

# The Effect of Midwife Assistance in Giving MPASI on Weight Growth of Infants Aged 6-24 Months

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## ABSTRACT

*The assistance of midwives in complementary feeding (MPASI) is an important effort to prevent nutritional problems and support optimal baby growth. However, there are still babies with weight gain that does not match the standards due to improper complementary feeding practices and limited assistance from health workers. This study aims to analyze the effect of midwifery assistance in the provision of complementary foods on weight growth of infants aged 6-24 months. This research employed a quasi-experimental design utilizing a pretest-posttest control group approach, conducted within the working area of Ambacang Health Center, Padang. A total of 40 mothers with infants aged 6-24 months were recruited through purposive sampling and subsequently allocated into intervention and control groups. Over a three-month period, the intervention group received midwife-led assistance related to complementary feeding practices, while the control group continued to receive standard routine care. Data were analyzed using a paired t-test with a significance threshold set at 0.05. The findings revealed that infants in the intervention group experienced an average weight gain of 0.83 kg (range: 0.6–1.2 kg), which was higher than the 0.47 kg (range: 0.3–0.7 kg) observed in the control group. The paired t-test further demonstrated a statistically significant increase in body weight within the intervention group following the mentoring period ( $p=0.001$ ). It was therefore concluded that midwife assistance in complementary feeding provision has a positive effect on weight gain among infants aged 6-24 months. Continuous mentoring is an effective strategy in supporting infant growth and preventing nutritional problems.*

**Keywords:** Assistance, Midwife, MPASI, Growth, Weight

## INTRODUCTION

Complementary feeding (CF) is the process of introducing foods other than breast milk to infants beginning at six months of age to meet their increasing nutritional requirements. Accuracy in the practice of complementary feeding is one of the crucial factors that affect the process of optimal growth and development in infants.

Inappropriate complementary feeding practices may lead to various nutritional problems, including growth disorders and suboptimal weight gain. These conditions can negatively affect children's health outcomes in both the short and long term (Setiawati et al., 2020).

Infant malnutrition remains a significant public health challenge in Indonesia. One of the contributing factors is inappropriate complementary feeding practices, including the timing of introduction, food type, portion size, feeding frequency, and nutritional quality provided to infants.

A study conducted by Fitria and Lestari (2020) reported that approximately 30% of infants aged 6–12 months experienced difficulties related to complementary feeding practices. This condition may result in inadequate nutrient intake, thereby affecting infant growth and weight gain.

To address these challenges, support from healthcare professionals, particularly midwives, is essential. Midwives play a vital role in providing education and guidance to mothers because they interact directly with women and infants from pregnancy through the child's growth and developmental period.

Midwifery assistance can improve mothers' knowledge and skills regarding appropriate complementary feeding according to the nutritional needs of infants. Through health education, counseling, and regular growth monitoring, midwives can help prevent nutritional problems among infants (Rachmawati et al., 2021).

Previous studies have demonstrated that health education provided by midwives significantly improves mothers' understanding of appropriate complementary feeding practices. Kusumawati (2020) reported that educational interventions delivered by midwives had a positive effect on maternal knowledge regarding complementary feeding.

Furthermore, Zulfahmi et al. (2020) found that infants who received assistance related to complementary feeding experienced greater weight gain than those who did not receive such support. These findings highlight the importance of healthcare professionals' involvement in promoting appropriate infant feeding practices.

However, the implementation of complementary feeding assistance by midwives in primary healthcare settings remains suboptimal. Several studies have indicated that the assistance provided is often unstructured and not implemented continuously, limiting its effectiveness in improving infant growth outcomes.

Based on these considerations, the present study offers a novel contribution by evaluating the effect of midwifery assistance in complementary feeding practices on weight gain among infants aged 6–24 months using both an intervention group and a control group. Therefore, this



study aimed to analyze the effect of midwifery assistance in complementary feeding practices on the weight growth of infants aged 6–24 months in the working area of the Ambacang Community Health Center (Puskesmas Ambacang), Padang.

## METHODS

This study uses the type of quantitative research with quasi-experimental design with pretest–posttest approach with control group design. The research was conducted in the working area of Ambacang Padang Health Center. The population in this study is mothers who have babies aged 6-24 months who are in the working area of Ambacang Health Center. The sample of 40 respondents were selected using purposive sampling technique, then divided into two groups, the intervention group and the control group of 20 respondents each. The inclusion criteria in this study are mothers who have babies aged 6-24 months, willing to be respondents, babies in good health, and mothers who actively participate in posyandu activities. Meanwhile, the exclusion criteria were mothers who did not complete the series of studies, babies with chronic diseases or congenital abnormalities, and respondents who moved during the study.

The intervention group received midwife assistance related to MPASI for 3 months, while the control group did not get assistance but only services at the posyandu every month as usual. Midwifery assistance is carried out in the intervention group through education on proper solid feeding, consultation, and monitoring of solid feeding practices for mothers. Data collection was conducted through several stages, namely pretest and posttest measurements. The independent variable in this study is the accompaniment of midwives in the provision of MPASI, while the dependent variable is the growth of the baby's weight. Data on respondents' characteristics were collected using questionnaire sheets that included maternal age, education, and occupation. Baby weight growth Data obtained through weight measurement using baby scales that have been calibrated and recorded on the observation sheet. Weight measurements were performed before the intervention (pretest) and after accompaniment during the study period (posttest).

Data analysis was done through univariate and bivariate analysis. Univariate analysis was used to describe the frequency distribution of respondents' characteristics as well as the average value of infant weight gain in each group. Bivariate analysis was conducted to determine the effect of midwife assistance on infant weight growth using paired t-test to see the difference in weight before and after intervention in the same group, and independent t-test to compare the difference in weight gain between the intervention group and the control group with a significance level of 0.05. This study has paid attention to the ethical aspects of research by providing an explanation in advance to the respondents about the objectives and procedures of the study. Respondents who are willing to participate in the study were asked to sign a consent sheet (informed consent) as a form of voluntary consent and guaranteed confidentiality of identity and data provided during the research process.

## RESULTS

### 1. Univariate Analysis

Univariate analysis was conducted to describe the characteristics of respondents and the distribution of infant weight gain in the intervention group and control group in the Ambacang Padang Health Center. The characteristics of the respondents shown include the age of the mother, the level of education, and the mother's job.

#### a. Distribution of Respondent Characteristics

**Table 1. Distribution of Respondent Characteristics**

| Characteristics of Respondents | Frequency (f) | Percentage (%) |
|--------------------------------|---------------|----------------|
| Mother's Age                   |               |                |
| < 25 years old                 | 12            | 30             |
| 25-35 years old                | 20            | 50             |
| > 35 years old                 | 8             | 20             |
| Mother's Education             |               |                |
| SD                             | 6             | 15             |
| SMP                            | 10            | 25             |
| High school                    | 18            | 45             |
| College                        | 6             | 15             |
| Mother's Work                  |               |                |
| Housewife                      | 26            | 65             |
| Self-employed                  | 8             | 20             |
| Officers                       | 6             | 15             |
| <b>Total</b>                   | <b>40</b>     | <b>100</b>     |

Based on the table above, it is known that most of the respondents are in the age group of 25-35 years, namely as many as 20 people (50%). Based on the level of education, the majority of respondents have a high school education as many as 18 people (45%). Meanwhile, based on work, most of the respondents are housewives as many as 26 people (65%). This shows that the majority of mothers have enough time to care for their babies and follow health service activities such as posyandu.

#### b. Average Weight Gain of Infants in the Intervention and Control Groups

**Table 2. Average Weight Gain of Infants in the Intervention and Control Groups**

| Groups       | N  | Mean (kg) | Min (kg) | Max (kg) |
|--------------|----|-----------|----------|----------|
| Intervention | 20 | 0.83      | 0.6      | 1.2      |
| Control      | 20 | 0.47      | 0.3      | 0.7      |



Based on the table, it is known that the average weight gain of infants in the intervention group was 0.83 kg with a range of weight gain of 0.6-1.2 kg. Meanwhile, in the control group the average weight gain of 0.47 kg with a range of 0.3-0.7 kg. These results showed that the weight gain of infants in the group who received midwife assistance was higher than that of the group who did not receive assistance.

## 2. Bivariate Analysis

Bivariate analysis was conducted to determine the effect of midwifery assistance in the provision of complementary feeding on weight growth of infants aged 6-24 months using paired t-test and independent t-test.

### a. Differences in the Weight of Infants Before and After the Intervention in the Intervention Group

**Table 3. Differences in the Weight of Infants Before and After the Intervention in the Intervention Groups**

| Variable                               |  |  |  | Mean    | SD   | p-value      |
|----------------------------------------|--|--|--|---------|------|--------------|
| Infant Body Weight Before Intervention |  |  |  | 7.21 kg | 0.82 |              |
| Infant Body Weight After Intervention  |  |  |  | 8.04 kg | 0.88 | <b>0.001</b> |

Based on Table 3, it is known that the average weight of the baby before the intervention was 7.21 kg, while after the midwife's assistance, it increased to 8.04 kg. Paired t-test results showed a value of  $p = 0.001$  ( $p < 0.05$ ), which means there is a significant difference between the baby's weight before and after the midwife assistance in the provision of complementary foods in the intervention group.

### b. Differences in Infant Weight Gain Between the Intervention and Control Groups

**Table 4. Differences in Infant Weight Gain Between the Intervention and Control Groups**

| Groups       | Weight Gain (Kg) | SD   | P-Value      |
|--------------|------------------|------|--------------|
| Intervention | 0,83             | 0,21 |              |
| Control      | 0,47             | 0,18 | <b>0,001</b> |

Based on Table 4, it is known that the average weight gain of infants in the intervention group was 0.83 kg, while in the control group it was 0.47 kg. The results of the independent t-test showed a value of  $p = 0.001$  ( $p < 0.05$ ) which means there is a significant difference between the baby's weight gain in the group who received midwife assistance and the group who did not get assistance. This shows that the assistance of midwives in the provision of complementary foods affect the increase in weight growth of infants aged 6-24 months.

## DISCUSSION

### 1. Average Weight Gain of Infants in the Intervention and Control Groups

The results showed that the average weight gain of infants in the intervention group who received midwife assistance was 0.83 kg with a range of 0.6–1.2 kg, while in the control group only 0.47 kg with a range of 0.3–0.7 kg. These findings indicate a fairly clear difference between the two groups, where babies whose mothers received midwife assistance gained more weight than babies who did not receive assistance. These differences indicate that Mentoring Interventions by health workers have an important role in supporting the growth of infants in early life. The assistance provided by midwives can increase the knowledge of mothers related to breastfeeding, monitoring the baby's growth and development, as well as the practice of proper baby care so that it has an impact on increasing the baby's weight.

Baby weight gain is one of the main indicators in assessing the status of growth and development of the baby in the early period of life. Optimal weight growth indicates that the baby's nutritional needs are adequately met. Conversely, weight gain that does not comply with the standards can be an indication of nutritional problems or less than optimal care. Therefore, regular monitoring of infant growth is very important to detect early growth disorders so that appropriate intervention can be immediately carried out by health workers (Afian et al., 2021; Hardiningsih et al., 2021).

The role of health workers, especially midwives, is very important in efforts to improve the health of mothers and babies. Midwives are health workers who are closest to the community so that they have a strategic role in providing education and assistance to mothers. Through an educational and supportive approach, midwives can help mothers understand the importance of monitoring baby growth and proper nutrition practices. Such support can improve the success of maternal and child health programs in the community (Wahyuni et al., 2020).

The results of this study also show that in the absence of assistance, the baby's weight gain tends to be lower. This is likely due to the mother's lack of knowledge regarding the correct baby care practices. Mothers who do not receive guidance from health workers may have difficulty in applying the correct breastfeeding technique or in understanding the nutritional needs of the baby. As a result, the baby's nutritional intake becomes less than optimal so that the baby's weight growth is not optimal.

Conceptually, the mentoring approach is one of the effective public health intervention strategies in improving health behavior. Mentoring allows direct interaction between health workers and the community so that the educational process becomes more effective. In the context of maternal and child health, mentoring can improve the knowledge, attitudes, and practices of mothers in caring for babies. The increase in maternal capacity ultimately has an impact on improving the nutritional status and growth of infants (Astutik et al., 2024).

The findings of this study also reinforce the concept that infant growth is the result of interactions between biological factors and environmental factors. Biological factors include the baby's health condition from birth, while environmental factors include parenting, nutrition, and





support from health workers. Midwife assistance is part of the environmental factors that can provide positive support for the baby's growth process. With the assistance, mothers get the right information so that they can provide care that suits the needs of the baby (Afian et al., 2021).

Mentoring also serves as a means of monitoring the baby's growth on an ongoing basis. Through this activity, midwives can evaluate the baby's development and provide recommendations if growth problems are found. Regular monitoring can prevent more serious growth disorders. Therefore, mentoring activities have strategic value in preventing nutritional problems in infants (Setiawan et al., 2021).

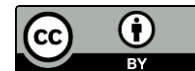
Beyond promoting infant growth, mentoring programs also contribute to strengthening maternal confidence in fulfilling her responsibilities as the primary caregiver. When mothers perceive adequate support from healthcare providers, they tend to show greater motivation in adopting recommended infant care practices. Such support further helps alleviate maternal anxiety when confronted with various challenges that may emerge throughout the caregiving process. Since the mother's psychological well-being directly affects both the quality of care provided and the infant's growth outcomes (Astutik et al., 2024), this aspect deserves particular attention.

Drawing from the findings of this research, it can be inferred that midwife-led assistance plays a significant role in enhancing infant growth through several interrelated mechanisms. These encompass strengthening maternal knowledge, developing caregiving competencies, and conducting regular growth monitoring. Such interventions additionally support the assurance of adequate infant nutrition through the application of proper breastfeeding techniques. Consequently, midwifery assistance may serve as one of the effective approaches for enhancing infant health outcomes.

Taken together, the results indicate a positive relationship between midwife assistance and infant weight gain. These outcomes are consistent with earlier studies emphasizing the essential contribution of health professionals in fostering infant growth through educational guidance and health surveillance. Accordingly, strengthening maternal assistance programs delivered by midwives is essential to improving the overall quality of maternal and child health services. Through sustained mentoring initiatives, infant growth is anticipated to progress optimally, thereby reducing the likelihood of nutritional problems occurring during the early stages of life.

## **2. The Effect of Midwife Assistance in Giving MPASI on Weight Growth of Infants Aged 6-24 Months**

The results showed that the average body weight of infants before the intervention was 7.21 kg and increased to 8.04 kg after the assistance of midwives in the provision of complementary foods. Paired t-test results showed a value of  $p = 0.001$  ( $p < 0.05$ ) which means there is a significant difference between the weight of the baby before and after the midwife assistance. These findings indicate that intervention in the form of midwife assistance has a positive impact on increasing the weight of infants aged 6-24 months. This increase in body weight indicates that the intervention



provided is able to assist mothers in providing more appropriate complementary foods so as to support optimal baby growth.

Additional analysis in this study indicated a notable disparity in weight gain between the two groups, with the intervention group averaging 0.83 kg compared to 0.47 kg in the control group. This difference was confirmed statistically through an independent t-test, which produced a p-value of 0.001 ( $p < 0.05$ ), thereby confirming the significance of the observed gap. Consequently, infants supported by midwife assistance showed more substantial weight gain relative to those who received no such intervention. This finding underscores the influence of midwife-assisted complementary feeding practices on the weight growth of infants within the 6-24 month age range.

Weight growth is an important indicator in assessing the nutritional status of the baby. The weight that increases according to age reflects that the nutritional needs of the baby are well met. Conversely, if the baby's weight does not increase accordingly, it can be a sign of a disturbance in the baby's nutritional intake or health. Therefore, regular monitoring of the baby's growth is very important to ensure that the baby grows and develops optimally (World Health Organization, 2023).

At the age of 6-24 months, the baby's nutritional needs increase because the baby is experiencing very rapid growth. In this period, breast milk alone is no longer enough to meet the energy and nutritional needs of the baby, so complementary foods are needed. MPASI serves to complement the nutritional needs of babies so that growth and development can take place optimally. Giving the right MPASI in terms of time, amount, frequency, and type of food is very influential on Baby growth (UNICEF, 2021).

This study's outcomes align with earlier research demonstrating that providing mothers with education on complementary feeding plays a role in enhancing infants' nutritional status. When mothers possess sufficient understanding of MPASI, they tend to offer their babies food of higher nutritional value, which subsequently increases the intake of energy and nutrients required for growth. It can therefore be concluded that strengthening maternal knowledge—whether through education or ongoing assistance—serves as an effective means of promoting infant weight gain (Putri & Afifah, 2023).

Midwives' assistance in the provision of MPASI has an important role in improving the knowledge of mothers about the nutritional needs of infants. Through the assistance, mothers can obtain information about the type of food that is appropriate to the age of the baby as well as the correct way of food processing. In addition, mothers can also obtain information about the frequency and portion of giving the right solids. The increase in knowledge can help mothers in providing more nutritious food to babies so that it supports the baby's growth (Norlina & Anjani, 2024).

The researchers postulate that the improvement in infant weight following the intervention stemmed from mothers acquiring more comprehensive knowledge about complementary feeding. Through midwife assistance, mothers became better equipped to identify food types appropriate





to their infant's needs. Moreover, they gained an understanding of proper food preparation methods that help preserve nutritional value. As a result, infants were able to receive improved nutritional intake compared to the period before assistance was provided.

These findings can also be interpreted through the lens of Health Behavior Theory, which posits that an increase in knowledge influences behavioral change. Within the context of complementary feeding, mothers possessing sound nutritional knowledge tend to exhibit more favorable feeding practices. Such behavioral improvements subsequently enhance the quality of food provided to infants, which ultimately affects both nutritional status and growth outcomes (Glanz et al., 2021).

The assistance carried out by health workers also allows for periodic monitoring of the baby's growth. Through this monitoring, health workers can detect early if there is a growth disorder in infants. Early detection is essential so that intervention can be made immediately before nutritional problems become more serious. Growth monitoring is one of the important strategies in the Prevention of nutritional problems in early childhood (Ministry of health of the Republic of Indonesia, 2022).

The researchers assume that the disparity in weight gain observed between the intervention and control groups can be attributed to differences in the information received by mothers. Mothers assigned to the intervention group were provided with direct guidance regarding appropriate complementary feeding practices, whereas those in the control group did not receive any specialized assistance. This discrepancy likely contributed to variations in infant feeding practices between the two groups.

Providing appropriate complementary foods plays a vital role in supporting healthy infant growth. Complementary foods should contain adequate macronutrients—including carbohydrates, proteins, and fats—as well as essential micronutrients such as vitamins and minerals. This combination of nutrients is essential for supporting metabolic function and tissue development. When these nutritional requirements are adequately fulfilled, infants can achieve optimal weight growth (World Health Organization, 2023).

Previous research has shown that counseling regarding infant feeding can improve child feeding practices. Counseling gives mothers the opportunity to get the right information about the baby's nutrition. In addition, mothers can also discuss various obstacles faced in providing food to babies. This process can improve the mother's ability to provide nutritious food to the baby (Dewey & Adu-Afarwuah, 2020).

Researchers assume that the success of the intervention in this study is also influenced by the active involvement of mothers during the mentoring process. Mothers who actively participate in mentoring activities tend to understand the information provided more easily. In addition, mothers also have the opportunity to practice directly how to give the right solid food. This can increase the effectiveness of interventions provided by midwives.

In addition to knowledge, environmental factors also affect the practice of giving solid foods. A supportive family environment can help the mother in providing nutritious food for the

baby. Family support can be in the form of help in preparing meals or providing motivation to the mother. Such support can improve the success of appropriate complementary feeding practices (UNICEF, 2021).

Researchers assume that the increase in infant weight in this study is also influenced by the mother's motivation to improve feeding patterns after getting assistance. When mothers know the importance of nutrition for baby's growth, mothers tend to pay more attention to the quality of food given. Mothers also become more consistent in providing MPASI in accordance with the recommended schedule. This condition can increase the baby's nutritional intake so that the baby's weight increases.

Other studies have shown that providing education about MPASI can significantly improve the nutritional status of infants. Education helps mothers understand the importance of food variety in meeting baby's nutritional needs. A good variety of foods can increase the intake of nutrients necessary for growth. Thus education about MPASI is one of the important strategies in an effort to improve the nutritional status of children (Black et al., 2021).

Midwife assistance also allows for two-way communication between mothers and health workers. This communication provides an opportunity for mothers to ask questions about the various problems faced in the provision of complementary foods. Health workers can provide solutions that suit the condition of the mother and baby. This communication process can increase the mother's understanding of the proper provision of MPASI (Ministry of health of the Republic of Indonesia, 2022).

Researchers assume that good communication between midwives and mothers during the mentoring process also influences the success of the intervention. Through this communication, mothers can more easily understand the information provided by health workers. In addition, mothers also feel more confident in implementing the recommended practice of giving solid food. This confidence can increase the consistency of the mother in providing nutritious food to the baby.

In general, interventions in the form of assistance by health workers are one of the effective strategies in improving feeding practices in infants and children. Mentoring can improve the knowledge, attitude, and skills of mothers in giving food to babies. With this increased capacity, the mother can provide more nutritious food for the baby. This can ultimately improve the growth and nutritional status of the baby (World Health Organization, 2023).

Overall, the results of this study indicate that the assistance of midwives in the provision of complementary foods has an influence on the increase in body weight of infants aged 6-24 months. Higher weight gain in the intervention group showed that the intervention was effective in supporting infant growth. Mentoring provides an opportunity for mothers to gain knowledge and guidance on the proper practice of giving solid food. Thus, midwife assistance can be an effective strategy in increasing the growth of the baby.



## CONCLUSIONS

This study shows that the assistance of midwives in complementary feeding (MP-ASI) is related to increased weight growth of infants aged 6-24 months. The results of the analysis showed a significant difference in both weight changes before and after the intervention as well as between the group receiving assistance and the control group. These findings indicate that midwife assistance can improve the mother's ability to provide more appropriate complementary feeding, which ultimately has a positive impact on the baby's growth.

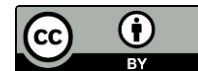
Although this study shows significant results, there are some limitations that need to be considered. This study was conducted with a limited number of samples and has not fully controlled for other factors that can affect infant weight gain, such as infant health conditions, variations in food intake at home, and family socioeconomic factors. Thus, the results of future research are expected to provide a more comprehensive picture of the effectiveness of midwife assistance in improving the nutritional status and growth of infants.

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