Journal of Neonatal Surgery
ISSN(Online): 2226-0439
Vol. 14, Issue 28s (2025)
https://www.jneonatalsurg.com

OPEN ACCESS

The Effect Of Posyandu Cadre Guidance On Mothers Of Toddlers On The Nutritional Status Of Toddlers In Luwuk Banggai District, South Batui District, Central Sulawesi Province

La Ode Ahmad Mardin[1], Veni Hadju[1], Nurzakiah[1], Abdul Salam[1], Abd. Razak Thaha[2], Muhammad Isyraqi Ghazian[3]

[1]Department of Nutritional Science, Faculty of Public Health, Hasanuddin University, Makassar, Indonesia

[2]Department of Medical Education Faculty of Medicine and Health, Muhammadiyah University, Jakarta, Indonesia

[3]Joint Operating Body (JOB) Tomori Sulawesi, Banggai, Indonesia

*Corresponding author:

Veni Hadju, Department of Nutritional Science, Faculty of Public Health, Hasanuddin University, Makassar, Indonesia

Email ID: laodeahmadmardin@gmail.com

Cite this paper as: La Ode Ahmad Mardin, Veni Hadju, Nurzakiah, Abdul Salam, Abd. Razak Thaha, Muhammad Isyraqi Ghazian, (2025) The Effect Of Posyandu Cadre Guidance On Mothers Of Toddlers On The Nutritional Status Of Toddlers In Luwuk Banggai District, South Batui District, Central Sulawesi Province. *Journal of Neonatal Surgery*, 14 (28s), 676-682.

ABSTRACT

Background: The results of preliminary research conducted in Batui Selatan District showed that most cadres only received material on anthropometric measurements but very rarely did they provide assistance to toddlers. The purpose of this study was to assess the effect of assistance from posyandu cadres to mothers of toddlers on the nutritional status of toddlers in Batui Selatan District, Banggai Regency, Central Sulawesi Province.

Methods: This study used a quasi-experimental design with a pre-post-test control group. Mothers with children aged 6-24 months were divided into intervention and control groups (n = 30 for each group). Data were collected using a structured questionnaire. This study was conducted for 2 months in 6 villages, with 3 intervention villages and 3 control villages in Luwuk Banggai Regency. Data were analyzed using statistical tests with a p -value <0.05 considered statistically significant.

Results: The category of nutritional status of toddlers in both groups showed that the BB/U (*Z-Score)* of toddlers in the intervention group was better than the control group, the results showed - 0.83 and - 0.84 with a p-value = 0.993 (p> 0.05). The PB/U (*Z-Score) category of toddlers in the intervention group showed values of* - 1.12 and - 1.78 respectively with a p-value <0.001 (p<0.05). The average BB/PB (*Z Score) of toddlers in the intervention group showed values of* - 0.50 and - 0.30 respectively with a p-value of 0.002 (p<0.05

Conclusion: The nutritional status variable shows that the intervention group that received cadre assistance experienced an increase in the nutritional status of toddlers compared to the control group.

Keywords: *Mentoring, Cadres, Nutritional Status, Child*

1. INTRODUCTION

Central Sulawesi Province is one of the provinces that is included in the top 10 highest in Indonesia. The results of the 2022 SSGI reported a stunting rate of 28.2% and in 2023 based on the SKI results it decreased to 22.7%. Meanwhile, the results of the 2022 SSGI in Banggai Regency showed results of 24.3% but increased in 2023 based on the SKI results of 29.1%. On a sub-district scale, South Batui is one of the sub-districts in Banggai Regency that has a stunting case rate that tends to decrease from 2022 to 2023. The results of the SSGI show that in 2022 the stunting incidence rate reached 26.4%, dropping to 23.6% in 2023.[1,2]

Government efforts in creating a better quality of life for toddlers and detecting development in toddlers require the role of cadres who have good skills in detecting development in toddlers[3]. Cadres are part of the community who have a role as an integral component of health workers for health development, and cadres are also expected to help the community in adopting or implementing healthy lifestyle behaviors and health service postcadres also become health providers who are close to the target activities of health service post, face to face cadres more often than other health workers.[4]

Posyandu cadres are considered to have the ability and meet the requirements to be able to carry out their duties as companions for mothers who have children aged 0-24 months in monitoring growth and assisting in fulfilling nutritional intake. Various research results prove that empowering cadres is effective, one of which is from Simbolon's (2022) research which shows results that can increase knowledge after being given material that is easy for cadres to understand, the attitudes and actions of mothers and improve the nutritional status of children and families[5]. Another study conducted by Sitorus et al. (2021) showed the influence of mentoring on the knowledge and skills of cadres in early detection and prevention of stunting which showed an increase in the average knowledge and skill values of respondents before and after mentoring.[5]

Through routine activities at the Integrated Health Post, counseling can be provided to mothers regarding effective parenting patterns and nutritious and balanced food intake for toddlers in order to improve the nutritional status of toddlers.[6] One study conducted in Yogyakarta showed that short training given to cadres consistently and significantly can improve cadres' knowledge about monitoring child growth, monitoring child development, and feeding infants, as well as facilitating cadres appropriately in visits to the homes of stunted children.[7] The results of research conducted by Effendy and friends showed that nutrition education provided through nutrition classes combined with regular home visits by cadres can have an influence and have great potential to be adopted to complement other nutrition programs at the Health Center and can improve children's nutritional status.[8]

The results of a preliminary study conducted in Batui Selatan District showed that most cadres only received materials on anthropometric measurements and weighing services, while the cadre's duties are not only to carry out anthropometric measurements but must be able to provide assistance to mothers of toddlers in efforts to improve children's health , especially the nutritional aspects of toddlers in the form of g status in toddlers in Batui Selatan District, Banggai Regency, Central Sulawesi Province. Therefore, the purpose of this study was to assess the effect of assistance from posyandu cadres to mothers of toddlers on the intake and nutritional status of toddlers in Luwuk Banggai Regency, Batui Selatan District, Central Sulawesi Province.

Research Ethics:

This research has received approval from the FKM UNHAS ethics commission with number **1837/UN4.14.1/TP.01.02/2024**

2. METHODS AND SUBJECTS

This research is located in Batui Selatan District, Banggai Regency, Central Sulawesi, Indonesia. This research was conducted for 3 months from August 2024-October 2024. A quasi-experimental study was designed to meet these objectives. The quasi-experimental approach design used was one group pretest–post test design. One posyandu group from 3 selected villages became the group that received the intervention and one posyandu group from 3 other villages became the control group (only received the first stage of training).

In this study, cadre training will be carried out in 2 stages. The first stage is carried out for all cadres with a duration of 1.5 days (theory and practice) and the second stage, only carried out on selected cadres with a duration of 2.5 days. The number of samples in this study was 60 respondents which were divided into 2 groups, namely 30 respondents for the control group and 30 respondents for the intervention group. The participants were carefully selected, ensuring their eligibility by confirming the absence of physical or mental disorders. The method used for participant selection is the purposive sampling technique. The research instruments consisted of questionnaires based on respondent characteristics, cadre questionnaires, and cadre skill measurement checklist questionnaires.

Data were collected using primary data collection methods, specifically through interviews supplemented by questionnaire distribution. The data analysis methodology used in this study involved descriptive analysis, with findings presented in tabular format to illustrate the frequency distribution of respondent characteristics. All statistical tests were performed using IBM SPSS Statistics version 26 (for Windows; IBM Inc., Chicago, USA). Uni-variate analysis for respondent characteristics and bi-variate analysis using the Chi-Square test with significance set at $p<0.05$.

3. RESULTS

Characteristics of toddler data in both groups, both the control group and the intervention group, showed that the age of toddlers was mostly in the age range of 12-24 months, as many as 31 people (51.7%). For birth weight, the results found normal birth weight (≥2500 gr) as many as 57 people (95%) and 3 people (5.0%) of whom were included in the LBW <2500 gr category, while for normal birth length (≥48 cm) as many as 31 people (51.7%) and for birth length below 48 cm as many as 29 people (48.3%). Characteristics of parent and household data of both groups, the results obtained regarding the low level of education of mothers, namely junior high school, as many as 47 people (78.3%). Furthermore, for the majority of mothers' jobs as housewives (IRT) as many as 56 people (93.3%). For the characteristics of father's data in both groups, namely for the last education of the father, the most were elementary school education as many as 27 people (45%) and the most father's job was working as a farmer as many as 42 people (70%). As many as 55 families (91.7%) have facilities for defecation (BAB) WC / *septic tanks* and for drinking water sources, most use refilled drinking water as many as 29 people (48.3%) (Table 1).

Table 1. Characteristics of Toddlers, Parents and Households of Both Groups

Variables	Group				Total		*P-value**
	Intervention		Control				
	n (30)	%	n (30)	%	n (60)	%	
Age (Months)							
6–11	17	56.7	12	40	29	48.3	0.301
12–24	13	43.3	18	60	31	51.7	
Gender							
Man	13	43.3	13	43.3	26	43.3	1.000 [a]
Woman	17	56.7	17	56.7	34	56.7	
Gestational age (Weeks)							
Premature (<37)	10	33.3	8	26.7	18	30.0	0.778
Normal (≥ 37)	20	66.7	22	73.3	42	70.0	
Birth weight (gr)							
LBW (< 2500)	1	3.3	2	6.7	3	5.0	1.000 [a]
Normal (≥ 2500)	29	96.7	28	93.3	57	95.0	
Birth length (cm)							
LBW (< 48)	15	50	14	46.7	29	48.3	0.796
Normal (≥ 48)	15	50	16	53.3	31	51.7	
Mother's Age (Years)							
< 20 and > 35	3	10	10	33.3	13	21.7	0.06
20–35	27	90	20	66.7	47	78.3	
Mother's Last Education							
Elementary School	1	3.3	5	16.5	6	10.0	0.139
Junior high school	27	89.1	20	66.7	47	78.3	
Senior high school	2	6.6	5	16.5	7	11.7	
Father's Last Education							
Elementary School	8	26.7	9	30	17	28.3	0.371
Junior high school	6	20	10	33.3	16	26.7	
Senior high school	16	53.3	11	36.7	27	45	
Mother's Job							
Work	2	6.7	2	6.7	4	6.7	1.000 [a]
Housewife	28	93.3	28	93.3	56	93.3	
Father's occupation							0.258
Farmer	17	56.7	25	83.3	42	70	

Laborer	7	23.3	2	6.7	9	15	
ASN	2	6.7	1	3.3	3	5.0	
Employee	2	6.7	1	3.3	3	5.0	
Doesn't work	2	6.7	1	3.3	3	5.0	
Number of Household Members (people)							
Small family (1-3)	7	23.3	8	26.7	15	25	0.374
Medium family (4-6)	19	63.3	21	70	40	66.7	
Extended family (≥ 7)	4	13.3	1	3.3	5	8.3	
Place for defecating							
Toilet/Septic Tank	27	90	28	93.3	55	91.7	0.839
Toilet/Pit	1	3.3	1	3.3	2	3.3	
Other	2	6.7	1	3.3	3	5	
Drinking Water Source							
Refill water	16	53.3	15	50	31	51.7	1.000 [a]
Boiled Water	14	46.7	15	50	29	48.3	

Source: Primary Data, 2025; *Chi-Square [a] Fisher's Exact Test

The results of the analysis of anthropometric measurements of weight and height before and after the intervention in both groups of toddlers (6-24 months), for the average weight of toddlers in the intervention group increased before the intervention from 8.54 kg to 8.97 kg with a significance value of <0.001 (p <0.05). These results indicate that the intervention group that was mentored by cadres was better than the control group. The average body length of toddlers in the intervention group, pretest and *post-test mentoring showed values of* 72.20 cm and 72.63 cm respectively with a significance value of <0.001 (p <0.05). For the average body length of toddlers, the results of the intervention group were better than the control group. For the category of nutritional status of toddlers in both groups, the average results of body weight according to age BB/A (*Z-Score) of toddlers in the intervention group showed values of* - 0.83 and - 0.84 respectively with a p value = 0.993 which was not statistically significant (p>0.05). While in the control group, the average body weight according to age BB/A (*Z Score)* pretest and *post-test*, respectively - 0.90 and - 1.00 with a p value = 0.154 which is not statistically significant (p>0.05). The average body length according to age PB/A (*Z-Score) of toddlers in the intervention group showed values of* - 1.12 and - 1.78 respectively with a significance value of <0.001 (p<0.05). While in the control group, the average body length according to age PB/A (*Z Score)* pretest and *post-test*, respectively - 0.79 and - 1.53 with a significance value of <0.001 (p <0.05). The average body weight according to body length BB/PB (*Z Score) of toddlers in the intervention group showed values of* - 0.50 and - 0.30 respectively with a significance value of 0.002 (p <0.05). While in the control group, the average body weight according to body length BB/PB (*Z Score)* pretest and *post-test*, respectively - 0.48 and - 0.37 with a p value = 0.537 which is not statistically significant (p>0.05) (Table 2).

Table 2. Bivariate Analysis of Mean Anthropometric Measurements and Nutritional Status *Pre-Test* and *Post-Test* in Both Groups of Toddlers (6-24 Months)

Variables	**Pre-test**	**Post-test**	***P-value***	**D**	***P-value***
	Mean (SD)	**Mean (SD)**		**Mean (SD)**	
Body weight(kg)					
Intervention	8.54 ± 1.40	8.98 ± 1.37	**<0.001 [d]**	0.43 ± 0.41	**0.001 [b]**
Control`	8.88 ± 1.05	8.81 ± 0.98	0.651 [c]	-0.07 ± 0.84	
P-value	0.301 [a]	0.581 [a]			

Body length (cm)					
Intervention	72.20 ± 5.06	72.63 ± 5.05	**<0.001** [c]	0.43 ± 0.34	**0.002** [b]
Control`	73.14 ± 4.42	73.33 ± 4.43	**<0.001** [c]	0.18 ± 0.20	
P-value	0.447 [a]	0.574 [a]			
BB/U (*Z Score)*					
Intervention	-0.80 ± 1.19	-0.87 ± 0.94	0.617 [d]	-0.07 ± 0.74	0.516 [b]
Control`	-0.93 ± 1.01	-1.17 ± 0.91	**0.052** [d]	-0.23 ± 0.63	
P-value	0.852 [b]	0.160 [b]			
PB/U (*Z Score)*					
Intervention	-1.13 ± 1.01	-1.60 ± 0.72	**<0.001** [d]	-0.47 ± 0.57	0.223 [b]
Control`	-0.83 ± 1.02	-1.53 ± 1.04	**<0.001** [d]	-0.70 ± 0.65	
P-value	0.147 [b]	0.776 [b]			
BB/PB (*Z Score)*					
Intervention	-0.50 ± 1.22	-0.3 ± 1.07	**0.002** [d]	0.47 ± 0.73	0.172 [b]
Control`	-0.47 ± 0.94	-0.43 ± 1.17	0.537 [d]	0.03 ± 1.03	
P-value	0.752 [b]	0.145 [b]			

Source: Primary Data processed, 2025; Bold values are significant at p < 0.05; [a] *Independent Samples t Test,* [b] *Mann Whitney Test,* [c] *Paired Sample t Test,* [d] *Wilcoxon Test*

4. DISCUSSION

This research was started in August-October 2024. This research was conducted at selected health service post in 6 villages in Luwuk Banggai Regency. This research was divided into 2 groups, namely the intervention group and the control group. In this study, the intervention group provided assistance to mothers of toddlers regarding the intake and nutritional status of children aged 6-24 months, while the control group did not provide assistance to cadres, only curriculum modules were provided for health service post cadres. Based on the calculation of the sample formula, the total sample in this study was 60 respondents. The respondents referred to in this study were mothers who had toddlers aged 6-24 months who were registered at the health service post which was used as the place of this research.

Cadre mentoring, also known as health education or promotion, is one of the efforts made so that the community behaves or adopts health behavior by means of persuasion, appeals, providing information and awareness to the community. The impact of this method on changing community behavior will indeed take a long time compared to training. However, if the behavior is successful, it will last longer, even for life.[9] The use of active health service post cadres as companion cadres can provide positive value because they are often used as references for the community so that their role is a driving factor in changing community behavior. This is in line with Green et al. (2021) which states that a person's or community's behavior regarding health is determined by reinforcing factors. Reinforcing factors are factors that strengthen changes in a person's behavior due to the attitudes and behavior of others such as parents, health workers and others. The health workers referred to in this study are the role of companion cadres.[10]

The accompanying cadres can act as recipients of complaints from public health problems so that they can bridge the relationship between health workers and their communities. Conditions such as these will be able to increase trust and increase the speed of information that can be obtained directly from the community. According to Khendra (2019), in his research it was explained that the use of local workers in delivering health messages is more beneficial. Because they have become one with their environment or in other words are used to it, so that messages can be conveyed culturally and are closer and more relevant to target families.[11]

In this study, the results obtained were the average weight, height/length of toddlers based on indicators BB/U, TB/U, and BB/TB indicating that cadre assistance in the intervention group had better results in improving children's nutritional status compared to controls. The results of this study are in line with one of the studies conducted in Yogyakarta showing that short training given to cadres consistently and significantly can improve cadres' knowledge about monitoring child growth,

monitoring child development, and feeding infants, as well as facilitating cadres appropriately in visits to stunted children's homes.[12] The results of the study conducted by Effendy et al. showed that nutrition education provided through nutrition classes combined with regular home visits by cadres can have an influence and have great potential to be adopted to complement other nutrition programs at the Health Center.[13] Other studies also state that the empowerment program through mentoring toddler cadres in Semampir District, Surabaya City can change the parenting patterns of toddler mothers for the better, namely including the practice of implementing a more varied toddler diet, behavioral practice efforts to prevent infection, increasing knowledge of how to properly parent toddlers, implementing PHBS, providing food according to nutrition, so that there is a change in the nutritional status of toddlers for the better.[13]

5. CONCLUSION

The nutritional status variable shows that the group that received cadre assistance experienced an increase in the nutritional status of toddlers compared to the control group.

Conflicts of interest

The authors certify that there is no conflict of interest with any financial organization regarding the material discussed in the manuscript.

Funding

The authors report no involvement in the research by the sponsor that could have influenced the outcome of this work.

Authors' contributions

All authors contributed equally to the manuscript and read and approved the final version of the manuscript.

Group author members

The following are the names of the most famous figures in the history of Islam:

Congress

This research has not yet been presented at a seminar.

Acknowledgements

We would like to express our sincere gratitude to the Posyandu cadres, mothers of undernourished children, and the administrative staff in the participating villages for them support and cooperation in this study.

REFERENCES

[1] Ministry of Health of the Republic of Indonesia. Minister of Health of the Republic of Indonesia Results of the Indonesian Nutritional Status Survey (SSGI) 2022. 2023;1–7.

[2] Ministry of Health of the Republic of Indonesia. (2023). Indonesian Health Survey (SKI)

[3] Rachmi CN, Agho KE, Li M, Baur LA. Stunting, underweight and overweight in children aged 2.0-4.9 years in Indonesia: Prevalence trends and associated risk factors. PLOS One. 2016;11(5):1–17.

[4] Purniti PS. Prognostic factors at birth for stunting at 24 months of age in rural Indonesia. Indonesian Paediatr. 2016;56(4):48–56.

[5] Gusrianti; Azkha; Bachtiar. (2019). Analysis of Factors Related to the Nutritional Status of Toddlers in Limau Manis Selatan Village, Pauh Health Center Working Area, Padang City. Andalas Health Journal, 8(4), 109–114. http://jurnal.fk.unand.ac.id/index.php/jka/article/view/1126

[6] Siswati, Ea (2022). Effect of Short Course on Improving the Cadres "Knowledge in the Context of Reducing Stunting through Home Visits in Yogyakarta, Indonesia. International Journal of Environmental Research and Public Health, 19(9843), 1–10. https://pubmed.ncbi.nlm.nih.gov/36011477/

[7] Effendy, et. a. (2020). Nutrition education in Southeast Sulawesi Province, Indonesia: A cluster randomized controlled study. Maternal & Child Nutrition: Wileyonlinelibrary.Com/Journal/Mcn, 16(November 2019), 1–14. https://doi.org/10.1111/mcn.13030

[8] Hall A, Hewitt G, Tuffrey V, De Silva N. A review and meta-analysis of the impact of intestinal worms on child growth and nutrition. Matern Child Nutr. 2008;4(SUPPL.1):118–236.

[9] Anwar, A., Rasidi, R., & Hasanah, U. (2021). The Influence of the Activeness of Posyandu Cadres on the Nutritional Status of Toddlers in South Batui District. Journal of Nutrition and Health, 15(2), 45-52.

[10] Haryanto, S., Nurdin, F., & Safitri, D. (2022). Empowerment of Posyandu Cadres in Stunting Prevention Efforts in Luwuk Banggai Regency. Journal of Public Health, 18(1), 67-75.

[11] Sambriong, Maria, Yulianti K Banhae, and Roswita R Roku. 2023. "Training and Mentoring of Nutrition Cadres as an Effort to Improve the Nutritional Status of Toddlers." 3(5): 696–705.

[12] Shodikin, Ahmad Ari, and Nur Lathifah Mardiyati. 2023. "Mother's Education Level and Nutritional Parenting Patterns in Relation to Stunting Incidence in Toddlers Aged 24-59 Months." 12: 33–41.

[13] Mars Khendra Kusfriyadi, Sugiyanto, Fretika Utami Dewi. 2019. "The Influence of Cadre Assistance on Mothers' Nutritional Behavior and Toddlers' Nutritional Status." 2(5): 187–96.