

The effectiveness of communication, information, and education (CIE) media on balanced nutrition behavior in elementary school students at SDN Bulurokeng 1

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ABSTRACT

Insufficient energy and protein intake below the minimum requirements is usually the beginning of nutritional problems in elementary school children. Balanced nutrition behavior needs to be applied to avoid problems by providing education through IEC media. The purpose of the study to measure the effectiveness of IEC media on increasing knowledge, attitudes, and actions regarding balanced nutrition of elementary school children at SDN Bulurokeng 1 Makassar City. This research is a quantitative study using a quasi experiment design with a one group pre-test post- test design approach. The media used for intervention is KIE media Leaflet balanced nutrition. Data normality test using Kolmogorov Smirnov with the results of data not normally distributed. Then analyzed using the Wilcoxon Signed Rank Test statistical test. The results showed that the mean value of knowledge before the intervention was 73.33 after 72.08, there was no difference before and after the intervention (p value = 0.53), the attitude before the intervention was 57.35 after 76.00, the action before the intervention was 58.3 after 75.83 there was an average increase (p Value = 0.00). The study indicated that IEC media increases attitudes and actions toward balanced nutritional behavior in elementary school pupils at SDN Bulurokeng 1.

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INTRODUCTION

Elementary school age children (aged 6 -12 years) are an age group that continues to grow and develop, requiring adequate and appropriate nutritional needs and intake to support their growth and development. However, currently children have poor eating habits, so that their nutritional

needs are not optimally met. Insufficient nutritional intake during childhood can cause various nutritional problems and impact children's performance at school.

In an effort to improve public nutrition and to improve the quality of human resources, the Indonesian government has implemented a policy, namely Regulation of the Minister of Health of the Republic of Indonesia (Permenkes RI) Number 41 of 2014 concerning guidelines for balanced nutrition. The most effective way to socialize nutrition is through educational institutions. As many as 91% of elementary schools are the best target for conducting nutrition outreach (Kemenkes RI, 2019).

According to WHO (World Health Organization) nutrition education is a planned effort to improve nutritional status by changing behavioral patterns related to food consumption and nutritional status. Prevention must be timely to reduce the prevalence rate and can create better human resources. One of the nutritional improvement programs that is often carried out is providing education (Organization, 2021; Tontisirin et al., 2022).

The principles of the Nutrition Guide for Balanced Diet as a result of the agreement at the world food conference in Rome in 1992 are believed to be able to overcome the double burden of nutritional problems, both under and over nutrition. In Indonesia, this principle is known as PGS (Balanced Nutrition Guidelines) (Kartini et al., 2019).

The nutritional problems faced by Indonesian children are not only malnutrition, but overnutrition has become a public health problem. Basic Health Research Data (RISKESDAS) in 2013, shows that nationally the prevalence of shortness in children aged 5-12 years is 30.7%, consisting of 12.3% very short and 18.4% short, thin prevalence (according to BMI/ U) is 11.2%, consisting of 4.0% very thin and 7.2% thin and, obesity is still high, namely 18.8%, consisting of 10.8% fat and very fat (obese) (8.0%) (2). In Kendari City, the prevalence of very thin children aged 5-12 years is 4.8%, thin 10%, and obese (8.2%).

Based on the results of the 2018 Basic Health Research, the nutritional status of children aged 5-12 years according to BMI/U in Indonesia was obtained with a prevalence of wasting, namely 9.2%, consisting of very thin 2.4% and thin 6.8%. The nutritional problem of obesity in children in Indonesia is still high with a prevalence of 20% consisting of 10.8% being overweight and 9.2% being very overweight (obese).

South Sulawesi, nutritional status of children aged 5-12 years according to BMI/U with a prevalence of very thin 2.97%, thin 8.64%, normal 74.01%, obese 7.83% obese 6.54. Meanwhile, the nutritional status of children aged 5-12 years according to BMI/U in Makassar City is with a prevalence of very thin 5.11%, thin 8.53%, normal 65.94%, fat 8.61%, obese 11.82%. In terms of the highest incidence of obesity in South Sulawesi, the first place is Makassar City with a prevalence of 11.82% (Kemenkes RI, 2018).

Behavior is essentially human actions or activities that can be observed or cannot be observed in a person's interaction with their environment, which are manifested in the form of knowledge, attitudes and actions (actions). To create a generation that is aware of nutrition and implement the 4 pillars of balanced nutrition contained in the PGS (Guidelines for balanced nutrition) it is certainly necessary to change behavioral patterns that lead to balanced nutritional behavior. (Devi, 2021).

According to Notoatmodjo, 1997 in research (Dewi & Kurniasari, 2022) Nutrition education in the form of communication, information and education (KIE) is an effort to improve public health status, especially nutritional status, through changes in nutritional knowledge and practice/behavior in a better direction. One effort to increase nutritional awareness in children through IEC media can be in the form of posters, audio visuals, leaflets, puzzles as tools to help convey educational/teaching materials. The use of media in learning is useful for achieving educational targets, motivating targets to implement health messages, helping overcome various obstacles, and helping educational targets to learn more and easily understand the material presented (Kurdanti et al., 2019; Wijayanti et al., 2020).

The advantage of KIE media is that it contains images and short messages that will explain a problem clearly and in accordance with the subject matter. Image media can also give rise to various student creativity in discussing it. Students more easily understand the topic or material presented more clearly. The use of nutritional media as a means of balanced nutrition education can increase knowledge, attitudes and actions on balanced nutrition in elementary school students. This is proven by research by Nasution, Andreanda and Ade Saputra Nasution (2020) who examined the nutritional puzzle as an effort to promote balanced nutritional behavior in elementary school students. This research compares the level of knowledge, attitudes and actions of balanced nutrition in students before and after being given intervention using nutrition puzzle media (Kurniawan et al., 2019; Nasution & Nasution, 2020).

From initial observations at SDN Bulurokeng 1, Makassar City, there are still many children who eat snacks carelessly and do not pay proper attention to their nutritional intake. Lesson material regarding nutrition in schools is only available in grades 4 and 5. So from this background and problems, research was carried out regarding the effectiveness of balanced nutrition educational media. The benefits of this research are to provide understanding so that students can more easily understand the topics or materials presented more clearly. The use of nutrition media as a means of balanced nutrition education can improve knowledge, attitudes, and actions of balanced nutrition in elementary school students.

RESEARCH METHOD

This research is quantitative research using a quasi experimental design (Gopalan et al., 2020; Ibrahim et al., 2023; Miller et al., 2020; Rogers & Revesz, 2019) with a one group pre-test post-test design approach, carried out in June-July 2023. The population in this study was all 155 students. Determining the sample size using the Slovin formula resulted in 60 people.

The sampling technique used was purposive sampling with the criteria that students had received lessons about nutrition, namely in grades 4 and 5. Data collected were knowledge, attitudes and actions before and after the intervention using questionnaires. The media used for the intervention was KIE Leaflet media. balanced nutrition with a significance level (α)=0.05, Data analysis is univariate explain or describe the characteristics of each research variable and bivariate analysis to measure the effectiveness of IEC media using the Wilcoxon Signed Rank Test statistical test.

RESULTS AND DISCUSSIONS

Results

Univariate Results

In table 1 you can see the results of the characteristics of the respondents as follows.

Table 1. Respondent characteristics based on gender and age

Gender	n	%
Man	25	41.7
Woman	35	58.3
Total	60	100
Age		
10 years	4	6.7
11 years old	47	78.3
12 years old	7	11.7
13 years old	2	3.3
Total	60	100

Table 1 shows that male gender is 41.7% and female is 58.3%, and age 11 is the highest at 78.3%.

Table 2. Knowledge, Attitudes and Actions before and after being given intervention to Bulurokeng 1 City Elementary School Children

Knowledge	Pre post		Post test	
	n	%	n	%
Not enough	12	20.0	4	6,7
Good	48	80.0	56	93.3
Total	60	100	60	100
Attitude				
Not enough	24	40.0	4	6,7
Good	36	60.0	56	93.3
Total	60	100	60	100
Action				
Not enough	25	41.7	7	11.7
Good	35	58.3	53	88.3
Total	60	100	60	100

Table 2 shows that knowledge was lacking before the intervention as much as (20%), and after the intervention it decreased to (6.7%), attitudes (40%), to (6.7%), while actions (41.7) became (11.7). Which means there is an increase in knowledge, attitudes and actions after being given IEC media intervention in the form of a balanced nutrition leaflet.

Bivariate Analysis

Table 3. Normality test

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistics	df	Sig.	Statistics	df	Sig.
Pre Test Knowledge	,293	60	,000	,821	60	,000
Post Test Knowledge	,179	60	,000	,921	60	,001
Pre Test Attitude	,149	60	,002	,956	60	,030
Post Test Attitude	,264	60	,000	,768	60	,000
Pre Test Action	,168	60	,000	,945	60	,009
Post Test Action	,238	60	,000	,836	60	,000

Table 3 shows the results of the normality test using Kolmogrov Smirnov, the results obtained for knowledge of attitudes and actions, namely sig = 0.00 where the p value < 0.05, so the data is not normally distributed. So the test used to obtain bivariate analysis results is the Wilcoxon test.

Table 4. Differences in pre-test and post-test knowledge scores, attitudes and actions

Knowledge	Mean	Minimum	Maximum	p-value
Pre Test	73.33	40	90	0.53
Post Test	72.08	45	90	
Attitude				
Pre Test	57.33	20	90	0.00
Post Test	76.00	0	90	
Action				
Pre Test	58.83	20	90	0.00
Post Test	75.83	50	90	

Table 4 shows that the mean value of knowledge of balanced nutritional behavior in the pre-test and post-test is 1.25 with the p=value obtained, namely 0.53, Attitude 18.67 with the

p=value obtained, namely 0.00, while the Action value mean 17 with p=value obtained, namely 0.00. This means that knowledge does not have a significant influence, while attitudes and actions have a significant influence on the IEC media interventions that have been provided.

Discussion

The findings in this study can be interpreted that there is no significant difference in knowledge of balanced nutrition between the pre-test and post-test results. Increasing knowledge itself is influenced by several factors, namely, education, personal or other people's experiences, mass media and the environment (Sholihah & Sakinah, 2022). Even though the IEC media in this study was not effective for knowledge of balanced nutrition behavior, efforts must still be made to increase knowledge of balanced nutrition through educational media. Providing balanced nutrition education is important to increase knowledge about nutrition for school children. This effort is the right step to take and is supported by parties who care about improving the nutrition of school children (Suhaid et al., 2022).

Attitudes towards balanced nutrition behavior of children at the Bulurokeng 1 state elementary school, there is a significant difference between the results of the pre-test and post-test. Attitudes are not innate but are formed and learned throughout the person's development in relation to their objects (Bertalina, 2015; Saragih & Andayani, 2022; Sewa et al., 2019). The results of this research are in line with research conducted by (Hikmawati et al., 2018) regarding the effect of leaflet media on exclusive breastfeeding for up to 3 months which shows the results of differences in behavior. Attitude is a feeling followed by a tendency to act in accordance with the attitude. Attitude has aspects of encouragement and motivation that are different from the knowledge that exists within a person. This can be formed by adoption and integration. Adoption occurs because events occur continuously and repeatedly, which will then be absorbed into the individual gradually, eventually forming experiences related to one particular thing (GINTING, 2019). Meanwhile, in Action, there is a significant difference between the pre-test and post-test results, which means that the IEC media intervention has a positive influence. This is in line with research Kurdanti (2019) conducted by About Nutrition Education Interventions using media in the form of pop up books, puzzle media, PGS cards and leaflets. This shows that students' actions improved after being given education through KIE (Leaflet) media which contained pictures and short and clear explanations so that it made it easier for students to understand the message of balanced nutrition conveyed by researchers through KIE (Leaflet) media (Kurdanti et al., 2019).

CONCLUSION

This research concluded that after intervention in the form of IEC media (leaflets), the effectiveness of IEC media was not found in increasing knowledge, but was effective in increasing attitudes and actions regarding the balanced nutritional behavior of elementary school children at SDN Bulurokeng. The contribution of the research is that there are findings in this study that can be interpreted that there is no significant difference in knowledge of balanced nutrition between the pre-test and post-test results. Increased knowledge itself is influenced by several factors, namely, education, personal or other people's experiences, mass media and the environment. The attitude of balanced nutrition behavior of Bulurokeng 1 public elementary school children, there is a significant difference between the results of the pre-test and post-test. The limitation of the study is only the scope of public elementary school 1 bulurokeng, so that later it can add research respondents. Suggestions for future research, namely This research recommends that future researchers who want to research balanced nutrition intervention media should develop and combine several other forms of IEC media that are much more interesting so that school children can easily understand them.

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