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THE INFLUENCE OF INFANT AND CHILD FEEDING COUNSELING (PMBA) ON MOTHER'S KNOWLEDGE AND PRACTICES AND THE GROWTH STATUS OF BADUTA IN THE KEBAYORAN LAMA AREA, SOUTH JAKARTA

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ABSTRACT

70% of the energy needs of infants aged 6-9 months are met by breast milk, 50% of the energy needs of 9-12 months are still met by breast milk, and only 30% of the energy needs of 12-24 months are met by breast milk. Complementary foods can meet the energy needs of infants and children aged 6-24 months. The introduction and provision of MP-ASI must be done gradually, both in terms of form and quantity. However, the results of the study found that in children aged 6-24 months, 2 out of 3 children did not receive adequate Complementary foods, and only 39.8% of children aged 6-24 months received adequate Complementary foods. The purpose of this study was to analyze the effect of PMBA counseling in improving mothers' knowledge and practices and toddler growth status. This study design was a quasi-experimental study, pre- and post-treatment groups, to determine the effect of PMBA counseling on mothers' knowledge and practices of PMBA and toddler growth status. This study was conducted in September-November 2022, involving 31 mothers of toddlers aged 6-24 months. The results of the study showed that counseling could improve knowledge and PMBA practices of mothers of 6-24-month-old toddlers, as well as the growth status of toddlers after PMBA counseling was given, with a value ($p<0.05$).

Keywords: *Counseling, Knowledge, PMBA practice, Growth status, Toddlers*

INTRODUCTION

During the golden period of childhood, which is from 0 to 24 months, the quality and quantity of breast milk and complementary foods are very important for the physical growth and intellectual development of children. As children grow older, their nutritional needs also increase. Infants from 0 to 6 months can meet their nutritional needs exclusively through breast milk. For infants aged 6-9 months, breast milk provides 70% of their energy needs, 50% for those aged 9-12 months, and only 30% for those aged 12-24 months. The energy needs of infants and children aged 6–24 months can be met through complementary foods that are appropriate in both quantity and type (1).

Complementary foods are foods or beverages given to infants or children aged 6-24 months to meet their nutritional needs, as breast milk alone can no longer provide all the nutrients they require. These foods can also be referred to as a transition from breast milk to family foods. The transition to complementary foods must be done gradually as the baby develops. The quantity and quality of MP-ASI must also be considered, as they can influence the infant's growth and development. However, research findings indicate that approximately two out of three children aged 0 to 24 months do not receive adequate MP-ASI. Based on research conducted by Ahmad in 2018 in Aceh, only 39.8% of children aged 6 to 23 months received adequate complementary feeding in terms of frequency and variety. Furthermore, in 2018, approximately 29.9% (twenty-nine-point nine percent) of infants experienced stunting (2).

Both the community and individuals, together with the government, are responsible for the health of the Indonesian people. Preventive and promotive efforts in addressing health issues in Indonesia are considered more appropriate than curative approaches, which focus on treatment. Nutrition and health education can be an alternative option for promotive efforts that can be carried out by nutritionists for the broader community. Positive results have been obtained regarding feeding infants and children through research conducted with mothers as respondents. In the study, Noviati et al. (2016) in their study stated the following: "Nutrition counseling can improve mothers' knowledge, attitudes, and practices and have a

positive impact on infant and child growth. PMBA counseling conducted by health workers has been proven to improve PMBA practices among children aged 6–24 months (3).

Jakarta Health Polytechnic II, which offers a Bachelor's Degree Program in Nutrition and Dietetics, Department of Nutrition, has the responsibility to produce qualified human resources who are ready to work to assist government programs in addressing nutrition issues in Indonesia, particularly nutrition issues in infants and children under two years of age. Becoming a nutrition educator is one of the competencies of a graduate of the Bachelor's Degree Program in Nutrition and Dietetics., counseling training conducted by students aims to acquire skills in providing counseling on infant and child feeding (PMBA).

Existing educational research on PMBA primarily focuses on mothers/caregivers or community health workers, observing behavioral changes resulting from education. No studies or research are examining how the competencies of Nutrition and Dietetics students in the Nutrition department, after receiving PMBA counseling training, are applied in implementing PMBA counseling skills with mothers/caregivers at health posts or through home visits. states as follows: "Among several theories of behavioral change, the theory of planned behavior is the most suitable theoretical foundation for fostering the intention to change behavior in practicing PMBA counseling." In the PMBA counseling education plan, activities were conducted that were deemed capable of fostering subjective norms, perceptions, and attitudes among Nutrition and Dietetics students, thereby generating their intention to practice PMBA counseling correctly. PMBA counseling provided by students in the correct manner is expected to motivate and encourage mothers to practice feeding their babies and children correctly.

This research is a 2-year ongoing study. In the first year (2021), baseline data on knowledge, attitudes, motivation, and counseling skills were collected, counseling training on PMBA was provided, and endline data were collected by measuring variables related to knowledge, attitudes, motivation, and counseling skills of PMBA among students of the Nutrition and Dietetics program. Additionally, counseling practices were conducted with mothers of infants, both with and without supervision.

Based on the results of the first year of research in 2021, there was a significant difference in the average knowledge and attitude scores of the intervention group (provided with supervision) and the control group (not provided with supervision) before and after PMBA counseling training ($p<0.05$). The research results also showed a difference in the average counseling skills scores between the intervention group and the control group. Therefore, the research findings can be concluded that the mentoring provided to the intervention group was able to improve counseling skills scores more significantly than those in the control group. Therefore, it is necessary to continue the study in the second year (2022) so that students become more skilled in providing PMBA counseling for Baduta mothers and provide benefits for mothers and Baduta.

Based on the background of the problem described above, the researcher felt it was important to evaluate the effect of PMBA counseling on the knowledge and practice of feeding infants and children among Baduta mothers and the growth status of Baduta in the Kebayoran Lama area of South Jakarta. This area is under the jurisdiction of the Jakarta II Health Polytechnic. Since 2020, this area, specifically RW04 in Kebayoran Lama Selatan, has been the site of community service activities by lecturers from the Jakarta II Health Polytechnic. The purpose of this study is to determine the effect of PMBA counseling on improving mothers' knowledge and practices and the growth status of toddlers.

MATERIAL & METHODS

This study used a quasi-experimental design, pre- and post-treatment groups to examine the effect of PMBA counseling on mothers' knowledge and practice of PMBA and the growth status of infants. The study was conducted from September to November 2022. The study was conducted in RW 04 Kebayoran Lama Selatan, South Jakarta, based on Research Ethics Approval Number: LB.02.01/I/KE/31/989/2022.

The sample size for this study was 31 mothers with infants and children aged 6–24 months in RW 04 Kebayoran Lama Selatan. The samples selected met the predetermined inclusion criteria. The inclusion criteria for the samples were as follows: 1) mothers with

infants and children aged 6–24 months; 2) neither the children nor the mothers were ill; 3) the mothers/caregivers of the infants were willing to participate in the research stages.

In this study, a group of mothers was provided with PMBA counseling using PMBA counseling techniques and steps, consisting of three counseling sessions over three months. The data used were primary data, including PMBA practices, hygiene practices, child weight, general child health data, child age and gender, mother age and occupation, as well as mother education and name. Interviews conducted with mothers/caregivers using a structured questionnaire were used to obtain data on PMBA practices by mothers/caregivers. Interviews with mothers/caregivers using a structured questionnaire were used to obtain data related to infant and child feeding practices in RW 04 Kebayoran Lama Selatan, South Jakarta. The questionnaire was modified from the PMBA module of the Ministry of Health of the Republic of Indonesia in 2014 into a PMBA questionnaire for children aged 6–24 months.

The assessment of PMBA practices among mothers of infants aged 6–24 months was conducted using a questionnaire that evaluated cleanliness, variety, food texture, portion size of complementary foods, frequency of complementary food provision, frequency of breastfeeding, portion size or quantity of food, and included food texture and the number of snacks consumed per day. Variety or diversity of food in complementary feeding includes the number of food groups consumed by the child in a day. In assessing variety, there are four food groups: staple food groups such as grains or tubers, animal protein groups such as meat, including milk and its products, and eggs as a source of iron, plant protein groups such as legumes and their products such as tempeh and tofu or beans, and vegetable and fruit groups as sources of vitamin A.

The characteristic data were categorized and analyzed descriptively using Microsoft Excel version 2010 and the Statistical Programme for Social Sciences (SPSS) IBM series 24. The results were presented in the form of frequency distributions, mean values, and standard deviations. Inferential statistics included the Kolmogorov-Smirnov normality test and the paired sample t-test to analyze differences in mean knowledge scores, PMBA practices among mothers, and child growth status. The respondents' knowledge and PMBA practices

were categorized into three groups: good (score ≥80), adequate (60–79.9), and poor (score <60).

RESULT & DISCUSSION

A. Respondent Characteristics

The results of the study in Table 1 show that the number of respondents with complete data for processing was 31 people. Respondents were aged between 21 and 46 years old, with the largest percentage being mothers/caregivers with a high school education and the highest percentage of mothers/caregivers with a daily occupation being housewives. Most of the respondents' children in this study were female, with the majority being children aged 12-24 months.

Table 1. Characteristics of mothers, infants, and children aged 6-24 months

Characteristics	n (%)
Mother's Age (years)	
< 30 years	17 (54.8)
> 30years	14 (52.2)
Mothers education	
Elementary school	0
Junior high school	3 (9.7)
Senior high school	22 (70.9)
Higher education (Diploma)	6 (19.4)
Occupation	
Housewife	25 (80.6)
Employee	4 (12.9)
Entrepreneur	2 (6.5)
Farmer, laborer	0
Other	0
Age of infant and children	
0-6 month	0
6-9 month	4 (12.9)
9-12 month	7 (22.6)
12-24 month	20 (51.6)
Gender of infant and children	
Male	15 (47.4)
female	16 (51.6)

B. Knowledge

Initial knowledge is a good predictor of knowledge. An individual's initial knowledge before receiving an intervention determines how much their knowledge increases after the

intervention. Good knowledge of complementary feeding (MP-ASI) among mothers certainly enhances their understanding of MP-ASI, which meets the nutritional needs of children, enabling mothers to gradually introduce and provide MP-ASI to their children (4). The results in Table 2 show that before counseling, the average knowledge score of mothers/caregivers was 69.6%, and after counseling, it increased to 85.9%. The average knowledge score of mothers of children aged 6–24 months increased by 16.03 points after counseling. The results of the paired sample t-test showed a significant difference in the average knowledge scores of mothers of infants aged 6–24 months before and after counseling ($p<0.05$).

Table 2. Average knowledge scores of mothers of infants aged 6–24 months before and after treatment

Variable	N=31	*p value*
Knowledge		
After	69.6±15.7	0.000
Before	85.9±15.8	
Different (end-base)	16.3	

The results of this study are in line with research conducted by Desima Rony Asi (2021) in the working area of the Merapi I Community Health Center in Lahat Regency on the effect of PMBA counseling on the knowledge and attitudes of a group of mothers with children aged 6-23 months, which showed an increase in knowledge after PMBA counseling was provided. This is also supported by Widaryanti et al. (2021) with their research on program socialization and the formation of PMBA srikandi in Sentikan Hamlet, which found that from the pre- and post-results, there was an increase in knowledge about infant and child feeding (PMBA) as well as communication and counseling techniques after socialization and the formation of PMBA srikandi at the posyandu cadres (5).

C. Practices

The study found that feeding practices for infants and children aged 6-24 months regarding breast milk and breastfeeding frequency were good. Mothers/caregivers understood the

importance of breast milk for children's health and intended to continue breastfeeding until their children were 2 years old. The frequency of complementary feeding provided by mothers for infants aged 6–9 months is 2–3 times a day, plus snacks. As the child ages, the frequency of main meals for children aged 9–24 months increases to 3 times a day, plus snacks. However, the frequency of main meals for most children is still not appropriate, so further intervention is needed during subsequent visits.

Factors to consider in infant and child feeding practices include the quantity or portion size of food. As children age, their nutritional needs increase, and the amount of food they consume also increases. Nearly half of the responding mothers provided food quantities that were inappropriate for their children's ages. If the portion sizes provided in infant and child feeding practices are insufficient to meet nutritional needs, this can have negative effects on children's growth, including stunted weight gain. Mekonnen et al. (2021) state that proper infant and child feeding practices (PMBA) are very important to prevent malnutrition in infants and children. Therefore, factors that need to be considered in PMBA include the amount of complementary food given, the frequency of complementary food given, the diversity of food ingredients, and the consistency or form of complementary food.

This study found that most complementary foods given by mothers to their children were of inappropriate form/texture and unsuitable for the child's age. For infants aged 6–9 months, some mothers still provided porridge with a thin texture, which should instead be thick or mashed. This occurs because mothers still believe that thin porridge is easier for infants to swallow and digest. Among infants aged 9–12 months, some mothers still provided porridge, whereas the recommended action is to provide more solid and chopped foods, such as rice porridge. In the 12-24 month age group, there are still mothers who give porridge or soft rice. The appropriate action is to provide food in the form of family or adult meals. These results align with a study conducted by Nurwulansari et al. (2018) in Sukabumi, which found that some mothers still feel concerned about giving thick textures to infants, resulting in food forms that are still inappropriate (6).

The age of 6–9 months is a crucial period for children to enhance oromotor skill stimulation by gradually introducing solid foods. Feeding issues in children may arise if solid

foods are introduced too late after the age of 9 months, potentially leading to such issues in subsequent ages. Therefore, as the child ages, the consistency of food should also be gradually increased. Initially, thick, smooth porridge is given at 6 months of age. Family foods can be introduced to children before 12 months of age with a softer texture (modified family food). By 12 months of age, children can be given the same foods as other family members (7).

The results of this study indicate that mothers still lack variety in the foods they provide to their children. Before counseling, only 1 out of 3 mothers in this study provided varied foods at each meal, and after counseling, this increased to 3 out of 5 mothers. The food menu consists of staple foods as a source of carbohydrates, animal-based foods as a source of iron, legumes and their products, and vegetables and fruits as a source of vitamin A. Most mothers still provide food consisting of only 2 or 3 food groups. The results of this study are still lower than those of the 2018 Riskesdas, which showed that the proportion of varied foods in the 6-23 month age group in Indonesia was 46.6%. This study aligns with research in Aceh on complementary feeding patterns for children aged 6–23 months, where only two of the four indicators—meal frequency and age appropriateness—were categorized as good. In contrast, meal variety/diversity and meal quantity were still very low, This indicates that the quality of complementary feeding (MP-ASI) remains low (2).

Complementary foods (MP-ASI) provided by mothers already contain staple foods, but consumption of animal-based foods, nuts, vegetables, and fruits still needs to be increased. Consumption of vegetables and fruits increased after counseling compared to before counseling. This finding aligns with the research by Saha et al. (2015), which states that increased consumption of vegetables and fruits is an effect of counseling conducted 2 to 4 times (8). Personal counseling is used as a tool for behavior change communication, which is beneficial in improving infant and child feeding practices. Snack food provision is mostly appropriate for age and food type, such as biscuits and fruits; however, some mothers still provide snacks at ages with inappropriate food types, such as crackers, chips, and candies.

Child growth and development can be influenced by the quality of complementary feeding, as indicated by low dietary diversity in infants and children. Risk factors

contributing to stunted growth and development in children include insufficient protein intake. The findings of Beal et al. (2018) on complementary feeding practices in Indonesia indicate that the risk of stunting in children can be reduced by providing a variety of foods, particularly animal-based foods as a source of iron (9).

Most mothers in this study do not work, so the preparation and feeding of children are primarily done by the mothers. Personal hygiene is already practiced by the mothers, such as washing hands with soap and running water, boiling water until it is fully cooked, and paying attention to the child's response, such as observing when the child shows signs of wanting to eat and not forcing them. There are several things mothers should consider when preparing and storing safe food for children, including maintaining cleanliness of the food preparation area and utensils, keeping hands clean, separating cooked food from raw food using different containers, and separating fresh food from fully cooked food (such as meat, chicken, eggs, and fish) using different containers, storing food at the appropriate temperature according to the type of food and in a clean condition, avoiding contamination from dust and animals, and using clean, safe water (1).

Based on the results of the normality test, the data on feeding practices for infants aged 6-24 months were normal (P>0.005), so they were further analyzed using a paired T-test. The research results presented in Table 3 show that after counseling, there was an increase in the average practice scores for infant and child feeding among mothers or caregivers for children aged 6–24 months. Before counseling, the average practice score for mothers or caregivers was 56.09, while the average practice score after counseling was 67.58. The statistical test results showed a significant increase in the average score for infant feeding practices for children aged 6–24 months ($p < 0.05$). These results are consistent with the findings of Arini et al. (2017) and Dewi and Aminah (2016), who stated that providing education to mothers/caregivers can improve the scores and behaviors related to infant feeding practices (10-11).

This is consistent with the study by Hestuningtyas et al. (2014), which showed a significant increase in mothers' PMBA practices after receiving nutrition counseling ($p = 0.000$) (12). A study in Uganda showed that nutrition education significantly impacts

mothers' knowledge in preparing children's food, practices, and attitudes toward feeding (13). Table 3 shows the research results based on PMBA practice categories, indicating an increase in practice percentages before and after counseling was provided to mothers. For mothers with good PMBA practices before counseling, the percentage was still 0% and increased to 29% after counseling. This indicates that the counseling process can improve feeding practices for infants and children aged 6–24 months by mothers/caregivers.

Table 3. Mean values and categories of feeding practices for infants and children aged 6–24 months

Variable	N=31	p value
Average practice ± SD PMBA		
Good	69.6±15.7	0.000
Fair	85.9±15.8	
Poor	16.3	

*T-test, significant p<0.05

The increase in infant and child feeding practices among mothers must be accompanied by an increase in knowledge, attitudes, and practices, as indicated by the research findings of Hestuningtyas et al. (2014), which state that nutrition counseling can significantly improve mothers' knowledge, attitudes, and practices in feeding children and children's nutrient intake (12). These results are consistent with the study conducted by Noviati et al. (2016), where the treatment group showed significant increases ($p < 0.05$) in all variables at the beginning and end of the study, including mothers' knowledge, attitudes, and practices in feeding children, as well as weight gain (14). Another study by Azzahra et al. (2015) stated that there was an increase in mothers' knowledge and attitudes regarding complementary feeding for children aged 6-24 months after counseling (15).

D. Growth Status

Table 4 shows that based on statistical test results, the growth status of infants and children aged 6–24 months in the “Improved” category increased significantly from 41.9% to 74.2%.

Growth status was obtained from monthly weight measurement data recorded in the Health Card (KMS).

Table 4. Growth status of infants and children aged 6–24 months

Criteria	Visit 1	Visit 2	Visit 2	p value
BGM	0	0	0	0.006*
2T	0	0	0	
Non card health	1 (3.2)	0	0	
Not increase	11 (35.5)	12 (38.7)	8 (25.8)	
Increase	13 (41.9)	13 (41.9)	23 (74.2)	
Incomplete data	6 (19.4)	4 (12.9)	0	

*Wilcoxon test, significant < 0.05

Growth status conditions, incomplete data, no KMS, align with the findings of the implementation study on the use of the KIA book, which indicated that KIA book ownership has increased but the completeness of book entries remains low, including the growth monitoring section (16). Statistical test results show that the growth status of infants and children aged 6–24 months has significantly improved ($p<0.05$). This is in line with the research by Ningsih et al. (2022), which states that there is a significant effect of PMBA counseling on the nutritional status of toddlers (17). Compared to mothers of toddlers who have received complete counseling, mothers of toddlers who have not received complete counseling (2 to 3 times) tend to have toddlers with abnormal nutritional status.

CONCLUSION

The knowledge of mothers of toddlers aged 6-24 months before counseling was mostly categorized as sufficient with an average score of 69.6 and increased to good with an average score of 85.9. There was a significant difference in the knowledge of mothers of toddlers aged 6-24 months before and after PMBA counseling (<0.005). Meanwhile, the PMBA practices of mothers of toddlers aged 6-24 months before counseling were mostly categorized as poor with an average score of 56.09, and increased after counseling with an average score of 67.58. There was a significant difference in the practices of mothers of toddlers aged 6-24 months before and after PMBA counseling (<0.005). Counseling provided by Nutrition and

Dietetics students can affect the growth status of toddlers aged 6-24 months with a p value of 0.006 ($p < 0.05$).

Based on the results of the evaluation of mothers of toddlers regarding PMBA counseling activities, they felt happy and found it beneficial. Therefore, counseling activities need to be carried out routinely and can be carried out by officers or Posyandu cadres. Students can practice PMBA counseling for mothers of toddlers in the area around the campus, thus bringing benefits to the community and also improving students' counseling skills.

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