

The Relationship Between Early MP-ASI and Stunting Incidence in Children Aged 2-3 Years

Evada Safitri¹, Wiwin Reny Rahmawati², Ribkha Itha Idayanti³, Tulus Puji Hastuti
Email : evadasafitri08@gmail.com

ABSTRACT

Background: Complementary food for breast milk (MP-ASI) is additional food given after the baby is more than six months old as a complementary food to breast milk until the age of two years. MP-ASI given before the baby is six months old can cause infection in the baby's digestive tract so that the baby experiences interference with the absorption of nutrients for growth and development so that the baby experiences stunting. Stunting is a condition of chronic malnutrition that is characterized by a height or body length that is not in accordance with age or is shorter than the normal number. The stunting rate in Banyumas in 2019 reached 16,581 cases. The purpose of this study was to determine the relationship between early complementary feeding and the incidence of stunting in children aged 2–3

Methods: cross-sectional method The population in this study was 76 mothers who had children aged 2–3 years. The sample for this study was 36 people. The sampling technique used in this study was purposive sampling. The statistical test in this study uses coefficient-contingency.

Results: The results of this study indicate that there is a relationship between early complementary feeding and the incidence of stunting in children aged 2–3 years, with a p value of 0.003. Based on this study, it can be concluded that early complementary feeding has a relationship with the incidence of stunting in children aged 2–3 years in Gunung Wetan Village, Jatilawang district, Banyumas district.

Conclusion: It is hoped that parents can understand the impact of early complementary feeding as a cause of stunting in children. So that children can be fulfilled with nutrition for their growth and development

Keywords: *early MP-ASI, stunting*

¹Livio Zorg Netherlands,

^{2,3,4,5}Departement of Nursing, Poltekkes Kemenkes Semarang, Indonesia

Jl. Tirta Agung Pedalangan Banyumanik, Semarang, Jawa Tengah, Indonesia

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Background. Stunting is a chronic malnutrition problem characterized by short stature. Stunting sufferers are usually susceptible to disease, have a below-normal level of intelligence and low productivity. The high prevalence of stunting in the long term will have an impact on economic losses for Indonesia (Kementerian Kesehatan Republik Indonesia, 2018). Stunting according to the World Health Organization (WHO) Child Growth Standard is based on an index of body length compared to age (PB/U) or height for age (TB/U) with a z-score limit of less than -2SD

The prevalence of stunting in Indonesia, based on the results of the 2019 Indonesian Toddler Nutritional Status Study, reached 27.67 percent. WHO said that public health problems can be considered chronic if the

prevalence of stunting is more than 20 percent (Kementerian Kesehatan Republik Indonesia, 2018). In 2018, nearly 3 in 10 children under five were stunted or too short for their age, while 1 in 10 was underweight or too thin for their age. One-fifth of primary school-age children are overweight or obese. (Unicef, 2019).

One of the causes of stunting, according to the P2PTM of the Ministry of Health (2018), is the low nutritional intake in the first 1,000 days of life, from the fetus to the baby aged 2 years. Poor sanitation facilities, a lack of access to clean water, and a lack of environmental hygiene are also causes of stunting. Poor hygiene conditions can make the body have to fight the source of the disease extra so that it can inhibit the

absorption of nutrients. (Mulyaningsih *et al.*, 2021).

Stunting can be prevented by fulfilling the nutritional needs of pregnant women through exclusive breastfeeding for 6 months, followed by complementary feeding. Complimentary food for breast milk (MP-ASI) is food and drink given to infants aged 6–24 months as a way to fulfill nutrition that cannot be fulfilled by breastfeeding alone. Giving MP-ASI for less than 6 months can affect the baby's health so that it affects the baby's growth and development. Giving MP-ASI early, or less than 6 months, can cause digestive tract infections, which is one of the factors causing stunting because it can interfere with nutritional intake in children. (Vilcins, Sly and Jagals, 2018).

The provision of MP ASI that is not appropriate for the age and based on the existing problems researchers are interested in conducting research by taking one of the maternity nursing problems, namely the cause of stunting due to errors in giving MP ASI in the work area of the Jatilawang Health Center

Methods. This research is quantitative research using a cross-sectional method. This research was conducted in Gunung Wetan village, Jatilawang district, Banyumas district in the period April-Juni 2021. The research sample was obtained using a purposive sampling technique from 76 respondents, mothers with children aged 2-3 years, obtained 36 samples as respondents.

Data were collected by filling out a questionnaire and measuring the child's height. The independent variable in this study was the history of giving MP-ASI according to the age at which MP-ASI was given. The collected data is then carried out cleaning, editing, coding, tabulating, and data entry. Then statistical analysis was carried out with a bivariate analysis design using the coefficient-contingency statistical test to obtain the p-value

Result and Discussion.

Table 1. The frequency distribution of early complementary feeding (MP-ASI) at the Posyandu for toddlers in Gunung Wetan village in April-June 2021.

| No. | Complementary Feeding | frequency | Percentage |
|-----|-----------------------|-----------|------------|
| 1. | Given | 22 | 61.1 |

| | | | |
|--------------|-----------|-----------|--------------|
| 2. | Not given | 14 | 38.9 |
| Total | | 36 | 100.0 |

Based on table 1, it can be seen that the distribution of the frequency of giving early MP-ASI to toddlers, most toddlers are given early MP-ASI with a percentage of more than 50%. This shows that 61.1 toddlers were given complementary feeding at the age of fewer than 6 months.

Table 2. Frequency distribution of stunted and non-stunted toddlers aged 2-3 years at the Posyandu for toddlers in Gunung Wetan village in April-June 2021

| No. | Stunting / non stunting | Frequency | Percentage |
|--------------|-------------------------|-----------|--------------|
| 1. | Stunting | 19 | 52.8 |
| 2. | Non-stunted/normal | 17 | 47.2 |
| Total | | 36 | 100.0 |

Based on table 2, it can be seen that the distribution of the frequency of stunting and non-stunted toddlers are mostly toddlers with stunting with a percentage of 52.8%, there is a difference between stunting and non-stunted toddlers, namely 2 respondents.

Table 3. Hypothesis test results on complementary feeding (MP-ASI) with stunting

| No. | MP-ASI | Nutritional Status | | | | Total | p |
|---------------|-----------|--------------------|-------------|-----------|-------------|-----------|------------|
| | | Normal | | Stunting | | | |
| | | f | % | f | % | | |
| 1. | Given | 6 | 16.7 | 17 | 47.2 | 22 | 61.1 |
| 2. | Not given | 10 | 27.8 | 3 | 8.3 | 14 | 38.9 |
| Jumlah | | 16 | 41.7 | 21 | 58.3 | 36 | 100 |

Based on table 3, it can be seen that 22 mothers gave early complementary feeding, most of them experienced stunting in their toddlers, namely 16 toddlers (44.4%), and of the 14 mothers who did not provide early complementary feeding, a small proportion of toddlers experienced stunting, namely there were 3 children (8.3%) were stunted. The results of the hypothesis test showed a p-value of $0.003 < 0.05$ which means that H_0 is rejected and H_1 is accepted so that there is a relationship between early complementary feeding (MP-ASI) and stunting in children aged 2-3 years in Gunung Wetan village, sub-district Jatilawang, Banyumas Regency

There are several principles in providing food for children in the first 2 years of life, including the application of exclusive breastfeeding until the age of 6 months, the principle of giving complementary feeding at the age of 6 months, and continuing breastfeeding and complementary feeding according to age until the age of 24 months (Idhayanti, Ayuningtyas and Maryani, 2020) the principle of applying responsive feeding with psychosocial principles, the principle of applying sanitation, feeding, and the principle of feeding when a child is sick (Suryana, 2015). Complimentary food for breast milk (MP-ASI) is food and drink given to infants aged 6-24 months as a way to fulfill nutrition that cannot be fulfilled by breastfeeding alone. Giving MP-ASI less than 6 months can affect the baby's health so that it affects the baby's growth and development (Blaney, Februhartanty and Sukotjo, 2015).

The results of research conducted in Jatnagor on children aged 2-5 years showed that children who were not given exclusive breastfeeding had a 4.5 times chance of experiencing stunting compared to children who were exclusively breastfed (Subandra, Zuhairini and Djais, 2018). The age of giving complementary feeding has an effect on the incidence of stunting because children only need breast milk until the age of 6 months, but >6 months of breastfeeding alone are not enough to help optimal growth and development. Increased cognitive development and good language skills are influenced by the duration of breastfeeding (≥ 6 months) compared to children who have never been breastfed (Prihutama, Rahmadi and Hardaningsih, 2018).

Inadequate breastfeeding can cause stunting because it can be more susceptible to infectious diseases such as diarrhea and respiratory diseases (Wellina, Kartasurya and Rahfilludin, 2016). A significant relationship from research by (Prihutama, Rahmadi and Hardaningsih, 2018) shows the results that there is a relationship between early complementary feeding and the incidence of stunting with $p = 0.000$. Giving MP-ASI too early can affect the frequency of breastfeeding to decrease, if it continues it will cause the baby to be malnourished and feeding too early can cause the gastrointestinal tract of babies who are not ready to receive food to become infected, causing diarrhea.

Stunting Incident Analysis

(Idhayanti, Musringah and Masini, 2022) Stunting in children reflects the condition of failure to thrive in children under 5 years old due to chronic malnutrition so that children become too short for their age. Chronic malnutrition can occur from the baby in the womb until the age of two years (Tobing *et al.*, 2021).

According to (Par'i, Wiyono and Harjatmo, 2017) there are several things that affect the human body, causing malnutrition, namely due to lack of nutritional intake during growth, children cannot grow optimally and muscle formation is inhibited. Malnutrition in the fetus and toddler age can affect brain growth because brain cells do not develop. The brain reaches optimal growth at the age of 2-3 years, after which it declines and completes its growth in early adolescence.

Research by (Khasanah, Hadi and Paramashanti, 2016) showed that there was a significant relationship between the first time complementary feeding was given and the nutritional status of children under five with $p=0.002 < 0.05$. The results of the study were that of the 109 children who were given complimentary feeding at the wrong time, 43 children were stunted. The results of this study are in accordance with research conducted by (Agus Hendra AL Rahmad dan Ampere Miko, 2018), that giving MP-ASI before the age of 6 months can reduce the consumption of exclusive breastfeeding in infants.

The study obtained statistical results with a value of $p = 0.003$ ($p < 0.05$) which means that the incidence of stunting in children under five is due to the lack of exclusive breastfeeding obtained by infants.

Giving MP-ASI too early will affect the maturity of the gastrointestinal tract, where breast milk plays an important role in the maturation process, namely the colostrum content in breast milk which facilitates the maturation process in the intestinal wall. If the gastrointestinal tract is ready to receive foreign food other than breast milk, the absorption of nutrients needed for the growth process will run optimally (Prihutama, Rahmadi and Hardaningsih, 2018). Research by (Aridiyah, Rohmawati and Ririanty, 2015) states that infectious diseases can reduce food intake, interfere with nutrient absorption, cause direct loss of nutrients, increase metabolic needs. There is a back-and-forth

interaction between nutritional status and infectious diseases. If this condition is not treated for a long time, it can reduce food intake and interfere with the absorption of nutrients, thereby increasing the risk of stunting.

The Relationship of Early MP-ASI Giving to Stunting Incidence (Khasanah, Hadi and Paramashanti, 2016) said that children under five who are given breast milk and complementary feeding at the right time and according to their needs can reduce the risk of stunting. This is because babies at the age of 0-6 months with mothers who give breast milk can help build immunity or immunity in toddlers so they can avoid infection. The content in breast milk that forms the immune system in the gastrointestinal tract is the presence of oligosaccharides which are anti-infective and anti-allergic components. Increased levels of secretory IgA due to breast milk intake affect the gastrointestinal mucosal defense system against infection by inhibiting the absorption of antigens.

This study is by research conducted by (Fitri and Ernita, 2019), which states that there is a relationship between early breastfeeding and the incidence of stunting due to diarrhea, infections, and digestive system allergies. In line with research by (Aridiyah, Rohmawati and Ririanty, 2015) children who experience infection so that they are sick will experience a decrease in appetite, even though when they are sick, nutrition is needed to speed up the recovery process. If the infection lasts a long time it will result in stunted growth so that the child becomes short. One of the infectious diseases experienced by toddlers is diarrhea, this infection can affect nutritional status because toddlers will experience a decrease in appetite, decreased absorption of food in the intestine, increasing the catabolism process, thus taking the nutrients the body needs for growth (Angkat, 2018).

The results of this study are also following research conducted by (Agus Hendra AL Rahmad dan Ampera Miko, 2018), that giving MP-ASI before the age of 6 months can reduce the consumption of exclusive breastfeeding in infants. The study obtained statistical results with a value of $p = 0.003$ ($p < 0.05$) which means that the incidence of stunting in children under five was caused by the lack of exclusive breastfeeding obtained by infants as a result of giving complementary

feeding before the age of 6 months. This study is also in line with research conducted in Jember on the factors that influence the incidence of stunting in children under five in rural and urban areas. The results of this study indicate that the practice of giving complementary feeding to infants is one of the factors that influence the incidence of stunting in children under five in rural and urban areas (Aridiyah, Rohmawati and Ririanty, 2015).

The result univariate analysis showed that from 36 respondents 22 children were given early MP-ASI and 14 children were not given early MP-ASI. It is known that of the 22 children who were given early complementary feeding, 17 were stunted and 5 were normal. Furthermore, of the 14 who were not given early complementary feeding, 3 children were stunted and 11 children were normal.

Hypothesis test show a p-value of 0.000 which means that it can be concluded that there is a relationship between early complementary feeding and the incidence of stunting in Gunung Wetan village, Jatilawang district, Banyumas district.

Conclusion and Suggestions.

Conclusion there is a relationship between giving early MP-ASI and the incidence of stunting. Providing early MP-ASI to children can cause a decrease in the baby's desire to breastfeed because the baby feels full from the food given, or feels unfamiliar with the mother's breast milk. This decrease in breast milk consumption can lead to the formation of immunity

Suggestions It is recommended that parents of babies aged 0-6 months postpone giving MP-ASI until the baby is 6 months old. Health workers are expected to provide health education regarding the impact of giving MP-ASI from an early age which can cause children to become stunted. It is hoped that future research will be able to analyze more factors that cause stunting in children aged 2-3 years, apart from early complementary feeding.

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