

Pirzi Doll”: A Method for Increasing Children’s Knowledge and Attitude in Balanced Nutrition

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Abstract: Nutrition is one of the main problems in the world, where the number of malnourished patients reaches less than 104 million children and one third of all causes of child mortality worldwide are still caused by malnutrition. Nutrition knowledge in school-aged children is one of the factors determining patterns food consumption and nutritional status. Nutrition education in school-aged children can improve children's nutritional knowledge and play a role in food selection and eating habits. Nutrition education should start from an early age. Nutrition and health education began to be directed at kindergarten and elementary school students, since this age group has a habit of attitude that is relatively easy to be formed. This study aims to determine the effect of nutrition education by story's telling with pirzi doll media to increase knowledge and attitude of children about balanced nutrition. This study used quasi-experimental design with two group pre and post-test design sampling was carried out with a systematic random sampling. Sample of research were children enrolled in Kindergarten IT Rabbani and IT Menara Fitrah in Ogan Ilir District. There were 37 samples on control group dan 39 samples on experimental group. The results of statistical analysis using Mann-Whitney test. The mean score of knowledge after being given a nutritional education was 26.15 ± 3.10 in the experimental group and in the control group was 26.05 ± 3.16 (p -value=0.817). The mean score of attitudes after being given a nutritional education was 13.69 ± 1.97 in the experimental group and in the control group was 11.24 ± 3.67 (p -value=0.002). There was no difference in mean score of knowledge between the experimental and control groups after being given a nutritional education. There was a difference in mean values of attitudes between the experimental and control groups after being given a nutritional education.

Keywords: Story Telling; Pirzi Doll; Balanced Nutrition

I. INTRODUCTION

Nutrition is one of the main problems in order of population of the world, the number of sufferers in the world of nutrition less reached 104 million children and one-third of the entire cause of death of children around the world are still caused by undernourishment form. Based on data basic health research results from the year 2007 to 2013 showed that the prevalence of nutritional toddler fluctuated less than

18.4% in 2007 dropped to 17.9% in 2010 and rise back to 19.6% in 2013. In 2013 based on indicator weight to age the prevalence of nutrition less on toddlers in South Sumatra by as much as 12% and the prevalence of malnutrition of 6.3%. The prevalence of toddlers with less nutritional status most high in South Sumatra is in the Regency Ogan Ilir i.e. amounted to 17.2%.¹

Nutritional status less on children may affect the growth and development of children, lowers the body's immune system, increasing the number of pain and shorten the life expectancy.² While when entering the age of 3, children begin to be logically want to independently and in choosing the food was already being active as a consumer where the child can already choose and determine food that they want to eat. On 3-5 year age range often going child refuses food dislikes and just choose the preferred food so need to be introduced to them a variety of foods. Knowledge of nutrition in school age children is one of the factors that determine food consumption patterns and nutritional status. Nutrition education in school-aged children can increase knowledge of child nutrition and was instrumental in the selection of foods and eating habits.³ The improvement of the nutritional knowledge could be done with the program of nutrition education.

Nutritional education programs can provide an impact on knowledge, attitudes, and behavior of children towards the dining habits. Nutrition education should be started from early on. Nutrition education and health started directed at pupils of kindergarten and elementary school, considering this age groups have a habit of attitudes that are still relatively easily formed.² At the time of the children, play is an important education means exploring the brain. Therefore, the most suitable educational concept at this time was the concept of education combined with play. One means of education that corresponds to the concept of fun is through story telling with doll media. The purpose of this research is to analyze the effect of nutrition education through technical story telling by using “pirzi dolls “to knowledge and attitudes about nutrition balanced on early childhood.

II. LITERATURE REVIEW

A. Nutrition Education and Media Nutrition Education

Nutrition education information about nutrition that can enhance children's knowledge that is expected to change eating habits in a child to a balanced diet. Nutrition education in school children



should be provided with the means and the appropriate media in order to attract the attention of children and can also make it easier for children in receiving information regarding nutrition.⁴ Tools (viewer) are a tool used by learners in delivering education/teaching materials, often referred to as props. Kay Bishop dan Melanie A. Kimball stated that “*storytelling* is an ancient art, as old as oral communication itself.⁵ Storytelling is a creative art form that has entertained and informed across centuries and cultures.⁶

B. Knowledge and Attitudes of Nutrition

According to the research expert's senses, the most widely distributes knowledge into the brain is the eyes. More or less 75-87% human knowledge gained/channeled through the eyes, while 13-25% other channeled through other senses. Here it can be concluded that more visual tools simplify the way of delivery and receipt of information or educational materials .improvement of knowledge does not always causing a change in behavior, but the positive relationship between both variables have been shown in several studies. Cognitive understanding in attitude is a broad relationship includes not only knowledges that are relates the object's attitude, but also it includes a trust or beliefs regarding the relationship between object of that attitude with existing value system from individual.⁷ Nutritional attitudes would indicate a tendency for example taking decisions within the Act and directly affect the nutritional practices. Nutritional practices will be directly influenced by the attitudes and other psychosocial factors, whereas nutritional knowledge does not always have a direct impact on the behavior of individual nutrients.⁸

III. METHODOLOGY

This study used quasi-experimental design with two group pre and post-test design sampling was carried out with a systematic random sampling. Populations were all the children of the kindergarten in IT Rabbani Indralaya as the control group and IT Menara Fitrah Indralaya as the intervention group. This research was conducted in August-November 2018. The intervention group was given education methods by storytelling with “pirzi dolls” whereas the control group given nutritional education with the lecture’s methods. The subject of this research is a student/class B student’s from withdrawing the subject using total sampling. There were 37 samples on control group and 39 samples on experimental group. Nutritional education was carried out for 5 weeks with the intervention frequency of once a week. This activity takes 20-30 minutes starting from the pre-test, material presentation and post-test. Nutrition and health education material covers 2 topics such as knowledge of food ingredients and knowledge of healthy food.

Research data used in the research is the primary data include child characteristics, knowledge and attitudes about balanced nutrition. The data consists of a pre-test (before intervention) and post-test (after the intervention). Data pre-test and post-test nutrition knowledge and attitudes were collected using a questionnaire. A validated questionnaire

was used to assess knowledge at pre and post intervention. Ethical issues (including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors. Mean difference before and after intervention was analyzed using Wilcoxon Signed Rank Test and mean difference between experimental and control group was analyzed using Mann-Whitney Test.

IV. RESULTS AND FINDINGS

A. Results

Univariat analysis showed that characteristics distribution of samples. There were 59.46% boys in Robbani dan 48.72% boys in Menara Fitrah. Fathers with 35 years old or more of age were 62.16% (Robbani) and 48.72% (Menara Fitrah) with diploma (D3)/ graduate (S1) 59.46% (Robbani) and 71.79% (Menara Fitrah) as the most of father’s education and private employee 54.05% (Robbani) and entrepreneur about 53.85% (Menara Fitrah) as the most of father’s occupation. Meanwhile, Rp. 2,000,000 - Rp. 4,999,999 as father’s income in Robbani (70.27%) and in Menara Fitrah (66.67%) (Table 1).

Table 1. Characteristics Distribution of Children

Characteristics	Rabbani (n=37)		Menara Fitrah (n=39)	
	n	%	n	%
Sex				
Girls	15	40.54 %	20	51.28 %
Boys	22	59.46 %	19	48.72 %
Age				
5 years old	7	18.92 %	12	30.77 %
6 years old	28	75.68 %	27	69.23 %
7 years old	2	5.41%	-	-
Father's Age				
<=35 years old	14	37.84 %	20	51.28 %
>35 years old	23	62.16 %	19	48.72 %
Father's Education				
Senior High School	9	24.32 %	8	20.51 %
Diploma (D3)/ Graduate (S1)	22	59.46 %	28	71.79 %
Postgraduate (S2)	6	16.22 %	3	7.69%
Father's Occupation				
Government Employee	14	37.84 %	15	38.46 %



Private Employee	20	54.05 %	3	7.69%
Entrepreneur	3	8.11%	21	53.85 %
Father's Income				
Rp. 500,000 - Rp. 999,999	-	-	1	2.56%
Rp. 1,000,000 - Rp. 1,999,999	7	18.92 %	9	23.08 %
Rp. 2,000,000 - Rp. 4,999,999	26	70.27 %	26	66.67 %
Rp. 5,000,000 - Rp. 20,000,000	4	10.81 %	3	7.69%
Mother's Age				
<=35 years old	31	83.78 %	29	74.36 %
>35 years old	6	16.22 %	10	25.64 %
Mother's Education				
Senior High School	9	24.32 %	8	20.51 %
Diploma (D3)/ Graduate (S1)	26	70.27 %	29	74.36 %
Postgraduate (S2)	2	5.41%	2	5.13%
Mother's Occupation				
Government Employee	10	27.03 %	13	33.33 %
Private Employee	15	40.54 %	1	2.56%
Entrepreneur	3	8.11%	10	25.64 %
Not Working	9	24.32 %	15	38.46 %
Mother's Income				
< Rp. 500,000	7	18.92 %	12	30.77 %
Rp. 500,000 - Rp. 999,999	4	10.81 %	6	15.38 %
Rp. 1,000,000 - Rp. 1,999,999	17	45.95 %	6	15.38 %
Rp. 2,000,000 - Rp. 4,999,999	9	24.32 %	14	35.90 %
Rp. 5,000,000 - Rp. 20,000,000	-	-	1	2.56%

Source: Primary Data

Table 2 showed that Menara Fitrah as a experimental group have pre-test (22.28 ± 3.31) dan post-test (26.15 ± 3.10) of knowledge score which higher than Rabbani as a control group with pre-test score (22.05 ± 3.89) and post-test score (26.05 ± 3.16). Study result showed that there was mean difference of children's knowledge score before and after intervention in experimental group and in control group (p -value < 0.001). Menara Fitrah as a experimental group also have pre-test (9.72 ± 2.89) dan post-test (13.69 ± 1.97) of attitude score which higher than Rabbani as a control group with pre-test score (8.00 ± 3.03) and post-test score (11.24 ± 3.67). Study result showed that there was mean difference of children's attitude score before and after intervention in experimental group and in control group

(p -value < 0.001) (Table 3). Mean difference before and after intervention was analyzed using Wilcoxon Signed Rank Test which wasn't fit of normality distribution. Table 4 showed that there wasn't mean difference of knowledge score between experimental group and control group (p -value > 0.05). However, there was mean difference of attitude score between experimental group and control group (p -value < 0.05). Mean difference between experimental and control group was analyzed using Mann-Whitney Test which wasn't fit of normality distribution.

Table 2. Mean Difference Pre-Post Test of Knowledge Score

Groups	n	Knowledge			p-value
		Pre-test $\bar{x} \pm SD$	Post-test $\bar{x} \pm SD$	Difference $\bar{x} \pm SD$	
PG IT Menara Fitrah	39	22.28 ± 3.31	26.15 ± 3.10	3.87 ± 3.36	$<0.001^*$
PG IT Rabbani	37	22.05 ± 3.89	26.05 ± 3.16	4.00 ± 3.77	$<0.001^*$

*sig < 0.05 with Wilcoxon Signed Ranks Test

Table 3. Mean Difference Pre-Post Test of Attitude Score

Groups	n	Attitude			p-value
		Pre-test $\bar{x} \pm SD$	Post-test $\bar{x} \pm SD$	Difference $\bar{x} \pm SD$	
PG IT Menara Fitrah	39	9.72 ± 2.89	13.69 ± 1.97	3.97 ± 3.22	$<0.001^*$
PG IT Rabbani	37	8.00 ± 3.03	11.24 ± 3.67	3.24 ± 3.87	$<0.001^*$

*sig < 0.05 with Wilcoxon Signed Ranks Test

Table 4. Mean Difference Between Experimental and Control Group

Groups	n	Knowledge		Attitude	
		Post-test $\bar{x} \pm SD$	p-value	Post-test $\bar{x} \pm SD$	p-value
PG IT Menara Fitrah	39	26.15 ± 3.10		13.69 ± 1.97	
PG IT Rabbani	37	26.05 ± 3.16	0.817**	11.24 ± 3.67	0.002***

**Not significant with Mann-Whitney Test

***sig < 0.05 with Mann-Whitney Test

B. Findings

The knowledge and attitudes tested in this study were children's knowledge and attitudes about nutritional and non-nutritional foods and knowledge about the introduction of food. The measurement of children's knowledge and attitudes regarding nutritional and non-nutritional foods in this study was carried out by using animated images. Study result showed that means score of knowledge and attitude before and after getting intervention about balanced nutrition between experimental and control group was statistically significant (p -value < 0.001). This study result consistent with previous study that stated nutritional education which done continuously and repeatedly can improve knowledge of nutrition and diet in children.⁹ Meanwhile, nutritional education which gave in school can makes positive influence on children's knowledge, attitudes, practice.¹⁰ Nutritional education by using media will make the target more quickly understanding about the message too.¹¹

This study result consistent with Asy'ariyah's study which stated that there was an increase in knowledge about fruit and vegetable consumption in preschoolers at Nitasari Mojo Gubeng Surabaya



Kindergarten. This is caused by storytelling using flash card media attracts students who have interesting images in it and in the storytelling using flash card media in accordance with the development of cognitive and affective phases of preschool children who are able to hone imagination, open understanding and learn to the experiences of the fairy tale characters.¹² This study only used conventional method like presentation using power points but if the nutritional education given by health workers with highly competency, the results will be very effective in increasing the means score of knowledge in children's. Zulaekah's study showed that IEC program (information, education, and communication) using printed media was quite effective in delivering about nutrition information and education although it is static by using flipcharts. However, it can convey visual messages in the form of simple images so respondents can understanding about nutritional foods easily.¹⁾

The study result showed that means score of knowledge between the experimental and control groups wasn't statistically significant (p-value = 0,817). It was caused by the two of groups have received intervention even though using different media. Nutritional education needs to be a much more comprehensive enterprise than information dissemination in order to be effective.¹⁾ Besides that, means score of attitudes between the experimental and control groups was statistically significant (p-value = 0,002). This study showed that intervention by using fairy tales can have a positive impact on improving attitudes. The means difference of attitude score in the experimental group was higher than in control group. It can caused by fairy tales have the power to be able to influence human reason and psychology extraordinary.

Storytelling was an effective way to shape behavior and be able to instill a superego to children.¹⁵ The stimulus given through fairy tales was able to change the tendency (attitude) of children to choose nutritional foods. The narrator presents pleasant impressions to the child and involves the child's emotions and creates social intimacy between the narrator and the audience. Submission of information, messages and important values about the behavior of choosing nutritional foods which contained in the fairy tale gives rise to an adaptive response like a change in a child's positive attitude towards choosing nutritional foods. Fairy tales were methods that were appropriate for the cognitive and affective development of preschoolers. After getting health education intervention about nutritional food using the fairy tale method, the respondents more understood about the content, benefits and other important things of nutritional food. It can causing a significant attitude changes in the experimental group before and after intervention.

This study was also consistent with Darajat's study about fairy tales effectiveness as a method in balanced nutritional education in elementary school children in Makamhaji Kartasura which showed that fairy tales method was able to improve children's attitudes about balanced nutrition effectively with proportion of attitudes score was changing from 29.3% to 61% after being given a fairy tales nutritional

education.¹⁶

V. CONCLUSION

There was mean difference of children's knowledge and attitudes score before and after intervention in experimental group and in control group (p-value < 0.001). There wasn't mean difference of knowledge score between experimental group and control group and there was mean difference of attitude score between experimental group and control group.

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