



## The Effect of *Android* Application-Based Counseling on The Knowledge of Mothers of Toddlers Related to Complementary Feeding

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### ABSTRACT

Malnutrition is a severe health problem with a high prevalence in Indonesia and must be addressed immediately. Mother's knowledge of complementary foods can affect the nutritional intake of toddlers. This indirectly affects the nutritional status of toddlers. A lack of maternal knowledge about complementary food will prevent toddlers from being less nutritionally inappropriate. This study aims to determine the influence of counseling with Android application media on the understanding of toddler mothers about complementary food. This type of research is research and Development (RnD) research with six stages carried out by researchers. The sample for the limited-scale test of this study was the mothers of Ujunggede Village toddlers, totaling 16 mothers of toddlers by the criteria of inclusion and exclusion. Normality test results obtained customarily distributed data for data analysis using paired sample t-test. The results of the research showed a p-value of  $0.001 < 0.05$ . The results of this study show that counseling with the IBBAL complementary feeding application can increase the knowledge of toddler mothers about complementary food.

**Keywords:** toddler, malnutrition, counseling, knowledge, android

### INTRODUCTION

Undernutrition is a nutritional condition based on body weight-for-age, in which the weight is not in the length of the age that should be accomplished by the children (A. C. Rahma & Nadhiroh., 2017). This situation usually is followed by a need for more intake of carbohydrates, proteins, fats, and vitamins, which are needed by the body.

Based on Nutritional Status Monitoring, Indonesia's Health Profile data on under-five malnutrition in Central Java increased from 2017 to 2018 from 13.30% to 17.00% (Ministry of Health., 2017). According to Basic Health Research Results (2018), the number of toddlers who experience malnutrition and undernutrition is 14.2%. Meanwhile, in 2021, based on the 2021 Indonesian Nutritional Status Study (SSGI) conducted by the Health Research and Development Agency (Balitbangkes) of the Ministry of Health in collaboration with the Central Statistics Agency (BPS), the percentage of underweight (underweight and very underweight) in toddlers was 17% (Ministry of Health RI., 2021). This shows that there was an increase in the prevalence of the number of toddlers

with undernourished children in Indonesia. Data from the Health Profiles of the Pematang District Health Office (2020) shows that the coverage of toddlers below the red line or malnourished toddlers in Pematang Regency (2020) at about 5.44% out of all the number of toddlers weighed this figure increased compared to 2019 at 4.24%. This shows that there is still a problem of undernutrition in Pematang district, with an increase in prevalence from the previous year.

Improper breastfeeding can lead to several possible dangers, such as diarrhea, allergies, constipation, other digestive disorders, and respiratory disorders in toddlers. This is because the digestive organs of toddlers have not been able to fully digest the food. In addition, improper breastfeeding patterns also affect the nutritional status of toddlers. Giving complementary feeding is also an important activity and needs to be considered by parents of infants because the age of 6-9 months is an important period for babies to get stimulation of motoric skills. If this is missed, there may be an increase in feeding problems in toddlers. Therefore, in an effort to overcome the problem of malnutrition, it is necessary to improve the quantity and quality of complementary feeding.

In fulfilling the nutritional intake of toddlers, mothers have an important role in the growth of babies. Judging from the attitude of food selection, nutritional knowledge is closely related to infant feeding practices. Without effective and efficient counseling or counseling, growth and development monitoring will not be able to effectively reduce malnutrition in infants (Y. Rahma & Suhartini, 2020). Lack of knowledge and perception of the requirements and values of food in toddlers are common. The lack of maternal knowledge about toddler nutrition will also have an impact on the fulfillment of nutrition in toddlers because knowledge is a very important domain of the formation of one's behavior, including behavior in fulfilling nutrition. Lack of knowledge about breastfeeding and complementary foods can cause toddlers to experience malnutrition, because the mother still lacks insight into food ingredients that contain high nutrition it will result in the diversity of food given, portions of food that are not appropriate for the age of toddlers.

The development of technology in Indonesia is currently very rapid, marked by the highest use of *web browser* applications in Indonesia as many as 88.3 million users, then for internet users themselves in Indonesia it has reached 143.26 million people. More than half of the total population of Indonesia are internet users (Rahmawati et al., 2021). Based on data from the Ministry of Communication and Information (2015), mobile phone users were in the vicinity of 128% or around 315 million users, where the average Indonesian has 1-2 active mobile phones. As many as 41.7% use Android-based *smartphone* type phones.

Based on the description, researcher demonstrated an application made by the researcher himself named "IBBAL complementary feeding (Ibu Bestari Bayi Bayi Lahap MP-ASI)" contains information about complementary feeding, including the understanding, timing of complementary feeding according to the age of toddlers, the purpose of giving complementary feeding, signs that the baby is ready to receive complementary feeding, types and forms of complementary feeding, complementary feeding patterns, complementary feeding frequency and complementary feeding recipes with pictures and doses. After it is understood by mothers, the knowledge and skills can be

meaningful in increasing knowledge and change the behavior of mothers in providing complementary foods.

The use of applications about nutritional intake and complementary feeding in mothers is expected to increase the knowledge of mothers under five, as well as in previous research conducted by Okinarum et al., (2017) stated that there was an increase in maternal knowledge in the intervention group compared to the control group. In other study by Nazilia et al., (2020) with the results of subjects experiencing increased knowledge from before and after giving the Gold application.

Based on the background and preliminary studies that have been conducted, researchers are interested in conducting research entitled "The Effect of *Android* Application-based Complementary Feeding Counseling on Mothers Knowledge about Complementary Feeding " which was carried out in the working area of the Losari Health Center, Pemalang. Researchers designed the *android* application used in this study to adapt to the needs aimed at providing education to mothers of toddlers about complementary feeding with material that has been adjusted for respondents. The advantages of this application include an easy-to-use application without having to be given a guide first, language that is easy to understand and there are pictures on each *slide* of its appearance. Features present complementary feeding information, toddler nutrition, and the latest toddler supplementary food recipes sourced from the Pemalang Regency Health Office. The application can be used with or without using the internet network, there is a *link* connected to the Gelanganting nutritional status calculation application owned by the Losari Health Center to find out the nutritional status of toddlers and monitoring the nutritional status of toddlers every month by nutritionists from a community health center.

## **METHODS**

The method used in this study is *Research and Development (RnD)*. According to Sugiyono, research and development is a research model used to produce certain products. Sugiyono described the steps in using the *R&D* method, namely (1) potential and problems, (2) collecting information, (3) product design, (4) design validation, (5) design improvement, (6) product trials, (7) product revisions, (8) usage trials, (9) product revisions, (10) mass product manufacturing. However, in this study, researchers only applied six steps out of ten steps formulated by Sugiyono. These steps include (1) potential problems, (2) data collection, (3) product design, (4) design validation, (5) product revision, (6) limited product trials. The reason researchers only take up to six stages of research is because they have considered various things, namely cost, energy and time. The following are the steps of *RnD* research based on the principles of research by Sugiyono that will be applied in this study is as follows:

### **Stage 1: Potential Problems**

The formulation of the problem in this study begins with a literature study by searching the data listed in the latest health profile data, e-PPGBM data belonging to the Losari Health Center,

and visiting the posyandu to see the latest nutritional status data of toddlers, which reaches 90% of the number of mothers who have personal *smartphones*.

### **Step 2: DataCollection**

After the potential and problems can be shown factually, it is then necessary to collect various information that can be used as material for conducting a preliminary survey and visiting the Losari Health Center to collect secondary data on the nutritional status of toddlers in the Losari Health Center area. After that, researchers conducted a preliminary survey by visiting one of the posyandu in Ujunggede Village to make observations to analyze the needs. Observations were made through short interviews with 10 mothers of toddlers at Posyandu Eka Melati, Ujunggede Village aimed at listening and collecting questionnaires on how the application was needed. In addition, observations and focus *group discussions* on agencies (nutritionists at the Losari Health Center) related to the research instruments were carried out. Using these results and relevant literature review, the instruments were then developed and formulated, starting from their form, content, benefits, how to make them, users, and others.

### **Step 3: Product Design Development**

After conducting preliminary studies and analyzing the needs, researchers make application product designs, both regarding materials, features, and application design. This stage is carried out by researchers in collaboration with students majoring in *IT* to produce good product designs. The creation of this application product design uses two applications and the main editor, namely *Powerpoint 2010*, *iSpring Suit 9*, and *Website2 APK Builder*.

### **Step 4: Expert Validation Test**

In the expert validation test stage, there are two *points* that are assessed, including the material validation test and the design validation test. The material validation test was carried out by the nutritionists of the community health centers by Mrs. Diah Retnowati, S.Gz, Mrs. Khofifatis Salisah, S.Gz, and Village Midwives, namely Mrs. Sri, S.Tr.Keb. The design validation test was Mrs. Dwi Pangesti Aprilia, M.Pd, Muhammad Rifa'i (Student of *IT* Department, Stmik Widya Pratama, Pekalongan), and Wafiq Marzuqi Mubarak (Student majoring in Visual Communication Design, Indonesian Institute of the Arts, Yogyakarta). In this study, a measurement scale with a Likert scale will be used.

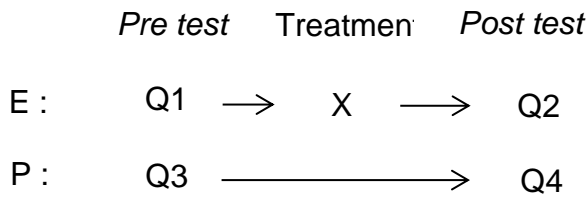
### **Step 5: Product Revision**

Product revision is carried out with the aim of correcting products that have errors or errors in their manufacture. The product revision in this study was carried out after an expert validation test. Getting data on the shortcomings of this application, the researcher revised it according to the validation of media and material experts.

### **Phase 6: Limited Trial**

This stage is the primary data collection step with a *quasi-experimental* research design with a *pre-test* and *post-test* control *group design*. In this stage, researchers conduct counseling about

complementary feeding to respondents who are mothers of toddlers with the IBBAL complementary feeding application media that has been made. The form of this research design is as follows:



Information:

Q1: *Pre-test*, which is a measurement of knowledge and attitude of previous treatment

X: The intervention provided is counseling on complementary feeding and balanced nutrition through android application media

Q2: *Post-test*, which is the measurement of maternal knowledge after treatment

Q3: *Pre-test* comparison group

Q4: *Post-test* comparison group

The population in this study was all mothers with 6-24 months of toddlers who were recorded at the Losari Health Center and lived in Ujunggede Village as many as 152 toddlers. The sample selection method used in this study was the Purposive Sampling technique with a minimum number of samples using Stanley Lemezhow's formula, which was with a sample of 16 mothers under five.

Samples are taken based on inclusion and exclusion criteria; populations that meet these criteria will be used as research samples. The inclusion and exclusion criteria used in this study include:

#### 1. Inclusion Criteria

Inclusion criteria are common characteristics of research subjects in target and source populations. Some of the inclusion criteria in this study are as follows:

- a. Mothers who have toddlers aged 6-24 months
- b. Toddlers have a risk of undernutrition based on nutritional status measurement (Weight-for-Age)
- c. Willing to be used as a research subject
- d. Have an Android-based *smartphone*
- e. Residing in Ujunggede Village

#### 2. Exclusion Criteria

Exclusion criteria are criteria of research subjects that cannot be present in the sample, and if the subject has exclusion criteria, then the subject cannot be used as a research sample. Some of the exclusion criteria in this study are:

- a. Respondents have a *Smartphone* with an *iPhone Operating System (iOS)*, *Blackberry*, and *Microsoft Windows* or other than *android*.
- b. Respondents were unable to during the study period (relocation)
- c. The respondent is sick, and counseling is not possible

d. Respondents are not registered at Puskesmas Losari

There are two variables in this study, namely independent variables and dependent variables. The independent variable in this study was counseling using the IBBAL complementary feeding application, while the dependent variable is the knowledge of the toddler mother about complementary feeding.

The instruments used in this study include questionnaires for media assessment and questionnaires for mothers of toddlers who have been tested for validity and reliability.

The sources of this assessment data are primary data and secondary data. Primary data is obtained directly by researchers against targets. The primary data in this study is done by filling out questionnaires. Secondary data are obtained from other people or other places and are not done by the researchers themselves. The data collection process was conducted by preparing, revising, and designing materials according to the recommendations of material experts and design experts, as well as the deployment of instruments to do instrument validity and reliability tests. In the second week, the researchers introduced and socialized to respondents, explained the technical research, and asked the respondents to fill out questionnaires for experimental groups and control groups. In the third week, the researchers provided stage 1 material door-to-door to experimental group respondents, accommodating questions from respondents. The last week was conducted by giving stage 2 material door-to-door to experimental group respondents, answering respondents' questions, and distributing questionnaires to the experimental group and control group.

The data analysis used in this study was by using univariate and bivariate analysis using SPSS version 26. Univariate analysis is used to determine and explain the characteristics of the variables to be studied. Bivariate analysis is used to find out the relationship between the two variables. To explain the hypothesis between independent variables by being bound through statistical tests using *paired t-tests*.

## **RESULTS AND DISCUSSION**

The development model used in this research is the development model of Borg and Gall, which has been modified by Sugiyono and is only limited to six steps of research and development, namely potential and problems, data collection, product design creation, expert validation tests, revisions, and small-scale product trials. The reason researchers limit it to more than six steps of research and development is because of limited time and cost, and at stage 6 can already answer the results of the study.

Data from application media validation results were obtained from several validators, namely 1 *IT* expert, 1 *IT* student, 1 DKV student, 2 puskesmas nutritionists, and 1 village midwife. The data obtained is in the form of quantitative data and qualitative data. Quantitative data in the form of assessment questionnaires and qualitative data in the form of responses to suggestions, criticisms, and conclusions in general on the application media developed.

Qualitative data in the form of suggestions and criticisms are used as material to make improvements to the application instruments being developed. Quantitative data was analyzed by calculating the average value of the questionnaire in the form of a *Likert* rating scale with scores of 1, 2, 3, 4, 5.

In the design validation test, there are 9 aspects of assessment, including maintainability, usability, cooperativeness, clarity and completeness of products, reusable, layout design, color concept, illustration images, and navigation of each scene. With a total score of 110 out of a maximum score of 135. The result was obtained from the percentage of feasibility of 81.48%. It can be concluded that the feasibility aspect of product design in the product feasibility category is "very feasible".

Quantitative data in the material validation test there are 6 aspects of assessment, including: the relevance of toddler nutrition material, the relevance of food portion material, the relevance of 4 stars complementary feeding material, the relevance of mythical material and facts of complementary feeding, the relevance of sample material for toddler supplementary food menus referring to the Pematang Rejang Regency Health Office. Resulting in a total score of 75 out of a total overall score of 90. The result was obtained from the percentage of feasibility of 83.33%. It can be concluded that the material feasibility aspect in the product feasibility category is "very feasible".

Statements written in questionnaires, there are also responses in the form of criticism and suggestions from respondents given. The responses given by respondents included the IBBAL complementary feeding application is easy to use and a cool appearance because it has green shades, some material that was only known by respondents after reading the material in the ibbal complementary feeding application. Criticisms and suggestions given by respondents include increasing the material of toddler supplementary food recipes and toddler energy needs according to age.

The advantages of product resulting from the development of IBBAL complementary feeding application media has several advantages as follows:

1. The developed application media provides new knowledge to mothers of toddlers about COMPLEMENTARY FEEDING
2. Application media can be connected to the Gelanganting application so that toddler growth can be monitored by a nutritionist Puskesmas Losari.
3. The application media contains food recipes. The 10-day program for providing additional malnourished toddlers is currently underway according to the direction of the Pematang District Health Office.

The disadvantages of this IBBAL complementary feeding application media have several disadvantages as follows:

1. Food URT material is not provided in full according to the source of the Food Photo Book
2. COMPLEMENTARY FEEDING Myths and Facts material is only given in accordance with the wrong understanding in the people of Ujunggede Village.

## Univariate Analysis

**Table 1.** Distribution of subjects by age

Variable	Category	Sum	Percentage %
Age	< 25 years	0	0
	26-30 years	5	31,3
	31-36 years old	11	68,8
	Total	16	100
	SD	0	0
Education	JUNIOR	10	62,5
	High School / Vocational School	6	37,5
	Total	16	100
	Housewives	12	75,0
	Merchant	2	12,5
Work	Laborer	2	12,5
	Total	16	100

Data from Tabel 1. shows the characteristics of the age category of mothers of toddlers who are willing to be respondents. It was found that there were no respondents aged <25 years, the number of respondents aged 26-30 years was 31.3%, and respondents aged 31-36 years was 68.8%. Age can affect the apprehension and mindset of a toddler's mother towards the information given to her. In addition, age is one of the determining factors of the level of knowledge, experience and motivation of toddler mothers that will affect how the mother behaves (Nugrahaeni, 2018).

Referring to Table 1, the results of respondent characteristics based on education level show that none of the respondents were at elementary school education level. Education is a process of changing the attitude and behavior of a person and an effort to mature a person through teaching and training.

Notoatmodjo in Nugrahaeni (2018) explained that the higher the level of education of a person, the easier it will be for a person to accept the information given to him. Education is known as one of the basic needs to develop oneself. So the higher a person's level of education, the person is not only easier to receive information but also the easier it is for someone to implement the information he has.

Based on table 1. It is known that the characteristics of the work category of mothers of toddlers who are willing to be respondents. It was found that respondents who were housewives amounted to 75.0%. Respondents who work as traders and laborers each amounted to 12.5%.

## Bivariate Analysis

### Differences in the average knowledge of mothers of toddlers in the experimental group and the control group

Based on the results of the *pre-test* and *post-test*, a recapitulation of data was obtained from both the experimental group and the control group as follows:



**Table 2.** Recapitulation of *Pre-test* and *Post-test* Results Experimental Group and Control Group

Indicators	n	Minimum	Maximum	Mean $\pm$ SD
<i>Pre-test</i> Experiment	8	29	57	39,13 (10,343)
<i>Post-test</i> Experiments	8	51	60	57,00 (3,024)
<i>Pre-test</i> Control	8	33	50	41,63 (6,255)
<i>Post-test</i> Control	8	36	50	43,38 (5,476)

The results of the study *pre-test* scores of maternal knowledge about complementary feeding before counseling with the *ibbal* complementary feeding application media showed an average value of 39.13 (65.21%) with a minimum value of 29 (48.33%) and a maximum value of 57 (95%). Mother's knowledge of complementary feeding. Respondents in this study took samples of toddler mothers because mothers have an important role in the growth and development of toddlers, especially mothers' knowledge, which has an influence on the mindset and level of concern to provide the right food intake for their children. In the study, mothers' knowledge of complementary feeding before counseling showed an average score of 39.13. According to Arikunto (2010) this value is in the sufficient category because it is in vulnerable percentage 56% - 75%. This is due to the lack of education about undernutrition and providing information about COMPLEMENTARY FEEDING to mothers during pregnancy and mothers lack insight into food ingredients that contain high nutrition so that it will result in the diversity of food given to children/toddlers.

The results of research on respondents' knowledge after participating in COMPLEMENTARY FEEDING counseling with the *IBBAL* COMPLEMENTARY FEEDING application have increased, namely the average value of respondents by 57.00 (95%), with a minimum value of 51 (85%) and a maximum value of 60 (100%). There was an increase in the average number of *experimental group pre-test* and *post-test* scores by 17.87. As stated by Fijri Racmawati (2016), counseling is a process of change in individuals in society in order to realize better changes as expected.

Through complementary feeding counseling with *ibbal* application media, complementary feeding can help respondents to find out information about complementary feeding that has not been known before. In counseling activities, respondents are given time to read the information contained in the application themselves before being explained in detail by the extension worker, and respondents are also given the opportunity to ask questions about information that has not been understood or previously known to the extension worker.

**Table 3.** Hypothesis Test *Pre-test* and *Post-test* Data of the Experimental Group and Control Group.

Indicators	<i>p-value</i>
Experimental Group	0,001
Control Group	0,093

The results of bivariate analysis showed that there was an influence of counseling with IBBAL complementary feeding on the knowledge of mothers under five about complementary feeding based on research conducted on 16 mothers of toddlers, with 8 mothers of toddlers as the experimental group and 8 other mothers as the control group. There was a difference in the average knowledge of the mothers in the experimental group with the average knowledge of mothers in the control group. The results of this study are in accordance with previous research conducted by Ni'ma Nazilia and Muhammad Iqbal (2020) which stated that there was an increase in nutritional knowledge scores in mothers under five after being given an intervention with the Gold application (Healthy Children Eat Healthy). Another research result that is in line with the results of this study is research by Tumiur Sormin, Anita Puri (2019) which states that there is a difference in the average knowledge of mothers who receive counseling using android application media. According to Suhardjo (2003), counseling is an effort that can be done as an educative approach that serves to make individual or community behavior can improve the degree of public health and still maintain good conditions. The purpose of nutrition counseling is to form a positive attitude towards nutrition, and to form knowledge and skills in choosing and using foodstuffs, create good eating habits and generate motivation to understand about nutrition such as by providing complementary foods. At the same time, maternal knowledge is the insight possessed by mothers to get optimal results. Mother's knowledge of toddler nutrition will indirectly determine the nutritional status of toddlers. This is because the mother is in charge of the family about family feeding, especially children. So, the better the mother's knowledge, the better the feeding will be so that the child's nutritional status is also good (Roficha & Suaib, 2018).

Research results based on Table 2. It can be seen that the mean value of the experimental group *pre-test* results is 39.13 and the experimental group *post-test* results are 57.00. The result of the difference in the *mean* value between the *pre-test* and *post-test* scores of the experimental group was 17.87. The statistical results prove that counseling with ibbal complementary feeding application media influences the knowledge of mothers under five where the *p-value* is  $0.001 < 0.05$  (95% trust).

The results showed that there was an increase in knowledge of mothers under five about complementary feeding between before and after counseling about complementary feeding with the application of ibbal complementary feeding ( $p < 0.05$ ). Research conducted by Ni'ma Nazilia and Muhammad Iqbal (2020) shows an increase in nutritional knowledge scores in mothers under five after being given an intervention with the Gold application (Healthy Children Eat Healthy). In addition, Ni'ma Nazilia's research shows that there is an increase in knowledge from medium category to good category in a group can prove that the guidance of media can increase maternal knowledge. Counseling using the IBBAL complementary feeding application has an influence on increasing the level of knowledge of mothers because counseling is carried out well and there is a good communication relationship between extension workers and respondents. In addition, respondents

also actively ask if there is information that has not been understood. So that respondents can fill out *the post-test* properly and correctly.

The IBBAL complementary feeding application has the following disadvantages:

1. Food URT material is not provided in full according to the source of the Food Photo Book
2. Complementary feeding Myths and Facts material is only given in accordance with the wrong understanding in the people of Ujunggede Village.

## **CONCLUSION**

Based on the results of research and discussion, the following conclusions were obtained: the counseling media for the ibbal-complementary feeding application can be categorized as very feasible according to the assessment of media experts and material experts.

After limited trials and statistical data tests, the *p-value* of  $0.001 < 0.05$  (95% confidence) or  $H_a$  is accepted and  $H_0$  is rejected. It can be concluded that there is an influence of counseling with the IBBAL complementary feeding application media on the knowledge of mothers of toddlers before and after counseling

The IBBAL complementary feeding application can be used as a medium of counseling for mothers of toddlers in the future by cadres, nutrition officers, or village midwives on an ongoing basis. It is recommended for mothers of toddlers who have been counseled and downloaded the IBBAL complementary feeding application to enter the latest nutritional status of toddlers on the gelanganting link contained in the ibbal complementary feeding application so that local nutrition officers can monitor the development of toddler nutritional status.

From this study, researchers realized the limitations of the study, namely limited time so that they could only research on aspects of knowledge of toddler mothers so that the results obtained were less than optimal and some obstacles and obstacles that occurred during the study, including: 1.) Toddler tantrums during counseling, causing counseling to be delayed; 2.) Respondents who have a busy day so that it is difficult to find cause counseling is less effective because it is carried out when respondents have free time only.

## **REFERENCES**

- Arikunto, S. (2010). *Research Procedure*. Rineka Cipta.
- Ministry of Health. (2017). *Central Bureau of Statistics*.
- Ministry of Health RI. (2021). *Indo-Nesian Health Profile*.
- Ministry of Health RI. (2018). *Key Results of Riskesdas 2018*. Ministry of Health of the Republic of Indonesia.
- Health, D. (2020). *Pemalang District Health Profile (Issue 12)*. Pemalang District Health Office.
- Kominfo, T. P. (2015). *Big Data Pocketbook*. In *Ministry of Communication and Information Technology*. Keminfo.
- Nazilia, N., Iqbal, M., Country, P., Mastrip, J., Box, P. O., & East, J. (2020). *Increasing Mother's Knowledge Of Nutrition To Overcome Under Nutrition In Children / Toddlers With The Application Of*. 1(1), 46–53.
- Nugrahaeni, D. E. (2018). *Pencegahan Balita Gizi Kurang Melalui Penyuluhan Media Lembar Balik*

*Gizi Prevention Of Undernourished Children Through Nutrition Education Using Nutrition Flipchart. 113–124.*

- Okinarum, G. Y., Afriandi, I., Gurnida, D. A., Herman, H., Garna, H., & Djuwantono, T. (2017). The use of the Sayang ke Buah Hati (Sehati) application on children's nutritional intake and mother's knowledge of applying the consumption of a variety of balanced nutritional foods in elementary school children. *Global Medical & Health Communication (Gmhc)*, 5(3), 219.
- Rahma, A. C., & Nadhiroh, S. R. (2017). Socioeconomic differences and nutritional knowledge of mothers under five are malnourished and normal nutrition. *Media Gizi Indonesia*, 11(1), 55. <https://doi.org/10.20473/Mgi.V11i1.55-60>
- Rahma, Y., & Suhartini, D. (2020). Toddler Nutrition Guide Information System. *Journal of Informatics Engineering*, 8(2), 27.
- Rahmawati, R. N., Setyonugroho, W., & Kurniawati, H. F. (2021). Scoping Review on the Use of Mobile App in Monitoring the Health of Children Under Five. *Journal of General Science and Health*, 6(2), 119–131.
- Roficha, H. N., & Suaib, F. (2018). Knowledge of maternal nutrition and family socioeconomics on the nutritional status of toddlers aged 6-24 months. *Food Nutrition Media*, 25, 39–46.
- Suhardjo. (2003). *Different Ways of Nutrition Education*. Earth Literacy.