Conference Paper

Real Things to Improve Students' Nutritional Knowledgeat Sion Christian Education Foundation's Elementry School, Abepura, Jayapura

Fransisca B Batticaca

Nursing Department, Faculty of Medicine, Cenderawasih University, Indonesia

Corresponding Author:
Fransisca B Batticaca;
email:
sis_ppnu@yahoo.com

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Abstract

The school-age year, age 6 to 12 years, frequently define as a period of calm before the storm of adolescence. Dramatic changes occur during this period, when one compares the size of the beginning school-age child with those of one entering adolescence. The children growth more slowly in height and weight than in infancy and adolescence, but growth occurs at a steady space. The child develops new motoric skill and perfects it through practice. Mental abilities grow remarkably as the children learn to read, write, and understand mathematics and other academic subjects. As motoric and mental abilities develop through exposed to school and peer relationship, a sense of competence develop as well. Competencies also develop with a child's emotional connections to peers and others outside the family (Edelman and Mandle, 2006). The Health Ministry of Republic Indonesia (2014) reported that around 30.7% children age range 5 to 12 years malnutrition were measure with height and weight (H/W), 12,3% of them stunted, and 18,4% underweight. Papua has the highest rate of stunted prevalence 34,5 %. While prevalence of malnutrition were measured with Body Mass Index to Age (BMI/A) 11% of children range 5-12 year under weight consisting of 4,0% thin and 7,2% under weight. Papua is one of the six provinces that have higher level of underweight. Education is effective to influence school age children to choose healthy life style, one the others factor influence nutritional in school age are children nutritional status. This research purpose was to identify the influence of nutritional education using real things toward students' knowledge. This study used a quasi-experimental one-group pre-posttest design. Sample consisted of 55 people were taken using total sampling technique. Statistical analyzed showed students' knowledge in good category increased 40% after intervention. Paired t-test found there were significant differences between students' knowledge before and after intervention with *p-value* 0.070 (*p* < 0,05); CI 95%: 0.87 – 0.78. Nutritional educations using the real things were effective to improve students' knowledge. It's suggested to develop nutritional knowledge by using another method based on children's growth and development, and the environment where they live.

Keywords: School, child, nutrition, education, and real things Introduction

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1. Introduction

The school-age year, age 6 to 12 years, frequently define a period of a calm before the storm of adolescence. Dramatic changes occur during this period, when one compares the size of the beginning school-age child with those of one entering adolescence. The children growth more slowly in height and weight than in infancy and adolescence, but growth occurs at a steady space. The child develops new motoric skill and perfects it through practice. Mental abilities grow remarkably as the children learn to read, write, and understand mathematics and other academic subjects. As motoric and mental abilities develop through exposure to school and peer relationship, a sense of competence develops as well. Competencies also develop with a child's emotional connections to peers and others outside the family (Edelman and Mandle, 2006).

Edelman and Mandle (2006) also describe that during this period, children need adequate nutritious food, besides the stimulation. Their energy level is high and appears infinite as they socialized and learn. Nursing intervention in a variety of setting and in collaborate with variety of groups will facilitate school age children's to become a productive healthy adult.

Data Center and Information of Ministry of Health Republic of Indonesia predicted that in 2013 total population of Indonesia will be 248.422.956 people. The most population age range 5-9 (9,78%), 10 -14 (9,54%) While total of population in Papua 3.310.715 people with the age range 5 - 14 (18,77%) higher than national rate (Ministry of Health Republic of Indonesia, 2014).

School age children, like all children, need a well balance of diet. An average of 2200 to 2400 calories per day meets growth requirements (consumer information center, 2004 cit (Edelman and Mandle, 2006). Usually these calories are consumed in three daily meals and one or more snacks. School age children often eat less healthy foods and snacks, food low in iron and vitamin C and food that content a higher fat which their parents ate when they were in this age. This behaviors place children risk for nutritional habits, iron deficiency anemia, and chronic illness such as diabetes and hypertension (U.S Department of Health and Human service (USDHHS, 2000 cit Edelman and Mandle, 2006).

Indonesia National Health Research Fundament (*Riskesdas*, 2013 Ministry of Health Republic of Indonesia, 20014) repot that prevalence of malnutrition were measure with height to weigh (H/W) around 30.7% of children age 5 to 12 years consist of the 12,3% shunted, and 18,4% underweight. Papua has the highest rate of stunted prevalence 34,5 %. While the prevalence of malnutrition were measured by Body Mass Index to Age (BMI/A) 11% of children range 5-12 year under weight consisting of 4,0% thin and 7,2% under weight. The highest prevalence is Nusa Tenggara Timur 7,8%. Papua is one of the six provinces that has higher level of underweight.

Most factors influencing malnutrition such as food intake. Factors influencing food intake care life style, poor food choice, mass media, a multi media of television and billboard message that influence children to eat certain foods which many of those contain large amount of salt, sugar and calories. Frequency and length of watching television has been linked to childhood obesity (Edelman and Mandle, 2006).

Education gives information to children regarding choosing healthy food. Edelman and Mandle, 2006 describe that the school age children understand an abstract definition of health and sometimes the factors causing illness, but this understanding differs from that of an adult. Most school-age children perceive health – promoting behaviors as if taught in school and at home which is a way to prevent illness and stay healthy.

Effective health promotion teaching meets the preschool and school age child's cognitive level and moral level. Teaching strategy using cognitive, psychomotor, and affective senses can help children learn to be responsible for their own health. This knowledge may provide an excellent foundation for health promotion behavior during the school age.

Interviewed with the head of Sion Christian Education Foundation Elementary School found 0.1% students' nutritional statuses were underweight. While interviewed with those students found 0.75% of them lack of nutrition understanding. Nurse as an educator play an important role to inform nutritional education for school age children at community level. Real things is one of the other media were used to explain nutritional education. Because the students easy to understand through observation and explanation. The purpose of research was explain the influence of nutritional education in improve students' knowledge.

2. Research Method

This was a *quasi-experiment research with one group pre–posttest design.* This study was conducted at Sion Christian Education Foundation Elementry School in Padang Bulan Jayapura City March to November 2015. The Sample consisted of 55 fifth grade students. The Research's instrument were used consist of students' characteristics, students' knowledge of nutritional food. Data were collection using checklist trough interview and observation, and were analyzed using *t*-test.

To protect participant human rights, the study approve by researcher's Ministry of Health's permit. The Head of school and students were given an information sheet explaining the study's purpose procedure and benefits. Students who took part in the study indicated their consent by signing an informed consent about the details of the study and what their participants were informed about the study and what their participant would entail prior to being asked to sign the form to anticipate. The students who were had a problems should be refer to community health center (Ministry of Health, 2010).

3. Result

3.1. Students' characteristic

Table 1 showed that most of the students have range age between 10 to 12 year (87.3 %). While for gender, most students were female (50.9 %) slightly higher than male (49.1 %) .

Characterize	n	%
Age (year) :		
10 to 12	48	87.3
13 to 15	6	10.9
16 to 19	1	1.8
Gender		
Female	28	50.9
Male	27	49.1

TABLE 1: Student's characteristic.

Category	Nutritional Education Using Real Things			
	Pre intervention		Post intervention	
	n	%	n	%
Good Moderate	29 26	52.7 47.3	51 4	92.7 7.3

TABLE 2: Difference between students' knowledge.

3.2. Difference between Students' Knowledge

Table 2 showed most of students' knowledge increased after intervention. For good category before intervention students' knowledge were (52.7%) increased to (92.7%) or (40%). While moderate decreased (7,3%) after intervention.

3.3. Students' Knowledge difference before and after Intervention

Table 3 showed average of students' knowledge before interventions were 2.76 with SD 2.061, SE 0.2779, *t-test* 0.36. After intervention, the average of students' knowledge were 8.18 with SD 17.22, SE 2.32, mean difference 0.82, *t-test* analyze 0.36. *t-test* analyzed showed there were significant differences of students knowledge before and after intervention *p-value* 0.070 ($p < 0.05$); CI 95%: 0.87–0.78. It can be concluded that nutritional education using real things influence students' knowledge.

4. Discussion

Characteristics	n	Mean	SD	SE	t-test	ρ-value	95% CI	
Before intervention	55	2.76	2.061	0.277	0.36	*0.070	0.87	0.78
After intervention	55	8.18	17.22	2.322				
*significant								

TABLE 3: Students' knowledge differences before and after intervention.

4.1. Students' Characteristics

Most of students have range of age between 10-12 years old. They enrolled school in the rage age of 6-7 years old. Edelman and Mandle (2006) described that in this old period, dramatically changes occur. They were exposed to peers and others outside the family. The child developed new motor skill and perfect it through practice. Mental abilities grow remarkably as the children learn to read, write, and understand mathematics and other academic subjects. As the motoric and mental abilities develop through exposure to school and peer relationship, a sense of competence develops as well. The competency also develops with a child's emotional. For that reason, educate students about nutrition using real things in this period is effective in term of increasing students' knowledge.

4.2. Student's Knowledge before and after Intervention

Research found that almost all students' knowledge increased after intervention. The increased of students' knowledge after intervention because student were stimulate to remember nutritional food by showing and take the real things of food that provide nutrients. Whitney and Rolfes (2011) said that nutrition in our life would continue to affect us in major ways, depending on food that we selected.

Food nutrition and other substances contained have the action tothe body (including: ingestion, digestion, absorption, transport, metabolism, and excretion). A broader definition includes the social, economic, cultural, and psychological of food and eating. Foods product derived from plants or animals that can be absorb by the body to yield energy and nutrients for maintaining life, and the growth and repair of tissues. The six kinds of nutrients include: Carbohydrates, Lipids, Proteins, Vitamin, Mineral, and Water (Whitney; andRolfes, 2011).

Nutritional education by age incorporates into the general curriculum of school throughout their education experience is important. Despite evidence that the school can serve as an environment for nutritional health promotion education, not all school require nutrition education from kindergarten to12^{th}grade (Hockenberry and Wilson, 2007 cit Edelman; and Mandle, 2010). School nurse and teacher, as part of core concepts usually taught health in school and help them understand the role of media and culture in nutritional choice (School nutrition Association, 2006 cit Edelman; and Mandle, 2010). Real things are kind of media that used in this research to teach student nutrition.

Real things are kinds of Audio Visual Aids that is used in teaching and learning process. Real things are original, best or typical examples of something (International Dictionary of English Cambridge, 1995). Kinds of food that were used in this research consist of banana, papaya, orange, apple; vegetables like kangkung, carots; anykinds of protein such as fish, tofu, tempeh, peanut; and carbohydrates such as sago, rice, flavour, potato, and sweet potato. Those nutritional real things can be found anywhere and can be planted at schoolyard. Moreover, those foods are reach of nutrition.

This research related to this study showed (Thasim, 2013: Zulaekah 2012) most of students' knowledge increased after intervention with nutritional education. Other research found that students' knowledge was increased after educated with nutrition using apocket book (Eliana 2012). It means that nutritional education using media were effective to increase students' knowledge.

4.3. Students' Knowledge Differences before and after Intervention

Result showed that there were significant differences between students' knowledge before and after intervention with nutrition education using real things *p-value* 0.070 (*p* < 0,05); CI 95%: 0.87 – 0.78. with mean difference 0.82, *t-test* analyze 0.36. The significant differences between students' knowledge before and after intervention appeared to almost all of real things that were used to explanation nutritional education usually eat by those students. Although, nutrition education in this school has not been incorporate into curriculum.

Family, school, and community environment, influence knowledge, skill, and child behavior to promote healthy food choices and food pattern (Levinger, 2005). The aim of nutritional education is to increase motivation and performance to change nutritional behavior. Nutritional education for school age children is able to improve students' knowledge, attitude, psychomotor and nutritional status (Conteno, 2006 citAchadi, Kardjati, Damayanthi; and Putra, 2013).

Nutritional status appeared inbody condition influenced by the diet, the levels of nutrients in the body and the ability levels of the body to maintain normal metabolic integrity (Burder, 2015). Most factors influence nutritional status of school age children is nutritional knowledge. Children who are lack of nutritional knowledge may have health problems that influence their school performances.

5. Conclusion and Recommendation

There were significant differences between students' knowledge before and after intervention with nutrition education using real things. Nutritional education using real things is effective to improve students' knowledge. It is suggested to conduct research about nutritional model based on community using nursing theories and models.

Acknowlegdement

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