



# Early Childhood Nutrition Education Service Model for the Community in the Pandemic Era

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## Abstract

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**BACKGROUND:** This study aims to find a model of early childhood nutrition education services for the community during the pandemic era.

**AIM:** In detail, the purpose of this study is to describe increasing public knowledge about the importance of nutrition for early childhood and to describe increasing public positive attitudes about the importance of nutrition for early childhood during the pandemic era.

**METHODS:** The model of early childhood nutrition education services for the community in the pandemic era has proven to be effective and significant in public knowledge about the importance of nutrition in early childhood education (PAUD) programs.

**RESULTS:** It is also proven by the results of measuring cognitive values and affective values before and after the Early Childhood Nutrition Education Service for Communities during the pandemic era has proven to be increasing.

**CONCLUSION:** The AUD nutrition education service model for the community in the pandemic era has a significant effectiveness on the knowledge of parents and the community about AUD nutrition and on the positive attitudes of parents and the community in the PAUD program.

## Introduction

Early Childhood is experiencing a period of rapid growth and development, children's health and nutrition greatly affect the process of growth and development. Therefore, health care and nutrition are indispensable for optimizing child development. Presidential Regulation No. 60 of 2013 concerning Integrative Holistic Early Childhood Development (PAUD-HI) [1] has mandated the importance of fulfilling the essential needs of early childhood as a whole which includes aspects of health, nutrition and care, and education and care, as well as protection of welfare so that children can grow and develop independently optimal.

Related to the importance of PAUD, community participation in early childhood education is very important (Soedjiono, 2013) [2]. The government and the community need to find the best solution, especially for the problems that cause PAUD in the most of our society to have not received serious attention, especially in fulfilling balanced nutrition for immune stability during the COVID-19 pandemic.

Health is very important as a support for maximum child development (Wiyono, 2017) [3].

According to Law No. 36 of 2009, a person's level of health is influenced by good nutritional status. Children who have good nutritional status are not susceptible to diseases, including coronavirus disease (COVID-19). Therefore, by knowing the nutritional status, efforts can be made to improve the level of public health from an early age. The role of schools through good governance or good school governance in supporting educational services can be fulfilled (Elyana, 2018) [4].

Balanced nutrition is nutrition and nutrients that are adapted to the needs of the body, not excessive and not lacking (Anhusadar, 2021) [5]. A balanced nutritional diet is consuming foods that contain nutrients and nutrients tailored to the body's needs while still paying attention to various principles such as diversity of food types, body activities, ideal body weight, and age factors (Development Team, 2017) [6]. Fulfillment of nutrition in the first 1000 days of a child's life helps the growth of brain cells (Wulandari, 2021) [7]. Important nutrients needed by early childhood are protein, carbohydrates, vitamins, B1, B6, folic acid, iodine, iron, zinc, AA, DHA, sphingomyelin, sialic acid, and amino acids such as tyrosine and tryptophan.

Facts on the ground state that most people, especially parents, do not really understand the importance of balanced nutrition in early childhood.

Consumption of instant and fast food is the choice of parents to find solutions for children to eat according to the taste. This condition will determine the growth and development of a child is not optimal.

The new community prioritizes clothing and food (Suharto, 2017) [8], because of the economic conditions they have to face. Many parents think that parental education about balanced nutrition is not important and not too urgent, so parents do not need to take balanced nutrition education through PAUD services. Even though all these assumptions are wrong, nutrition education in the COVID-19 pandemic through integrated holistic PAUD services will help develop children's potential and help prepare children to face the future with body resistance through balanced nutrition, especially during the COVID-19 pandemic.

An empirical study of the number of parents who do not understand the importance of balanced nutrition in children through questionnaires distributed to 100 respondents that 60% answered following the child's appetite, 20% followed the child's eating habits, 10% of the contents of my plate, and 10% answered that they did not know.

Early Childhood Nutrition Education Services at Integrative Holistic PAUD for the community will provide services to the community or parents in terms of knowledge and skills in fulfilling balanced nutrition for early childhood during the COVID-19 pandemic in a sustainable manner. Parents are the determinants of fulfilling balanced nutrition with the management of the parenting system (Elyana, 2018) [4].

Based on the background of the above problems, the main problem in this research is how to implement the Early Childhood nutrition education service model for the community? In general, this study aims to find a model of early childhood nutrition education services for and the community. In particular, this study aims to develop a model of early childhood nutrition education services in detail as follows: (1) Describe the increase in knowledge of parents and the community about early childhood nutrition and (2) describe the increase in positive attitudes of parents and the community in the early childhood nutrition education model.

## Methods

The development of this model uses quantitative and qualitative approaches. Brannen (2005) [9], Sukmadinata, (2005) [10], and Ghazali (2016) [11] state that qualitative and quantitative approaches can practically be used simultaneously. The quantitative approach is used by researchers because the data collected are in the form of numbers

that reflect the quantity of the observed object characteristics. Meanwhile, the qualitative approach was used by researchers because the data collected in the form of descriptive words that describe not only what happened, but also qualify the description based on the nature and description of clearly photographing objects.

The trial of this model also uses the experimental method. This method is intended to carry out field trials to determine the effectiveness of the developed model. Experimental method used to apply the methods of research and development (research and development). Borg and Gall (1983) [12] state that research and development is a process used to develop and validate educational products. The product developed in this research is not only in the form of material objects, such as textbooks, learning files but also in the form of procedures and processes such as learning methods, learning organizing methods, and learning group organizing methods. The development of this model produces a product in the form of an early childhood nutrition education service model for the community. Product development is produced using several methods, namely, descriptive, evaluative, and experimental methods.

Characteristics of data collection in qualitative research are the researcher as an instrument while the characteristics of data collection in quantitative research are the accuracy of researchers in formulating and using instruments based on the variables studied. Considering that in the trial of this development model using both research approaches at the same time, in addition to being an instrument for data collection, researchers also equip themselves with structured and unstructured interview guides and observation tools.

Achievement Test to Measure Increased Community Knowledge about Early Childhood Nutrition Services: The achievement test is used to measure the increase in public knowledge about early childhood nutrition services (AUD). The variable of increasing public knowledge about AUD nutrition services includes several indicators, namely: Parents' understanding of the stages of child development, parents' understanding of providing nutritious food to children, parents' understanding of child behavior problems, parents' understanding of child care, parents' understanding of rights, and needs of early childhood.

Instrument for Identifying Positive Community Attitudes in the AUD nutrition service program: The instrument used to reveal the positive attitudes of parents/community in AUD nutrition education service activities was formulated by the development team themselves in the form of an attitude scale. The positive attitude variable of parents/community in the AUD nutrition service program includes several indicators, namely: Attending meetings, being active in asking questions about AUD nutrition, being open with resource persons and other individuals, showing

conducive personal relationships, empathy in the form of action, sense of responsibility, and sense of belonging. Portfolio to Measure Parents/Community Skills in Preparing Nutritious Meals for AUD: Portfolio is one of the methods used to measure the ability of parents/community in preparing nutritious food menus for AUD.

Utanto *et al.* (2017) [13] some reasons for using portfolios include: (a) Helping the development team to assemble various tangible evidence of the results in the form of works, (b) encouraging parents to take advantage of the work they have made, (c) providing an overview of the results. Works, and (d) as a means of evaluating the results of educational services for the community.

## Results and Discussion

The results and discussion of this study are divided into two parts. The first part presents the results and discussion on increasing public knowledge about the importance of nutrition intake for early childhood. The second part presents the results and discussion on increasing the positive attitude of the community in the activities of early childhood nutrition education services.

### ***The nutrition education service model increases public knowledge of early childhood nutrition in the pandemic era***

Empirically, it is proven that there is an increase in the knowledge of parents and the community about early childhood nutrition services. To describe the condition of the subject can be obtained through the preparation of categories that group the subject into certain groupings ranging from low, medium, and high. In this study, there are two variables, namely, cognitive and affective, to describe the results of research from these variables, each is categorized into three categories, namely, low, medium, and high.

The number of cognitive instrument questions is 36 items, with a score of 1 and 2, respectively, so the minimum value for the cognitive variable is  $36 \times 1 = 36$  while the maximum score is  $36 \times 2 = 72$ , so the categorization is as follows:

$$\text{Interval length} = \frac{\text{SkorMaks} - \text{SkorMin}}{3}$$

$$= \frac{72 - 36}{3} = 12$$

Hence, categories: Low score 36–48; Medium score 49–60; and High score 61–72

An Overview of Parents' and Community's Knowledge of AUD Nutrition Before AUD Nutrition

Education Services was Conducted for the Community. The results of measuring cognitive values before the AUD Nutrition Education Service for the Community are presented:

Based on Table 1, it can be seen that before the AUD Nutrition Education Service for the Community, the cognitive scores of parents were mostly in the medium category, namely, 26 people (86.7%), while in the high category only 4 people (13.3%). Based on the calculation of the value, the average cognitive value of parents before the AUD Nutrition Education Service for the Community was carried out was 56.73 with a standard deviation of 3.796, while the lowest value was 50 and the highest value was 63.

**Table 1: Cognitive value measurement results before AUD nutrition education services for the community**

Category	Value interval	Frequency	Percentage
Low	36–48	0	0.0
Currently	49–60	26	86.7
Tall	61–72	4	13.3
Amount		30	100.0

Mean = 56.73, SD = 3.796, Min = 50, Max = 63.

The following is a description of the knowledge of parents and the community about AUD nutrition after AUD nutrition education services are provided for the community. The results of measuring cognitive values after learning the Early Childhood Nutrition Education Service Model are presented:

Based on Table 2, it can be seen that after the PAUD Education Service for the Community was carried out, the most of the parents' cognitive scores were in the high category, namely, 23 people (76.7%), while in the medium category, there were 7 people (23.3%). Based on the calculation of the value, the average cognitive value of parents after the AUD Nutrition Education Service for the Community was carried out was 62.67 with a standard deviation of 2.523, while the lowest value was 58 and the highest value was 67.

**Table 2: Cognitive value measurement results after the AUD nutrition education service were done for the community**

Category	Value interval	Frequency	Percentage
Low	36–48	0	0.0
Currently	49–60	7	23.3
Tall	61–72	23	76.7
Amount		30	100.0

Mean = 62.67, SD = 2.523, Min = 58, Max = 67.

The effectiveness of the AUD nutrition education service model for the community to increase the knowledge of parents and the community about AUD nutrition is as follows. Empirically, it is proven that the model of early childhood nutrition education services for the community in the pandemic era is effective in increasing knowledge about the importance of balanced nutrition for early childhood to increase immunity to support optimal growth and development of early childhood. The results of the t-test calculations are presented in the following table.

Based on Table 3, it can be seen that before the AUD Nutrition Education Service for the Community was carried out, the average value of parents' cognitive

**Table 3: The effectiveness of the AUD nutrition education service model for the community to increase parents and community knowledge about AUD nutrition**

Variable	Initial average	Final average	Value of Sig.	Information
Cognitive	56.73	62.67	0.000	Significant

abilities was 56.73 then increased to 62.67 after the AUD Nutrition Education Service was carried out for the community during the pandemic era.

From the t-test results obtained a significance value of 0.000 because the value of sig.  $0.000 < (0.05)$ , it is concluded that the AUD nutrition education service model for the community has a significant effectiveness in increasing the knowledge of parents and the community about AUD nutrition. By having knowledge about the nutritional needs of early childhood, people and the community are able to make and provide balanced nutritional intake. According to Krathwohl and David (2002), the ability to create and compose or create something is the ability of high-level knowledge.

**Increasing the positive attitudes of parents and society in early childhood nutrition education services in the pandemic era**

In this study, the number of questions on the affective instrument was 25 items, with scores of each item 1, 2, 3, and 4. Thus, the minimum score for the affective variable was  $25 \times 1 = 25$  while the maximum score was  $25 \times 4 = 100$ . The categorization is as follows:

$$\text{Interval Length} = \frac{\text{SkorMaks} - \text{SkorMin}}{3} = \frac{100 - 25}{3} = 25$$

Hence, low category: Score 25–50; currently: Score 51–75; and tall: Score 76–100

The following is a description of the positive attitude of the community in the PAUD program before AUD nutrition education services were carried out for the community during the pandemic era. The results of measuring affective values before the AUD Nutrition Education Service were carried out for the Community in the Pandemic Era are presented in the following table:

Based on Table 4, it can be seen that before the PAUD Education Service for the Community was carried out, the affective values of parents were mostly in the high category, namely, 24 people (80.7%), while in the medium category, there were 6 people (20.0%). Based on the calculation of the value, the average affective value of parents before the PAUD Education

**Table 4: Affective value measurement results before AUD nutrition education services for the community**

Category	Value Interval	Frequency	Percentage
Low	25–50	0	0.0
Currently	51–75	6	20.0
Tall	76–100	24	80.0
Amount		30	100.0

Mean = 82.13, SD = 8.233, Min = 61, Max = 94.

Service for the Community was carried out was 82.13 with a standard deviation of 8.233, while the lowest value was 61 and the highest value was 94.

The following is a picture of the positive attitude of parents and the community in the PAUD program after AUD nutrition education services were carried out for the community during the pandemic era. The results of measuring affective values after the AUD Nutrition Education Service for the Community during the Pandemic Era are presented in the table:

Based on Table 5, it can be seen that after the AUD Nutrition Education Service for the Community was carried out, the affective values of parents were mostly in the high category, namely, 29 people (96.7%), while in the medium category, there were 1 person (3.3%). Based on the calculation of the value, the average affective value of parents after the AUD Nutrition Education Service for the Community during the Pandemic Era was 84.43 with a standard deviation of 4.636, while the lowest value was 73 and the highest value was 91.

**Table 5: Affective value measurement results after the AUD nutrition education service are done for the community**

Category	Value interval	Frequency	Percentage
Low	25–50	0	0.0
Currently	51–75	1	3.3
Tall	76–100	29	96.7
Amount		30	100.0

Mean = 84.43, SD = 4.636, Min = 73, Max = 91.

In the following, the results of the t-test of the effectiveness of the AUD nutrition education service model for the community in the pandemic era are presented on the positive attitudes of parents and the community in the PAUD program. The results of the t-test calculations are presented in the table.

Based on Table 6, it can be seen that before the AUD Nutrition Education Service for the Community in the Pandemic Era, the average value of the affective ability of parents was 82.13 then increased to 84.43 after the AUD Nutrition Education Service for the Community was carried out in the Pandemic Era. From the t-test results obtained a significance value of 0.016 because the value of sig.  $0.016 < (0.05)$ , it is concluded that the AUD Nutrition Education Service Model has a significant effectiveness on the Positive Attitudes of Parents and Society in the PAUD Program. According to Utanto (2017) [14] in Surviving in the Limitations: Education Implementation Patterns in Coastal Communities, the willingness and awareness to accept education programs by the community, especially accompanied by an increase in positive attitudes from the community, are a way to survive in all limitations to continue to run educational programs under any conditions, such as during a pandemic.

**Table 6: The effectiveness of the early childhood nutrition education service model for the community on the positive attitudes of parents and society in the PAUD program**

Variable	Initial average	Final average	Value of Sig.	Information
Affective	82.13	84.43	0.016	Significant



## Conclusion

From the results of data analysis that has been carried out in the trial of the AUD Nutrition Education Service model for the Community in the Pandemic Era, it can be concluded that the AUD nutrition education service model for the community in the pandemic era has a significant effectiveness on the knowledge of parents and the community about AUD nutrition and on the positive attitudes of parents and the community in the PAUD program. The effectiveness of the PAUD education service model for the community is evidenced by the increase in the results of the pre-test and post-test that have been carried out. The results of measuring cognitive values and affective values before and after PAUD Education Services for the Community are carried out.

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