



## EFFECTIVENESS OF FOOD SAFETY EDUCATION FOR EARLY CHILDREN'S HEALTH

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### Abstract

**Background:** Diarrhea is a disease caused by food which is a health problem in early childhood. One cause is food that is not safe for consumption by children. Therefore it is important to educate mothers about the importance of managing food safety. The purpose of this study was to determine changes in maternal behavior after being given early childhood food safety education

**Methods:** : This study uses a quantitative approach. with The One-Group Pretest-Posttest Design. The intervention given is education through film media and booklets. The instrument in this study was an early childhood food safety questionnaire with reference to three aspects namely maintaining cleanliness, preventing raw food from being consumed and preventing food from hazardous chemicals. This instrument is to measure changes in maternal behavior before and after the intervention. Sampling using a purposive sampling technique. The sample in this study was 57 mothers with children under five who were studying in kindergarten in Ungaran, Semarang district. Data analysis using the Wilcoxon test

**Result:** The results of this study prove that there was a significant increase in maternal behavior before and after food safety education intervention was given with a p value of 0.020

**Conclusion :** There is a change in mother's behavior in managing food safety for early childhood.

## INTRODUCTION

Early childhood is the phase that most determines the physical and social emotional development. Food safety in the early stages of life will determine health that affects children's self-development in their life span

Food-borne diseases such as diarrhea are problems that often occur in early childhood. Diarrhea is a health problem with high morbidity and mortality rates (Center for Data and Information, 2015). This disease causes about 800,000 deaths each year in the under five years age group and occurs in most developing countries (Zwisler, Simpson, & Moodley, 2013). The morbidity survey conducted by the Diarrhea Sub-Directorate, Ministry of Health from 2000 to 2010 showed a tendency for the incidence of diarrhea to increase. The prevalence of diarrhea was more prevalent in rural areas (10%) than in urban areas (7.4%) in urban areas. Diarrhea tends to be higher in the low education group and work as farmers / fishermen and laborers (Kemenkes RI, 2011). The data shows that the prevalence of diarrhea cases in 2018 in Mluweh village, Ungaran is 12.47% (Fauzi et al., 2018) and the prevalence of children under the age of five experiencing diarrhea in Raudhatul Athfal (RA) Mluweh is 10%.

Children are the most vulnerable to suffer from these diseases. Based on the results of the Household Health Survey (SKRT), Morality Studies and Basic Health Research from year to year, it is known that diarrhea is still the main cause of infant mortality in Indonesia (Kemenkes RI, 2011). Diarrhea can be caused by various infections caused by pathogenic bacteria or viruses that are transmitted through consuming food (Levine, Walson, Atlas, Lamberti, & Pavlinac, 2017). The impact of food borne disease on children is stunted growth and development, malnutrition, and impaired cognitive development (Farthing et al., 2013).

Improper management at home as a risk factor for disease causes (Kemenkes RI, 2011) and the extent to which mothers' perceptions of risk become the basis for mothers in practicing food safety at home. The European Food Safety Authority (EFSA) reports that 5,648 foodborne outbreaks affected 69,553 people, 33% of which originated in household kitchens. Conditions

in the field indicate that mothers have not properly practiced food safety behavior, for example, there are mothers who tend to let their children consume sauces from outside and provide food that their children like even though they are not healthy. Therefore, understanding the risk factors that cause diarrhea is fundamental for mothers as a reference in implementing proper food safety management practices. The study further states that parents, especially mothers, are the main parties who are the source of information on the concept of food safety management and role models in practicing food safety behavior (Ovca, Jevšnik, & Raspor, 2014).

The basic effort to improve food safety behavior among mothers in rural areas is through educational interventions and evaluation of these interventions (Ovca et al., 2014). The media used were film media and booklet media. Film media is the most appropriate audiovisual media and a strong communication tool as a health promotion medium. This is because film media involves sight and hearing sensory functions, attracts attention, is educational and entertaining (Saleh, Arya, & Afriandi, 2016). In addition, booklet media are used as a companion in education. Pictures, writings, tables listed in the booklet can encourage thinking skills and understanding of the contents of the message (Yani, Sahriah, & Haerunnisa, 2018). Thus, this media is able to attract target interest and enthusiasm so that complete, clear and precise knowledge can be obtained which can increase behavior change. The results of the study have proven that the educational method using audiovisual media and booklets is effective in improving respondent behavior (Silalahi, Hakimi, & Lismidiati, 2018) Smithikrai, 2016). Based on an example or model, a person receives knowledge about how behavior should be done as well as a guide in behavior (Bandura, 2004).

Based on the description above, the purpose of this study is to improve maternal behavior towards early childhood food safety after being given intervention.

## METHOD

The variables used in this study were the behavior of mothers before and after being given interventions related to food safety man-

agement. The approach used in this research is a quantitative approach. The design used in this study is The One-Group Pretest-Posttest Design. The population in this study were 71 mothers with children under five years of age who attended school at Raidhyatul Anfal (RA) Mluweh Ungaran and the sample in this study was 57 mothers who met the requirements who had filled out questionnaires before and after being given intervention. The instruments provided were questionnaires and educational media films and booklets covering three aspects, namely maintaining cleanliness, preventing raw food from being consumed and preventing food from dangerous chemicals.

The validity and reliability of the questionnaire instrument were tested on mothers with children under five years of age at different schools with the same characteristics and areas and obtained 23 tested items. In addition, to measure the validity of the intervention instrument, the intervention feasibility test was used for mothers with children under five years of age in different schools with the same characteristics and areas to provide an assessment of the two media. Referring to three aspects of assessment, namely image quality, sound quality (only on film media) and suitability of material, the media is deemed appropriate as an educational medium.

To measure the behavior of mothers before and after the intervention, the questionnaire instrument was given one week before the intervention and given again 30 days after the intervention. The analysis test in this study is the Wilcoxon test.

## RESULT AND DISCUSSION

Table 1. Homefood Management Data

Subject of managing meals at home	Respon	
	n	%
Mother	43	75%
Grandmother	10	18%
Household assistant	3	5%
Mother and grandmother	1	2%
Total	57	100%

The results showed that there were 43 (75%) respondents stated that the food manager at home for children was the mother, 10 (18%) were the grandmothers, 3 (5%) were household assistants and 1 (2%) were mothers and grandmothers.

These results indicate that the majority of mothers play a role in managing food safety for their children. In accordance with the opinion that the most important party in food management is the mother (Ovca et al., 2014). Even though there are other caregivers, the mother is still the party responsible for paying attention and stimulating the child.

In addition, based on the analysis of the questionnaire, the respondent's behavior in several aspects showed that 89% of mothers had practiced hygiene behavior, 85% of mothers had prevented dangerous chemicals and 81% of mothers had prevented consuming raw food.

Compared with other aspects, the aspect of preventing raw food from being consumed was the aspect that received the lowest response before the intervention was given. This means that the mother lacks awareness of this aspect which is reflected in her behavior. There are several reasons why the behavior in this aspect is low. This is due to insufficient knowledge of mothers in managing food safety. This is in line with the opinion that knowledge and information encourage behavior. In this case, inadequate and inaccurate information and a lack of willingness to seek information will weaken a person's knowledge and understanding which has an impact on their behavior (Kelly & Barker, 2016). Another cause is the desire to maintain his behavior in old ways which are actually the result of inappropriate beliefs and unpreparedness to change. This could be due to the thought that behavior change will lead to pressure, stress and uncertainty of results (Abdel-Ghany, 2014). Therefore it is important to provide the right knowledge to form better maternal awareness in food safety management.

The Wilcoxon test results showed that the average score of the respondent's behavior before the intervention regarding food safety management was 59 and after the intervention was 49 with a p value of 0.020.

The results of this study prove that although the average behavior before and after

Table 2. Respondent behavior based on food safety aspects before being given intervention

Aspects	Respondents behavior average
Maintain cleanliness	89%
Prevent eating from harmful chemicals	85%
Prevent raw food from being consumed	81%

Table 3. Statistical Result

Food Safety Behavior	Mean	Sd
Before	59	6.1
After	49	23.6
P value	0.020	

there is a decrease in score, overall there is an increase in maternal behavior before and after being given the intervention significantly. Thus the mother has experienced a process or stage of behavior change. The precontemplation stage is that the individual does not realize that he needs to change his behavior because he does not know the importance of food safety for early childhood, then is the contemplation stage, where the individual begins to realize the need for change. This stage occurs after the mother is given intervention. The next stage is action, in which the mother begins to accept and directs the behavior in accordance with the principles of food safety management and the last stage is maintenance, the mother succeeds in achieving her goal of continuing to make changes and preventing the previous behavior from reappearing. If motivation is not strong, is not willing to accept information and is unable to practice the new behavior, the expected results will be difficult to achieve (Lacey & Street, 2017).

The success of behavior change is inseparable from how the roles of channels for message delivery. Mass media is a method or technique of delivering messages that are right on target in delivering information to audiences. Efforts to convey to the masses can run effectively because of the existence of educational media such as films and booklets that contain important health messages to know. In addition, the parties who give messages and supporting tools in conveying information also play a role in the effectiveness of delivering messages. All of these components are inter-related. The superior role of information from

experts is to drive behavior change for mothers (Kelly & Barker, 2016). Based on this, it can be said that the delivery of messages with the seminar method through the media of films and booklets and accompanied by explanations can help to improve maternal behavior in managing food safety. Film is a medium that is able to visually depict message content about concepts and theories, increase engagement, promote critical thinking and analytical skills and evoke affective and cognitive experiences. The results of the study show that films teach positive characters and behaviors for individuals (Smithikrai, 2016). In addition, booklets also have a positive role in shaping behavior. The results showed that the provision of intervention using booklet media could increase knowledge of those who manage food about the practice of managing safe food (George & Nayak, 2013). Therefore, mothers want, are able, maintain and maintain children's health can be realized. In addition, this mother's behavior can be a role model for children's behavior in terms of health care and maintaining disease-free conditions. Mothers are educators, the best teachers and the first parties to introduce healthy living behaviors for children (Ceka & Murati, 2016). Thus, children develop healthy, prosperous, happy and can enjoy their childhood.

## CONCLUSION

The findings in this study indicate that mothers are the main party responsible for managing early childhood eating. The results of this study prove that there is a significant increase in maternal behavior after being given

food safety education interventions.

In further research, food management interventions can be carried out in a wider community group so that it can increase control of food-borne diseases in early childhood.

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