 32,3 |
| Toddler Gender | | |
| Man | 11 | 35,5 |
| Woman | 20 | 64,5 |

Table 2.
The Effect of Implementation of Nutrition Counseling and Intervention on Malnourished Toddlers in the Work Area of the West Walenrang Health Center

| Variables | Mean ± SD | Difference (SD) | P=Value |
|---|-------------|-----------------|---------|
| Weight | | | |
| Before nutritional counseling and intervention (n=31) | 9.1 ± 0.76 | 0.3 ± 0.9 | 0,000 |
| After nutritional counseling and intervention (n=31) | 9.4 ± 0.85 | | |
| Height | | | |
| Before nutritional counseling and intervention (n=31) | 84.3 ± 4.01 | 1.1 ± 0.1 | 0,000 |
| After nutritional counseling and intervention (n=31) | 85.4 ± 4.11 | | |

Based on table 2, the average weight of malnourished toddlers before the implementation of counseling and nutritional interventions was 9.1 kg, which increased to 9.4 kg after the intervention. This indicates an improvement in the children's weight following the counseling and nutritional interventions. For the height variable, the average height of malnourished toddlers before the intervention was 84.3 cm, which increased to 85.4 cm after the intervention. Statistical analysis using the Wilcoxon test and paired t-test yielded a p-value of $\rho = 0.000$, which is less than the significance level $\alpha = 0.05$, indicating a significant effect of the interventions.

DISCUSSION

Based on interviews conducted by the researchers with several respondents, it was mentioned that after receiving counseling, they became more aware of the importance of balanced nutrition and how to incorporate it into their children's daily diets. The counseling helped them recognize signs of malnutrition and ways to prevent it, provided new skills in preparing healthy and appealing meals for children, and offered practical recipes and tips that facilitated the preparation of nutritious meals at home using locally available ingredients like fish and vegetables. Additionally, the counseling provided emotional support and motivation for parents to continue striving for their children's health, made them feel supported and less alone in addressing malnutrition issues, boosted their confidence in child-rearing, and enabled them to make better decisions regarding their children's health and nutrition.

Nutritional interventions also helped improve toddlers' weight and overall health, making children more active, cheerful, and energetic, with noticeable positive changes in their growth and development. This aligns with research conducted by Darmiati et al. (2021), which stated that nutritional counseling could enhance mothers' knowledge in preventing malnutrition in undernourished toddlers and could lead to weight gain in toddlers ($\rho < 0.05$). Similarly, Darwati et al. (2021) found that nutritional counseling using feeding rules and stimulation methods (SDIDTK) over four months at Posyandu significantly improved the nutritional status and development of children aged 6–24 months with feeding difficulties. The improvement was reflected in an increase in average weight from 9.13 kg to 10.14 kg and an increase in height from 74.5 cm to 79.10 cm.

Consistent with previous studies, Sarni et al. (2022) reported that providing supplementary food significantly impacted weight gain ($p=0.014$) and changes in toddlers' nutritional status ($p=0.005$) in the working area of Klasaman Health Center, Sorong City. Similarly, Akhfar et al. (2023) stated that specific nutritional interventions are direct efforts to prevent and address nutritional problems. These activities, often carried out by the health sector, include immunizations and providing supplementary food for pregnant women and toddlers at Posyandu. The primary target is the first 1,000 days of life (pregnant women, breastfeeding mothers, and children aged 0–23 months). Interventions conducted in Bulukumba Regency include regular monitoring of toddlers' growth and development at Posyandu.

This is consistent with the theory that behavioral changes related to health, such as adopting healthier eating patterns, are heavily influenced by education and motivation. Nutritional counseling plays a crucial role in educating and motivating parents to implement healthier eating habits for their children, ultimately leading to positive impacts on the children's nutritional status. Nutritional counseling helps parents understand and provide food appropriate for their child's growth stage. Adequate nutritional intake supports the body's anabolic processes, contributing to weight and height increases. The child's body strives to maintain internal balance or homeostasis. When nutritional intake is insufficient, the body utilizes existing nutrient reserves, which can impede growth. Nutritional interventions help

restore this balance by ensuring adequate nutrient intake, enabling optimal growth and development.

Aligned with the theory of nutritional needs, every individual, particularly toddlers, has specific nutritional requirements that must be met for optimal growth and development. A deficiency in essential nutrients such as protein, carbohydrates, fats, vitamins, and minerals can lead to malnutrition. Nutritional interventions address these deficiencies, supporting healthy weight and height growth. According to growth and development theories, children are significantly influenced by adequate and balanced nutritional intake (Chaerunnisa, 2021).

While no information suggests that counseling and nutritional interventions are ineffective in improving toddlers' nutritional status, some studies highlight that in addition to these interventions, improving the caregiving practices of mothers also plays a crucial role in enhancing the nutritional status of malnourished children. Parents influence the types of food provided to their children. Good caregiving practices emphasize food variety and ensure that children receive a balanced diet containing carbohydrates, proteins, fats, vitamins, and minerals. Conversely, poor caregiving practices may result in children receiving nutritionally inadequate or unbalanced meals, potentially leading to malnutrition. Based on this study, the researchers concluded that nutritional counseling and interventions could increase the weight and height of malnourished toddlers. Therefore, these approaches can be utilized as one of the strategies to address malnutrition in toddlers, ultimately improving their overall health in the community.

CONCLUSION

The average weight of malnourished toddlers before receiving counseling and nutritional interventions was 9.1 kg, which increased to 9.4 kg after the interventions, indicating an improvement in the children's weight. The average height of malnourished toddlers before the interventions was 84.3 cm, which increased to 85.4 cm after the interventions, showing an increase in the children's height. There is a significant effect of counseling and nutritional interventions on malnourished toddlers in the working area of the Walenrang Barat Public Health Center, Luwu Regency, South Sulawesi, in 2024, with a p-value of $p = 0.000$, which is less than the significance level $\alpha = 0.05$.

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