



## UNDERSTANDING BALANCE NUTRITION OF CHILDREN AGE 5-6 YEARS THROUGH APPLICATION NUTRITION POP-UP BOOK

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### Abstract

*Nutrition is one of the supporting parts in the development and growth of children. Before children like and consume foods that contain balanced nutrition children need to be introduced in advance about balanced nutrition. Early childhood tend to be more enthusiastic about media that are attractive, colorful and can even move, because actually early childhood is a time when children spend most of their time playing.*

*This study has a problem statement, namely whether there is a difference in understanding balanced nutrition of children aged 5-6 years based on the application of the Nutrition Pop-Up Book in RA Al-Iman Banaran, while this study aims to determine the difference in balanced nutrition with book media. that is. This research is quantitative using the Pre-experimental Design with the One Group Pretest-Posttest Design approach. The sample in this study used children aged 5-6 years in RA Al Iman Banaran which numbered 34 children. Data collection techniques used are observation and Likert scale. The method of analysis of this study was assisted by SPSS 16.0.*

*Based on the calculation results using Paired Sample t-Test shows that if the  $-t_{table} > t_{count} > t_{table}$  then it is significant, meaning that it can be interpreted that  $(-2,042 > -30,799 \text{ or } 30,799 > 2,042)$  with Sig. (2-tailed) of 0,000. The conclusion is that there are differences in the level of understanding of children's balanced nutrition through Nutrition Pop-Up Book children aged 5-6 years at RA Al Iman Banaran. The conclusion of the study is that there is an increased understanding through the media. Some suggestions for schools should facilitate books on balanced nutrition to increase children's understanding of balanced nutrition.*

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## INTRODUCTION

Nutrition is a food substance that affects the growth and development of children. Almatsier (2009) states that nutrition is a chemical bond needed by the body to perform its functions, such as producing energy, building tissue in the body, maintaining tissue in the body and regulating life processes. Nutrition is a science that analyzes the effect of food consumed on living organisms (Deddy Muchtadi, 2009). Through foods that contain balanced nutrition and according to the portion of the child, a good growth and development of children will be achieved.

According to the World Bank (2015) 8.4 million children in Indonesia experience chronic stunting and malnutrition. The Southeast Asian section shows that 42% of deaths of children under the age of five are caused by malnutrition, this indicates that there is still a low level of knowledge and understanding of early childhood about balanced nutrition, so they do not like and know the nutritional benefits of health (Ogunrinade, 2014).

The Government has compiled General Guidelines for Balanced Nutrition (PUGS) to provide information or guidelines for the community to consume and apply the principles of balanced nutrition which have been explained in the contents of the guidelines. Today's society is smart in accessing sophisticated information technology with their gadgets or devices, so parents and teachers are expected to know about the balanced nutrition. PUGS itself has been implemented in Indonesia since 1955, but at that time the term or slogan was "4 Healthy 5 Perfect". Some of the latest messages from PUGS are being grateful for and consuming various kinds of food, increasing consumption of vegetables and fruits, getting used to eating side dishes that contain high protein, getting used to eating a variety of staple foods, limiting sweet foods, salty and fatty foods, getting used to having breakfast, getting used to drinking enough water, getting used to reading labels on food product packaging, washing hands using soap and running water, doing enough physical activity and maintaining a normal body weight (MOH, 2014).

The occurrence of nutritional problems and attitudes about poor nutrition in children is one of them caused by a lack of knowledge of nutrition (Marisa, 2014). Knowledge of nutrition that can not be said is also due to lack of knowledge from parents and teachers about nutrition for children. Knowledge itself is certainly different from understanding, the meaning of knowledge that is according to the Big Dictionary of Indonesian Language comes from the word "know" which means to understand after seeing while understanding is derived from the word "understanding" which means process, action understanding or understanding. Understanding of balanced nutrition of children is currently very necessary, because it starts from the planting of an understanding of balanced nutrition so that the child will choose when the child is outside the scope of supervision of parents or teachers so that they are able to determine foods that support children's growth and development.

In applying balanced nutrition in daily life, of course it is not the role of parents and teachers, but the desire of children to like and consume balanced nutrition. The introduction of balanced nutrition in children can be through various ways, one of which is using a media to attract children's interest. Early childhood tend to like media that are attractive, colorful and can even move, because actually early childhood is a time when children spend most of their time playing. Basically PAUD learning is part of providing stimulation in the development and growth of early childhood.

Many understanding of learning media from several experts, one of which according to Heinich in Azhar Arsyad (2007) states that learning media is an intermediary that delivers information between sources and recipients, such as television, film, photos, radio, audio recordings, projected images, materials printed material, and the like. Pop-up itself is a learning media that can arouse children's imagination and curiosity of children which are packaged in a 3-dimensional book, the book can arise when opened and can even be pulled and moved.

Based on observations in August 2018, RA Al Iman Banaran is also still limited to learning media, especially media that introduce balanced nutrition. With the introduction of balanced nutrition, it becomes a good start for children's knowledge in choosing food. Early childhood tends to choose what is desired but the introduction of balanced nutrition is expected to make children understand about the dangers of consuming unhygienic food and knowing the benefits of foods that contain balanced nutrition for health. On the other hand, the institution has a school canteen that sells unhygienic food, as well as snacks containing preservatives and MSG, sausages, instant noodles, meatballs that are widely traded on the market without knowing what content is contained in the food.

Other findings in the field also showed that the lack of enthusiasm of parents to provide children's schooling was indicated by the majority of children never carrying food supplies. This becomes a trigger for children to buy food sold in the school canteen or outside the school. With this lack of enthusiasm from parents, it can also be said that the actual understanding of balanced nutrition is still low. In this case, researchers focus more on children because the role for parents should be carried out and followed up by the institution. Researchers want to instill a balanced understanding of nutrition with children with concrete examples of problems faced by children that are packaged in a book Pop-Up. Pop-up according to Nila in Bluemel and Taylor (2014) a book that displays the potential for movement and its interaction through the use of paper as a material for folds, rolls, shapes, wheels or turns.

## METHODS

This section presents information on methodological aspects of studies that provide sufficient material used in studies (Nutrition Pop-Up Book), subjects, data collection, and data analysis. This Pop-Up tells about balanced nutrition which is packed with a story. Pop-Up has 12 pages, each page has its own story. As in one of the pages entitled "One of my dishes is very tasty". The title tells about the importance of the

contents of one plate of food to be consumed daily, the story is packaged by raising problems that are often faced by children in daily life. The following is a cover image and one of the contents of the Nutrition Pop-Up Book.

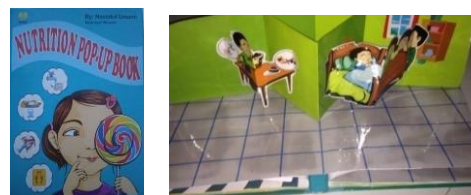


Figure 1. The book cover and one of the pages Nutrition Pop-Up Book

Researchers' compiling the media Nutrition Pop-Up Book using intrinsic elements that combine problems about child nutrition in everyday life. For example, in determining the setting of the story according to the home and school environment. Each storyline is inserted balanced nutrition messages, Pop-Up aims to convey 4 pillars of balanced nutrition to children aged 5-6 years. Therefore, using instructional elements adapted to problems encountered by children in everyday life. It is hoped that the Nutrition Pop-Up Book can provide an understanding of balanced nutrition for children aged 5-6 years, so that children can implement the messages in the Pop-Up in their daily lives.

This study uses a quantitative method with the type of pre-experiment research with the research design of One Groups Pretest-Posttest Design. This study uses a treatment in the form of a media Nutrition Pop-Up Book. Retrieval of this study data using the method of observation and Likert scale. Deep sampling technique This study used a technique purposive sampling with a number of 34 respondents in class B RA Al Iman Banaran. The researcher gave 12 treatments or treatments. The data analysis method used in this study was to use the analysis Paired Sample T-test using the program SPSS 16.0.

The results to be discussed in this study are to explain the understanding of balanced nutrition of children aged 5-6 years based on the application of Nutrition Pop-Up Book in RA Al

Iman Banaran with statistical calculations performed with the help of SPSS 16.0 with analysis of Paired Sample T-test. This research was conducted in October-November 2018.

## RESULT AND DISCUSSION

In this section we will discuss the results which include hypothesis testing, average values, and the value of pretest and posttest value of understanding balanced nutrition of children aged 5-6 years using analysis Paired Sample T-test for significance test.

Results of paired t-Test hypothesis test with a confidence level of 95% or  $\alpha = 0.05$  with the number the sample in the experimental group amounted to 34 children,  $df = 34-1$  the results were 33, and obtained  $t_{table} = 2.042$ . Table data shows that obtained  $t_{count} = -30.799$  if the  $-t_{table} > t_{count} > t_{table}$  is significant, meaning that it can be interpreted that  $(-2,042 > -30,799$  or  $30,799 > 2,042)$  the result is significant.  $H_0$  criteria are rejected and  $H_a$  is accepted if the probability value (sig 2 tailed)  $< 0.05$ . Then the above results are obtained that the probability value (sig 2 tailed) is  $0,000 < 0,05$ , then  $H_a$  is accepted and  $H_0$  is rejected. In this study also obtained the average value of the scale of understanding balanced nutrition of children aged 5-6 years based on the application of the Nutrition Pop-Up Book, as follows:

| Paired Samples Statistics |          |        |    |                |                 |
|---------------------------|----------|--------|----|----------------|-----------------|
|                           |          | Mean   | N  | Std. Deviation | Std. error mean |
| Pair 1                    | Pretest  | 58.00  | 34 | 4,893          | 839             |
|                           | Posttest | 100.56 | 34 | 10.160         | 1,742           |

Based on the table above it can be seen that the average (mean) changes in value which is 58.0% to 100.56%, which means there is an increase in understanding balanced nutrition of 42, 56%. These results can be concluded that the (mean mean) understanding of balanced nutrition of children aged 5-6 years experienced a significant difference after being given treatment or treatment using the media Nutrition Pop-Up Book.

Table 3. Pretest Results Understanding Balanced Nutrition

|       |        | Frequency | Percent |
|-------|--------|-----------|---------|
| Valid | Low    | 13        | 38.2%   |
|       | Medium | 18        | 52.9%   |
|       | High   | 3         | 8.8%    |
|       | Total  | 34        | 100 %   |

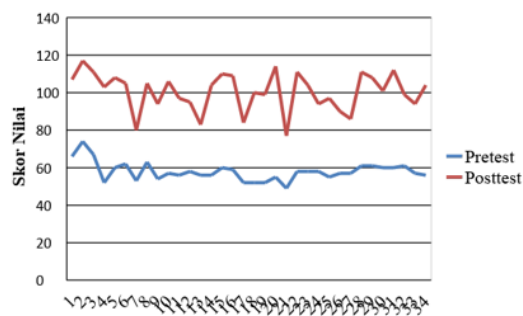
From the table above shows that the level of understanding balanced nutrition of children aged 5-6 years is 3 category results, namely 38.2% in the low category of 13 children, 52.9% in the moderate category with 18 children, and 8.8% in the high category with 3 children.

Table 4. Posttest Results of Children's Balanced Nutrition Understanding.

|       |        | Frequency | Percent |
|-------|--------|-----------|---------|
| Valid | Low    | 5         | 14.7%   |
|       | Medium | 12        | 35.3%   |
|       | High   | 17        | 50.0%   |
|       | Total  | 34        | 100%    |

Table above data shows that the level of understanding of balanced nutrition of children has increased where there is 50% in the high category with the number of children 17 while 35.3% were in the moderate category with 12 children and 14.7% in the low category with 5 children. The results of treatment conducted by researchers can be said that there is an increase in understanding of balanced nutrition of children who previously 38.2% of children were in the low category, 52.9% in the moderate category and 8.8% in the high category. Giving treatment is very clearly affecting the average level of understanding of balanced nutrition of children so that there is a positive change in understanding.

Graph 1. Pretest Value and Posttest Value



This graph explains that each child has a change in understanding balanced nutrition at the time before being given treatment or treatment using the Nutrition Pop-Up Book and after being treated with the pop-up.

Understanding balanced nutrition through the application of Nutrition Pop-Up Book can have a positive impact on children, especially early childhood who tend to prefer interesting learning media. According to Gagne and Briggs in Azhar Arsyad (2007) said that learning media includes tools that are physically used to convey the contents of teaching material. In other words the media is a component of learning resources or physical vehicles that contain instructional material in the student environment which can stimulate students to learn.

Learning media is a tool that can support the delivery of balanced nutrition material, through the book Pop-Up that is in line with the theory put forward by Dzuanda (2011) which states that Pop-Up books are media that can stimulate and stimulate children's imagination and increase knowledge to provide depiction of the shape of an object or object recognition. Thus, the use of media Pop-up Book carried out in a re-periodic manner can instill and improve the understanding of balanced nutrition sufficient for children aged 5-6 years. The results of research conducted by Wydiastuti (2018) show that stimulation provided through the Pop-Up Book can reduce anxiety in deaf children in dealing with unpleasant dental examinations. Other research results conducted by Tisna Umi Hanaifah on the use of thematic-based Pop-Up Book media to improve verbal-linguistic intelligence of children aged 4-5 years

(experimental studies at Pembina Bulu Temanggung State Kindergarten) in 2014 showed a change in behavior in both groups. given treatment, there were significant changes in the experimental group which were seen to increase in verbal-linguistic intelligence.

This study is in harmony with the two results of the standard described. Understanding of balanced nutrition of children aged 5-6 years after applying the Nutrition Pop-Up Book shows that after seeing the difference in the value of pretest the percentage is 58.00%, while the posttest value of the percentage is 100.56%. Considering the calculation of the value of the results explains that the difference after being given treatment through Pop-Up is 42.56%.

## CONCLUSION

Based on the results of the research and discussion it can be concluded that there is a difference in understanding of balanced nutrition of children aged 5-6 years based on the application of the Nutrition Pop-Up Book. This research can provide a reference for schools, teachers, and parents in knowing the understanding of balanced nutrition of children aged 5-6 years through the media Nutrition Pop-Up Book.

This study has limitations beyond the control of researchers that make activities during the study less than perfect. As for some of the issues, the conditions in the classroom were not conducive because the upper floor of the school had connected directly to MI Al Iman Banaran students so the voices of the class on the upper floors were heard very clearly and were quite disturbing when the researchers gave treatment. Another obstacle is that the school only gives 10-15 minutes of treatment so that it makes the researcher less flexible in conveying stories in the Nutrition Pop-Up Book.

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