

## The Effectiveness of “Ibu Pintar” Bookmic on Maternal Knowledge and Attitude toward Complementary Feeding Practice in Children Aged 6-24 Months

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### ABSTRACT

**Background:** Complementary Feeding Practice is an important factor for the fulfilment of children’s nutritional needs. Due to the nutritional imbalance between the energy and nutrient needed by infants and what provided by breastmilk, therefore it should be fulfilled by complementary feeding. One third of toddlers worldwide are in developing countries who obtain adequate complementary feeding, with a standard frequency and variety. Meanwhile, in Indonesia two third or most of the children aged 0-24 months do not obtain appropriate complementary food. The study aims to develop “Ibu Pintar” Bookmic, a media which is valid and effective to improve maternal knowledge and attitude in appropriate complementary feeding practice.

**Subjects and Method:** The design of the study used 2 methods. The first method was Research and Development to collect user data and subsequently generated a product that can be utilized to improve knowledge and attitude of mothers of toddlers. The second method was quasi experimental design conducted before and after the study without any comparison to apply Paired Sample T-Test by using SPSS.

**Results:** The result indicated that after the treatment with “Ibu Pintar” Bookmic maternal knowledge in complementary feeding practice was improved (Mean= 1.42; SD= 0.67) compared to maternal knowledge in complementary feeding practice before the treatment (Mean= 0.66; SD; 0.77), and the result was statistically significant ( $p < 0.001$ ). After the treatment with “Ibu Pintar” Bookmic maternal attitude in complementary feeding practice was improved (Mean= 0.76; SD= 0.43) compared to maternal attitude in complementary feeding practice before the treatment (Mean= 0.44; SD; 0.50), and the result was statistically significant ( $p < 0.001$ ).

**Conclusion:** “Ibu Pintar” Bookmic is effective for maternal knowledge and attitude in complementary feeding practice.

**Keywords:** knowledge, attitude, and complementary food.

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### BACKGROUND

Complementary feeding practice is an important factor for the fulfilment of children’s nutrition. Due to the nutritional imbalance between the energy and nutrients

needed by infants and what provided by breastmilk, therefore it should be fulfilled by complimentary feeding. One third of toddlers worldwide are in developing countries who obtain adequate compli-

mentary feeding, with a standard frequency and variety. Meanwhile, in Indonesia two third or most of the children aged 0-24 months do not obtain appropriate complimentary food due to improper parenting style. Survey result (Asosiasi Dietisien Indonesia, 2014) indicates that about 1 out of 4 children or 24.7% toddlers in Aceh obtain inadequate protein intake and 6 out of 10 children or 60.4% obtain inadequate energy intake, lower than the Recommended Daily Allowance (RDA). Inadequate nutritional intake obtained from complimentary food in children aged 6-24 months generates growth impairment and high risk for stunting MP-ASI.

Children’s nutritional intake essentially contributes in optimizing children’s growth and development. Inadequate nutrition intake will lead to deficient condition, growth and development impairment, as well as fatalities. Toddlers with nutritional deficiency will be prone to infection and dietary pattern that is not well accomplished will impact their appetite. Inadequate nutritional intake due to improper feeding practice, leads to several potential risks such as diarrhea, allergies, constipation, other digestion disorders, and other risks. It is in accordance with the Regulation of Health Ministry of the Republic of Number 29/ year 2019 concerning the countermeasure of disease-related nutritional issues in children. The regulation elaborates that each child has the right to life, optimal growth, and development. Undernourishment leads to nutritional issues that may restrict growth and development therefore it requires countermeasure for nutritional issues.

World Health Organization (WHO) put Indonesia as the third highest country in Asia with stunting prevalence in 2017. The figure touched 36.4%. In 2015 there were 50 million children under 5 (7%) who

suffered from malnutrition and South East Asia was region with the highest prevalence of malnutrition (13.5%) or as many as 24 million children. In 2015, the national percentage of malnutrition incidence in toddlers aged 0-24 months in Indonesia was 3.2% and it went down by 0.1% in 2016 to 3.1%. According to Central Java Provincial Health Office in 2019, the prevalence of stunting touched 23.7% whereas undernourishment was 14.8 %.

Based on the issues above, inadequate knowledge is generated by several factors such as education, habit and culture, and environment. One of the methods utilized to improve maternal knowledge concerning nutrition is health promotion (Notoadmodjo, 2014). Health promotion is a means to present message or information intended to be delivered by the communicator, through print media (booklet, comic, newspaper, leaflet), electronic media (radio, TV, computer, and others), and outdoor media. As a part of the effort of nutrition in health promotion, the accomplishment to implement the appropriate complementary feeding practice is conducted by outreach through media. Media has been developed in educational field for delivering message to improve knowledge.

One of the media utilized as health promotion media is booklet and comic. Comic is a media that can provide model to be used to improve and develop personality and knowledge. Comic can also be employed as a means of communication, to deliver stories and messages. Booklet is a media in the form of a book to deliver messages, both text and pictures. Booklet can be used to improve knowledge concerning health. Both media are distinguished due to its ability to deliver information in detail, adjust the delivery process based on the condition, it is entertaining, light, and it is long-term in nature that if the inter-

vention is continuously implemented then it may generate a shifting toward a certain health issue including knowledge and attitude improvement for stunting prevention efforts. On the other hand, the media also have weaknesses such as it cannot reach out to all society, the message is not directly delivered, and it is laborious in the distribution (Septian, 2019).

It is in line with a study (Kartini et al, 2018) “The Effect of Booklet and Short Movie Media toward the Attitude of Parents of Toddlers aged 6-24 Months in Complementary Feeding”. The study results reveal that booklet media affects the complementary feeding. Meanwhile a study by (Aprillia et al, 2019) concerning “The Effectiveness of Complementary Feeding Education Class in Improving Knowledge of Infants’ Mothers” indicates that the existence of complementary feeding class is effective in improving the knowledge of toddlers’ mothers concerning complementary feeding. Knowledge improvement can be conducted by providing intervention toward an object by using health promotion media. Therefore, the study aims to analyse the development, validity, implementation, and effectiveness of “Ibu Pintar” Bookmic media.

## SUBJECTS AND METHOD

### 1. Study Design

It was a Research & Development study, it was started with research and continued with development. Subsequently, a validity and effectiveness test were implemented by using quasi experimental design method with one group pre-test-post-test design. The study was conducted in the working area of Community Health Center of Kutasari Sub-district, Purbalingga Regency.

### 2. Population and Sample

The target of the study was mothers with toddlers aged 6-24 months. The study used

Purposive Sampling as the sampling technique. It is a sampling technique with certain considerations or criteria.

### 3. Study Variables

Independent variable of the study was “Ibu Pintar” Bookmic, whereas dependent variables were knowledge and attitude in complementary feeding practice.

### 4. Operational Definition

“Ibu Pintar” Bookmic was a health promotion media utilized to measure the complementary feeding practice.

**Knowledge** was anything discovered based on the person’s own experience and knowledge will be increasing along with the process encountered. The study used questionnaires to measure the level of knowledge.

**Attitude** is a certain regularity in terms of a person’s feeling, thoughts, and action toward a certain aspect in his/ her surroundings measured by using questionnaires.

### 5. Instruments of the Study

The study used questionnaires concerning how complimentary feeding practice is toward 50 mothers of toddlers as the study subject.

### 6. Data Analysis

Data analysis conducted by using Paired Sample T-Test with the help of SPSS program.

### 6. Research Ethics

The study has obtained Ethical Clearance Number: 322/KEPK/EC/2021 that stated this study is feasible and has met research requirements.

## RESULTS

### 1. Analysis Result of Validity Test of “Ibu Pintar” Bookmic According to Media Experts and Material Experts

The developed product was a light learning book in the form of “Ibu Pintar” Bookmic as a source knowledge for mothers of infants aged 6 – 24 bulan. The initial stage of “Ibu

“Ibu Pintar” Bookmic was considered valid through validity test by validators, a competent media expert and material expert. Validity test toward bookmic media was conducted by the competent media expert and material expert in accordance with criteria for validity. As the result, both validators stated it was significantly valid. According to the media expert the result of validity analysis was 88.5% in average with category significantly valid and feasible to use. However, there are several suggestions and advices from the validator. According to the material expert (nutritionist) the result was 86.35% in average with category significantly valid and feasible to use.

## 2. Study Subject Characteristics

Study subjects were mothers of toddlers aged 6-24 months in the working area of Kutasari Community Health Center that consisted of 50 persons. The data obtained discovered that highest frequency of educational background was Junior High School with 40%. It was influenced by the environment in which there were a lot who did not continue their study into the next level, tended to be more working oriented, and got married without considering both physic and mental self-preparation. Furthermore, there were a lot of eye lashes and wig factories in Purbalingga region that required a more female labors than male (figure 2).

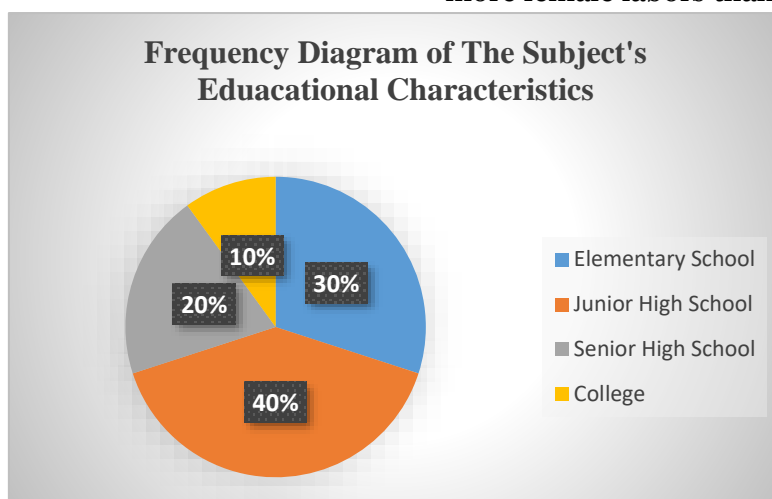


Figure 1. Diagram of Frequency of Study Subjects’ Educational Characteristics

## 3. Knowledge Pre and Post Health Promotion by means of “Ibu Pintar” Bookmic Media

The number of Subjects with insufficient level of knowledge during pre-test was 26 persons (52%), the number of Subjects with sufficient level of knowledge during pre-test was 15 persons (30%), whereas the number of Subjects with excellent level of knowledge during pre-test was 9 persons (18%)

(Table 1).

The number of Subjects with insufficient level of knowledge during post-test was 5 persons (10%), the number of Subjects with sufficient level of knowledge during post-test was 19 persons (38%), whereas the number of Subjects with excellent level of knowledge during post-test was 26 persons (52%) (Table 2).

**Table 1. Frequency Distribution of Knowledge of Mothers with toddlers aged 6 – 24 months in Pre-test**

Knowledge Category	Frequency (N)	Percentage (%)
Insufficient	26	52
Sufficient	15	30
Excellent	9	18
<b>Total</b>	<b>50</b>	<b>100.0</b>

**Table 2 Frequency Distribution of Knowledge of Mothers with toddlers aged 6 – 24 months in Post-test**

Knowledge Category	Frequency (N)	Percentage (%)
Insufficient	5	10
Sufficient	19	38
Excellent	26	52
<b>Total</b>	<b>50</b>	<b>100.0</b>

**4. Attitude Pre and Post Health Promotion by means of “Ibu Pintar” Bookmic Media**

Table 3 it was discovered that the number of Subjects with positive attitude during pre-test was 22 persons (44%) whereas the number of Subjects with negative attitude

during pre-test was 28 persons (56%).

Based on Table 4 it was discovered that the number of Subjects with positive attitude during post-test was 38 persons (76%) whereas the number of Subjects with negative attitude during post-test was 12 persons (24%).

**Table 3 Frequency Distribution of Attitude of Mothers with toddlers aged 6 – 24 months in Pre-test**

Attitude Category	Frequency (N)	Percentage (%)
Negative	28	56
Positive	22	44
<b>Total</b>	<b>50</b>	<b>100.0</b>

**Table 4 Frequency Distribution of Attitude of Mothers with toddlers aged 6 – 24 months in Post-test**

Attitude Category	Frequency (N)	Percentage (%)
Negative	12	24
Positive	38	76
<b>Total</b>	<b>50</b>	<b>100.0</b>

**5. Bivariate Analysis**

The respondents of the study obtained 30 days intervention in the form of “Ibu Pintar” Bookmic. The intervention was administered to discover the differences in

knowledge and attitude of mothers of toddlers concerning complementary feeding before and after obtaining “Ibu Pintar” Bookmic media.

**Table 5 The Result of Bivariate Test of “Ibu Pintar” Bookmic administration toward the knowledge of mothers of toddlers in complementary feeding practice**

Knowledge	Mean	SD	Median	p
Pre-test	0.66	0.77	0.00	< 0.001
Post-test	1.42	0.67	2.00	

Based on Table 5 it was discovered that there was a shifting in the respondents’ average knowledge score pre and post the intervention. The result indicated that maternal knowledge increased after the administration of “Ibu Pintar” Bookmic (Mean= 1.42; SD= 0.67) compared to the average know-

ledge score before the administration (Mean= 0.66; SD; 0.77), and the result was statistically significant (p <0.001). Therefore, it can be concluded that there is an effectiveness of “Ibu Pintar” Bookmic toward the increased knowledge of mothers of toddlers in complementary feeding practice.

**Table 6 The Result of Bivariate Test of “Ibu Pintar” Bookmic Administration toward the attitude of mothers of toddlers in complementary feeding practice.**

Attitude	Mean	SD	Median	P
Pre-test	0.44	0.50	0.00	< 0.001
Post-test	0.76	0.43	2.00	

Based on Table 6 it was discovered that there was a shifting in the respondents’ average attitude score pre and post the intervention. The result indicted that maternal attitude increased after the administration of “Ibu Pintar” Bookmic (Mean= 0.76; SD= 0.43) compared to the average attitude score before the administration (Mean= 0.44; SD; 0.50), and the result was statistically significant (p <0.001). Therefore, it can be concluded that there is an effectiveness of “Ibu Pintar” Bookmic toward the attitude of mothers of toddlers in complementary feeding practice.

weaknesses will make an excellent combination as a health promotion media. The excellences of both medias are society is familiar with the medias, all levels of society can use them, the information is delivered meticulously, the delivery process can be adjusted with the condition, entertaining, light, it is long-term in nature that if the intervention is continuously implemented then it may generate a shifting toward a certain health issue including knowledge and attitude improvement for stunting prevention efforts. the media also have weaknesses such as it cannot reach out to all society, the message is not directly delivered, and it is laborious in the distribution (Septian, 2019).

**DISCUSSION**

Two of the medias used as health promotion media are booklet and comic. Comic is a media that may provide model to improve and develop personality and knowledge. Comic can also serve as a means of communication, a means to deliver stories and messages. Booklet can be used to improve health-related knowledge. Booklet and comic with their respective excellences and

The descriptions above is in line with a study (Kartini et al, 2018) “The Effect of Booklet and Short Movie Media toward the Attitude of Parents of Toddlers aged 6-24 Months in Complementary Feeding”. The result of the study indicates that booklet affects the complementary feeding. Whereas a study by (Aprillia et al., 2019) concer-

ning “The Effectiveness of Complementary Education Class in Improving the Knowledge of Mothers of Infants” indicates that the Complementary Feeding Class is effective in improving the knowledge mothers of toddlers concerning complementary feeding. Knowledge improvement can be conducted by providing intervention toward an object by using health promotion media. The development “Ibu Pintar” Bookmic as health promotion media particularly concerning complementary feeding practice, turns to be a good movement in the effort to improve toddlers’ nutrition intake particularly. In this globalization era, the technology is getting more advanced and information is getting easier to get, bookmic is one of the valid yet fun and convenient methods to deliver information which is fit with people’s limited time and their way for socialization in this pandemic era. The utilization of “Ibu Pintar” Bookmic in learning process can be stated in a definite measurement. “Ibu Pintar” Bookmic in the study was categorized as significantly valid to use based on the validation result in table 4.1. “Ibu Pintar” Bookmic provides a new breakthrough as a health promotion media concerning complementary feeding practice in particular to improve knowledge and attitude of mothers of toddlers.

There was a shifting of respondents’ knowledge level in the study. Respondents with excellent category of knowledge during pre-test was 18%. After the intervention were administered, respondents with excellent category of knowledge during post-test was 52%. The above pre-test and post-test indicated that there was an increased knowledge of mothers of toddlers concerning complementary feeding practice. It is definitely positive and it is expected that not only the knowledge that is increasing, but mothers of toddlers are expected to be able to implement the appropriate comple-

mentary feeding both in their real daily life and in the society.

The result of the study concerning the attitude of mothers of toddlers by means of pre-test and post-test was excellent. During pre-test there was 44% of the respondents who supported or was in positive category and during post-test there was 76% of the respondents who supported or was in positive category. Based on the result of the study above, the attitude of mothers of toddlers was fairly increasing. The positive attitude is expected to encourage the improvement and implementation of knowledge in the society through “Ibu Pintar” Bookmic.

Based on the result of data analysis by means of Paired Sample T-Test, it was discovered that there was an increased average score pre and post intervention. The result indicated there was a significant effect characterized by the value of  $p= 0.001$ . Therefore, it can be concluded that there is an effectiveness of “Ibu Pintar” Bookmic toward the increased knowledge of mothers of toddlers in complementary feeding practice. In terms of attitude, the result indicated there was a significant effect characterized by the  $p= 0.001$ . Therefore, it can be concluded that there is an effectiveness of “Ibu Pintar” Bookmic toward the attitude of mothers of toddlers in complementary feeding practice. Accordingly, “Ibu Pintar” Bookmic facilitates mothers of toddlers aged 6-25 months in particular, and parents in general to improve their knowledge and understanding as well as encourage the positive attitude toward the importance of appropriate and decent complementary feeding practice as the foundation of children’s growth to be the future of the nation.

The conclusion of the study has generated “Ibu Pintar” Bookmic that has met the validation criteria of 2 media experts and 2 material experts with total average score are 88,5 % and 86,35% respectively.

The result indicates that “Ibu Pintar” Bookmic is included into the criteria of significantly valid as an alternative health promotion media for knowledge and attitude of mothers of toddlers in complementary feeding practice characterized by the  $p < 0.001$ .

#### **AUTHOR CONTRIBUTION**

Fifty K. Lucita is the principal researcher who selects the topic, searches for and collects study data. Ari Yuniastuti played a role in analyzing data reviewing study documents.

#### **FUNDING AND SPONSORSHIP**

This study is self-funded.

#### **CONFLICT OF INTERESTS**

There is no conflict of interest in this study.

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