

The Effect of Counseling Using Pop-Up Book Media on Mothers' Knowledge and Attitudes in Fulfilling Nutrition for Children Aged 1-3 Years in the Working Area of the Juli II Health Center, Bireuen District

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Abstract

According to Indonesia's SSGI 2022 data, 17.1% of underweight toddlers, particularly in developing countries, suffer mortality related to inadequate dietary intake. Juli II Health Center in Bireuen District reports a 10.0% prevalence of undernutrition among its target of 1,450 toddlers, consisting of 6.6% underweight and 3.4% wasting. Maternal knowledge and attitudes significantly impact child nutritional health and are critical targets for educational intervention. This study aimed to assess the effect of counseling using pop-up book media on mothers' knowledge and attitudes regarding nutrition for children aged 1–3 years. This quasi-experimental study employed a one-group pretest-posttest design with a non-probability quota sampling method, involving 30 mothers. Data were collected using structured pretest and posttest questionnaires and analyzed using the Wilcoxon signed-rank test. The results showed that the average maternal knowledge score increased from 8.27 (SD=3.657) to 13.37 (SD=1.189), and the average attitude score rose from 43.63 (SD=3.296) to 55.00 (SD=3.904). Statistical analysis indicated significant differences before and after intervention ($p=0.000$). The study concludes that pop-up book media effectively improve maternal knowledge and attitudes related to fulfilling nutritional needs for toddlers.

Keywords: counseling, maternal attitude, maternal knowledge, pop-up book, toddlers

Indroduction

Indonesia as a developing country still experiences malnutrition problems that pose a serious challenge to its citizens. According to Indonesia's SSGI 2022 data shows that about 17.1% of underweight children under five, especially those in toddler age, die from inadequate diet, with most cases occurring in developing countries. Suboptimal nutrition conditions, such as undernutrition in children under five, anemia, iodine deficiency disorder (GAKY), and vitamin A deficiency, remain significant problems at the national level. Based on SSGI 2022 data in Bireuen District, the national prevalence of malnutrition and undernutrition is still 36.4% of underweight and undernourished children, consisting of 25.5% underweight and 10.9% wasting (Ningsih, 2015; Aceh Ministry of Health, 2022).

One of the causes of nutritional problems in children is malnutrition, which can inhibit physical, psychomotor and mental growth and development, and can result in a 15% to 20% brain cell deficiency (Rusliani, 2022).

One of the factors that can cause malnutrition in children is a lack of knowledge, especially in mothers, which can cause family nutrition problems. Mothers have an important role in

providing healthy food for the family and maternal behavior plays a very important role in providing nutrition with nutritional status in toddler age children (Masrikhiyah, 2020).

The effect of pop-up book media on the knowledge of pregnant women in exclusive breastfeeding has been proven effective in significantly increasing maternal knowledge (Mainey, 2022). Providing education to mothers can be done using pop-up media because this book has elements that can move or have a three-dimensional dimension that can provide interesting story visualizations. The pictures in this book can move when the page is opened, thus facilitating better understanding of the material by mothers (Mainey, 2022).

Methods

This study utilized a quantitative quasi-experimental design with a one-group pretest and posttest model. It aimed to assess the effect of nutrition counseling using pop-up books on mothers' knowledge and attitudes regarding child nutrition. The research was conducted in September 2024 in the working area of Juli II Health Center, Bireuen District, where no similar intervention studies had been previously conducted. Prior to the intervention, necessary permissions were secured from both the Department of Nutrition and the health center. Pretests were administered before the counseling sessions, and posttests were conducted on the third and fourth days following the intervention. The stages of implementing nutrition education interventions were carried out directly in the Juli II Health Center Working Area of Bireuen Regency. The implementation of the study began with the preparation of administrative correspondence for research permits, both letters from the Department of Nutrition and also permission letters from the health center Juli II. Before intervening in the form of nutrition counseling on the fulfillment of nutrition for children aged 1-3 years, a pre-test was first conducted. Post-test was conducted on the 3rd and 4th day after nutrition counseling was conducted using pop-up book media.

Result

Respondent Characteristics

Table 1. Characteristics of Respondents Based on Age, Recent Education, and Occupation.

Respondent Characteristics	n	%
Age		
16 – 25 year	7	23,3
26 – 35 year	14	46,7
36 – 45 year	5	16,7
46 – 55 year	4	13,3
Total	30	100
Education		
Elementary - high school	26	86,7
Diploma – Bachelor	4	13,3
Total	30	100
Occupation		
Housewife	26	86,7
Honorary worker	3	10,0
Civil servant	1	3,3

Total	30	100
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Description of knowledge and attitudes before and after Counseling Using Pop-Up Book Media

Table 2. Description of knowledge and attitude before-after of Counseling

Variable	n	Min	Max	Mean	SD
Knowledge					
Pre	30	1	15	8,27	3,657
Post	30	11	15	13,37	1,189
Attitude					
Pre	30	37	54	43,63	3,296
Post	30	48	60	55,00	3,904

The Effect of Counseling Using Pop-Up Book Media

Table 3. The Effect of Counseling Using Pop-Up Book Media on Mothers

Research variables	Mean	SD	Δ Mean \pm SD	CI 95% Lower-Upper	P Value
Knowledge					
Pretest	8,27	3,65	$5,1 \pm 2,46$	6,18 – 4,01	0,000
Posttest	13,37	1,18			
Attitude					
Pretest	43,63	3,29	$11,37 \pm 0,61$	13,34 – 9,38	0,000
Posttest	55,00	3,90			

Discussion

Characteristics of Respondents

Respondents in this study totaled 30 people aged 19 - 52 years. Age 16-25 years as many as 7 people (23.3%), 26-35 years as many as 14 people (46.7%), 36-45 years as many as 5 people (16.7%), 46-55 years as many as 4 people (13.3%), and The majority of respondents had completed education up to elementary to senior high school, totaling 26 individuals (86.7%), while 4 respondents (13.3%) held a diploma or bachelor's degree.

The level of education has a significant influence on maternal behavior in providing nutritious food to toddlers. Education is a learning process that aims to create changes for the better. The higher a person's level of education, the better their knowledge (Ngatimin, 2006), which in turn has a positive impact on maternal behavior in fulfilling toddler nutrition.

Knowledge

The results of the analysis showed that before the intervention with pop-up book media, the average knowledge of mothers was 8.27 with a standard deviation of 3.657. After being given counseling using pop-up book media, the average knowledge increased to 13.37 with a standard deviation of 1.189.

This is in line with the research of Nugrahani et al. (2016) entitled Differences in the Incidence of Over Nutrition in Toddlers 1-2 Years of Age with Exclusive Breastfeeding History. The study found that education level is closely related to a person's level of knowledge, where education affects an individual's ability to absorb and understand nutritional information. Based on the results of this study, it can be concluded that the knowledge of mothers of toddlers increased significantly after being given counseling using pop-up book media.

Attitude

The average attitude of mothers of toddlers before getting nutrition counseling using pop-up book media was 43.63 with a standard deviation of 3.296. After counseling using the media, the average attitude increased to 55.00 with a standard deviation of 3.904. These results indicate a significant increase in maternal knowledge and attitudes after the intervention, based on the average value obtained after counseling in the Juli II Health Center working area, Bireuen Regency.

This study is in line with the results of Nur Rahman's research (2020) entitled The Effect of Counseling Using Pop-Up Book Media on Knowledge about Vegetable and Fruit Consumption of Students of SD Negeri Cempaka, Citeureup District, Cimahi City. In the study, the average value of students' initial knowledge (pre-test) about vegetable and fruit consumption was 58.39, which increased to 73.72 after counseling (post-test). Statistical analysis using the Wilcoxon test showed a significant difference between before and after counseling with a value of $p=0.000$. These results prove that pop-up book media is effective in increasing students' knowledge about vegetable and fruit consumption.

Conclusion

Counseling using pop-up book media significantly improves mothers' knowledge and attitudes toward fulfilling nutritional needs for children aged 1–3 years in the working area of Juli II Health Center, Bireuen District. These findings support the integration of interactive media into community nutrition education strategies.

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