Improvement the practices of complementary feeding through local wisdom-based complementary feeding education videos

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Abstract. The incidence of stunting is a major nutritional problem faced by Indonesia. The most decisive intervention to reduce the prevalence of stunting includes the provision of complementary foods to infants. Empowerment of mothers during the complementary feeding period can give positive results on the nutritional status of children. The purpose of the study was to identify the effect of MPASI education videos based on local wisdom on maternal practices and nutritional status of infants 6-24 months. The research design was a quasi-experimental with a two group pre-post test design, sample of 40 mothers of infants 6-24 months which taken by consecutive sampling. The results showed that there were differences in mother's practice before and after the complementary feeding education video (p value < 0.001; = 0.05), while there was no difference in nutritional status before and after the video was given. This study recommends providing MPASI educational media for mothers during the exclusive breastfeeding period as a preventive measure for early complementary feeding and increasing maternal readiness before the complementary feeding period.

Keywords: Video, Complementary Feeding, Local Wisdom, Nutritional Status, Infants

1. Introduction

Stunting is a condition of failure to thrive in children under five (babies under five years) resulting from chronic malnutrition so that children are too short for their age. Stunting according to the Ministry of Health (Kemenkes) is a child under five years with a z-score value less than -2SD/standard deviation (stunted) and less than -3SD (severely stunted) [1].

The incidence of stunting (short) under five is a major nutritional problem faced by Indonesia. Data on the prevalence of stunting under five collected by the World Health Organization (WHO), Indonesia is included in the country with the third highest prevalence in the Southeast Asia region and ranks fifth in the world. The average prevalence of stunting under five in Indonesia in 2005-2017 was 36.4% [2]. The Riskesdas 2018 stated that the incidence of stunting in infants increased dramatically during the complementary feeding period from 22% at the age of 6 months to 38% at the age of 2 years [3].

Stunting children that occur in Indonesia are not only experienced by poor and underprivileged families but also experienced by families that are not poor or are above 40% of the social and economic welfare level. The most decisive intervention to reduce the prevalence of stunting needs to be done in the first 1,000 days of life (HPK) of toddlers. Interventions in this period contributed to a 30% reduction in stunting. The stages the period of giving complementary foods after the baby is 6 months old. The process of introducing proper complementary feeding will benefit to the growth and development of children in the future, including preventing stunting [1].

The phenomenon of early complementary food and low consumption of a variety of foods still occurs in many parts of Indonesia. The number of infants aged 6-23 months who receive nutrition according to the criteria for food diversity and eating frequency is also low, namely below 25%. The

results of Indonesia's basic health research in 2018 show that the consumption of various foods of children aged 6-23 months is only at the level of 46.6%, which means that half the population of Indonesian children has not consumed various foods in terms of nutrients . This condition is quite concerning because Indonesia is a tropical country with various types of carbohydrates, proteins, vegetables and fruits [3].

Factors causing the practice of giving early complementary feeding and low consumption of a variety of foods is the lack of knowledge of the mother or caregiver so that the implementation becomes inappropriate. Research shows that empowering mothers during the complementary feeding period gives positive results in the form of increased knowledge and practice, the long-term result is an increase in children's growth and weight. This intervention is considered the most effective intervention for reducing stunting during the first 2 years of life [4].

Based on this description, the researcher intends to identify the influence of local wisdom-based MPASI educational videos on maternal knowledge and the nutritional status of infants 6-24 months with the aim of empowering mothers who are the main caregivers in the family. Complementary feeding with a variety of local wisdom food ingredients is a reference because it is considered to have advantages for babies, families, and the environment where they live. This advantage refers to the ease of procuring food ingredients, economical, in accordance with family habits and empowering the local economy. The purpose of this study is to support the improvement of children's health status, especially during the period of complementary feeding. It is hoped that the results of this study can be used as a reference for providing appropriate interventions during the complementary feeding period, preventing early complementary feeding, and increasing mother/caregiver knowledge about the importance of diversity of local food ingredients in complementary feeding.

2. Methods

The sampling technique used is consecutive sampling. The respondents were determined by inclusion and exclusion criteria. The research sample with inclusion criteria was the mother/primary caregiver of the baby, able to read and write and willing to be a respondent. The exclusion criteria are that the mother does not live at home with the baby, the baby has congenital abnormalities or diseases that cause eating difficulties such as cleft palate, congenital heart disease and so on.

The intervention provided was in the form of educational videos covering 3 topics, namely the basic knowledge of complementary foods, homemade complementary foods, and the challenge of giving complementary foods. Videos are presented in Banyumasan language with Indonesian subtitles. The content of the video contains local wisdom in preparing the complementary foods menu. Educational videos were uploaded via Youtube and respondents accessed through accounts that had been shared by researchers in the Whatsapp Group. The tools used in this study are:

1. Standardized weight scales and body length measurement
2. Questionnaire on mother's knowledge in giving MPASI which consists of 13 questions,
3. A 24-hour food recall sheet to review the practice of giving complementary foods, and
4. The observation sheet for assessing nutritional status contains a table of data on the respondent's body weight and length.

The questionnaire had been tested for validity. The procedure for this study was divide research subjects into 2 groups (control and intervention), explain the research to respondents and ask for informed consent after conducting informed consent, carry out pre-test measurements (knowledge and practice of mothers in giving complementary foods, baby's weight and body length), provide complementary feeding educational video intervention in the intervention group, carry out post-test measurements (mother's knowledge and practice in giving solids, baby's weight and length after the intervention) at 6 months after the pre-test measurements. The control group got access to educational videos after the post test measurement period was over. The intervention and control groups were divided into Whatsapp groups and received links at different times according to the research procedure. The period for giving the intervention started after the respondents filled out the pre-test until 6 months later, then the respondents in the intervention group filled out the post-test.

The data in this study were first analyzed by univariate, age as numeric data and education level, profession as categorical data, then the data was tested for normality using the Shapiro-Wilk test. The knowledge data were normally distributed so that the pre-post test knowledge data of each group were analyzed using the dependent T-test to measure differences in maternal knowledge before and after the intervention. Knowledge data between the intervention and control groups were analyzed by the independent T-test while nutritional status data used the Chi Square test. This research has passed the ethical review of the Ethics Committee of the Faculty of Health Sciences, Jenderal Soedirman University with the number No: 725/EC/KEPK/IV/2022.

3. Result

The study was conducted on 40 baby mothers divided into 20 intervention groups and 20 control groups. The research results are shown as follows.

Table 1 Demographic Characteristic of Children April 2022 (n=40)

Variable	Control		Intervention	
	n	%	n	%
Age				
6-8 months	1	5	1	5
9-12 months	6	30	2	10
12-24 months	13	65	17	85
Age to start eating complementary foods				
< 6 month	2	10	1	5
6 month	18	90	19	95
First meal				
Banana	2	10	4	20
Homemade porridge	9	45	10	50
Instant porridge	9	45	6	30

Table 2 Demographic Characteristic of Mother April 2022 (n=40)

Variable	Control		Intervention	
	n	%	n	%
Education Level				
Primary School	3	15	4	20
Junior High School	4	20	2	10
Senior High School	9	45	8	40
College/University	4	20	6	30
Occupation of Mother				
Formal Employment	1	5	4	20
Self Employed	4	20	5	25
Housewife	15	75	11	55
Family type				
Nuclear family	9	45	5	25
Extended family	11	55	15	75
Experience participating in complementary feeding health education				
Once	6	30	5	25
Never	14	70	15	75
Resources about complementary feeding				
Sosial media (internet)	13	65	12	60
Book	4	20	8	40
Family	2	10	0	0
Television	1	5	0	0

Table 3 Mother Characteristic by Age April 2022

Variable	Mean	(Min-Max)	95% CI
Age			
Control	30,8	19-40	25,52-29,82
Intervention	32,1	20-44	25,34-30,17

Table 4 Differences in mother knowledge before and after intervention video Oktober 2022 (n=40)

Variable	Mean	P value
Intervention Group		
Pre test	9,6	0,022
Post test	13,5	
Control Group		
Pre test	8,3	0,51
Post test	8,6	

*) paired t test

Table 6 Differences in children nutritional status before and after intervention video Oktober 2022 (n=40)

Variable	Measurement		P value
	Before intervention (n)	After intervention (n)	
Intervention Group			
Normal	6	4	0,6
Wasted	17	16	
Control Group			
Normal	2	3	0,52
Wasted	18	17	

4. Discussion

The right to adequate nutrition is a fundamental right for every child. Children who are fed enough of the right foods, in the right way, at the right time in their development, are more likely to survive, grow, develop and learn. They are better equipped to thrive, even when faced with disease, disaster or crisis [5]. Between the ages of 6 and 23 months – the complementary feeding period – breastfeeding and access to a diverse range of nutritious foods provide children with the essential nutrients, vitamins, and minerals they need to develop to their full physical and cognitive potential, with benefits that endure well into adulthood [6] [7]. The complementary feeding period is also a critical opportunity to prevent all forms of childhood malnutrition, including stunting, wasting, micronutrient deficiencies, overweight, obesity and diet-related non-communicable diseases. In addition, lifelong food preferences, tastes and habits are often established in childhood [5].

Children's diets are shaped by the distribution of food within the household, the prioritization of nutritious diets for children, women's decision-making in food purchasing, and gender preferences in feeding children. The caregiver's ability to provide appropriate feeding and care to their young child is also impacted by factors such as stress, emotional well-being and mental health) [8]. These intra-household dynamics can be improved with support from social protection programmes, interventions to support caring of caregiver, as well as through gender-sensitive health and nutrition programmes that foster women's empowerment and men's participation in feeding, care and child-rearing [9]. Mothers as caregivers or primary food providers need to get consistent support and support from the environment in terms of providing complementary foods so that the nutrition the child gets is optimal. Optimal nutrition can support good growth and development, especially as an effort to prevent stunting.

Nutrition-sensitive social protection services, coupled with nutrition counselling and education, can improve household food security, dietary diversity and caregiver empowerment [10], [11]. Empowering woman through community empowerment programmes is also an important measure that will indirectly contribute to improved complementary feeding [12].

Women empowerment is an underlying factor of child feeding and nutrition. Changes in women empowerment accounted for 17% of the improvements in MDD between 2005 and 2016. Survey-based women's empowerment index (SWPER) was a stronger predictor of the change in minimum dietary diversity (MDD), than known predictors like wealth, child age, and urban residence. As a critical underlying driver of child nutrition, women empowerment should be boldly addressed and integrated in nutrition interventions. Empowering women can improve child dietary diversity in Ethiopia [13].

The videos compiled by researchers are based on the topic of local wisdom, especially in preparing complementary food menu. The survey conducted by the researchers found that there are typical Banyumas foods that fit into the balanced menu category when applied and modified as a complementary feeding menu. Examples are sayur tegehan, sroto, and empal kupat. The menu recipe is presented in an educational video using Banyumasan language narration and Indonesian subtitles. The use of this language is a step so that the video is easily understood and interpreted by respondents who are the majority of Banyumas native people.

The video giving intervention is significant for the practice of complementary feeding. Video as a medium has a better effect on knowledge because of its visual and auditory nature which is facilitated by this type of media. Increased knowledge is applied by mothers/caregivers in the form of complementary feeding behavior. There was also an increase in the consumption of a variety of complementary food ingredients after the provision of interventions which could be identified as originating from different knowledge compared to before.

Another study with the same design was conducted by Fifali et. Al (2020) who researched the nutrition education program using videos performed in improving complementary feeding practices for dietary diversity comparing video and poster [14]. The results of Mochoni and Kimiywe's research (2020) also show there was a significant difference in knowledge between the intervention and control. A significantly higher proportion of mothers from intervention (100%) had good knowledge of the age of initiating complementary feeding as compared to the control group. In terms of practice, a significant difference was found between the control and intervention on complementary feeding [15].

The use of audio-visual tools has been found to be effective in passing messages. Since the video clips' messages are easily understood, interpreted due to the use of the local language, knowledge is easily gained by the respondent, better practices shown in the intervention group indicates gained knowledge. According to Ledoux., et al (2016) video learning strengthens and heightens mastery skills leading to individual's improved knowledge and understanding, which consequently may lead to improved practice [16].

From intervention group, there was better knowledge from the knowledge scores. The difference might have been strongly brought about by nutrition education video which were watched by the mothers in the intervention group since these findings agree with a study which was done on using the videos to enhance staff development so as to establish educational partnerships [17].

The results of this study showed no effect on nutritional status. This can happen because changes in nutritional status require a long time and the practice of giving solids is consistent from the mother every day. Many other factors have higher contribution to the practice of giving complementary feeding than mothers such as motivation, commitment, socioeconomic status, the environment which can influence mothers' practices in giving complementary foods and support the success of this intervention in order to achieve optimal nutritional status.

The limitations of this study include the lack of monitoring of respondents' viewing of videos, the new process relies on mothers' initiative and motivation to watch videos independently during the intervention time, the practice of giving complementary foods based on food recall one day before so that they cannot describe the process comprehensively.

This study shows that there is an effect of giving complementary breastfeeding educational videos based on local wisdom on mothers' practices in giving complementary foods, but there is no effect on the nutritional status of infants. This study recommends the existence of audiovisual media as a

driving force for the practice of giving MPASI which is complemented by a mother support group as reinforcement so that mothers receive support in consistently giving complementary foods every day. In addition, health education should be directed at breastfeeding mothers as a form of preparation for the period of complementary feeding and a preventive measure to avoid inadequate complementary feeding practices.

5. Aknowledgement
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