

History of Breastfeeding, Formula and Eating Patterns in Stunted Toddlers: The Case with Picky Eaters

Arie Nugroho^a, Nutrition Department, Poltekkes Kemenkes Tanjung Karang,
Email: arienugroho@poltekkes-tjk.ac.id

Children aged 1-3 years are in a period of rapid growth after infancy, with a balanced nutritional intake necessary to achieve optimal growth and development. Nutritional problems will occur if the nutrient intake is not being met. One of the issues that exist in child nutrition in Indonesia results in shortness of stature (stunting). One of the behaviours that can occur in the development of children's eating behaviour is picky eating or picking at food. One of the factors that affect children's eating behaviour in adulthood is feeding patterns early in life. Granting exclusive breast milk up to 6 months is a protective factor against the child becoming a picky eater. Complementary feeding MP-ASI (formula), which is given is not appropriate; in this case, if it is too early or too late it also influenced the incidence of picky eaters. This research was analytic research with a cross-sectional study design. The area of research is the nutrition research community. The number of subjects consisted of 85 toddlers. Variables examined included a history of feeding breast milk (ASI), breast milk substitutes (MP-ASI), eating patterns, and stunting status. Data were analyzed using the Chi-Square Test. There is a relationship between a history of non-exclusive ASI, early MP-ASI, and eating patterns with the incidence of picky eaters with a p-value of respectively is 0.001; 0.002 and 0.001 ($P < 0.05$). There was no significant correlation between the incidence of stunting in picky eaters in toddlers with $p = 0.741$ ($p > 0.05$). Dinas Kesehatan Bandar Lampung could appeal to the health centre (Puskesmas) through circulars mandating an active role in the socialisation of the importance of exclusive ASI and MP-ASI on time to prevent the occurrence of picky eating in toddlers. Nutritionists can adopt the Indonesian Nutritionists Association (PERSAGI) or the Indonesian Breastfeeding Mothers Association (AIMI) information in the socialisation and mentoring by ASI counsellors to all pregnant and lactating women in Puskesmas Kedaton in order to prevent the occurrence of picky eating in toddlers.

Keywords: *Picky Eater, Stunting,, Toddlers.*

Introduction

Balanced nutrition is needed by children to achieve optimal growth and development (Wijaya et al., 2017). Nutrient intake supports the development of cognitive, motor, and emotional development with age. Nutritional problems will occur if the nutrient intake is not being met. Common nutrition problems caused by inadequate nutrition in children in Indonesia are less severe problems (underweight), shortness (stunting), and extreme thinness (wasting) (Kemenkes RI, 2018).

The phenomenon of difficult eating in children is often a problem for older people (Mascola et al., 2010). Such behaviour defined as picky eating is the unwillingness of the child to try new foods, does not like certain foods, and has strong opinions about food that lead to consumption of small amounts and refusal to consume a variety of foods – especially food sources of micronutrients such as fruit, vegetables, and meat that will directly relate to the child's growth (Uwaezoke et al., 2016, Wijaya et al., 2017).

Feeding patterns in early life are believed to correlate with children's eating behaviour in adulthood (Anggraini, 2014). The study states that exclusive ASI (breastfeeding) and appropriate MP-ASI are a child's risk protection factors to prevent them becoming picky eaters by 2.5 times (Shim et al., 2011). The introduction of a variety of food and the introduction of the right hours for eating needs to be done early (Nugroho and Sofyan, 2018).

The prevalence rate of picky eaters in Indonesia amounted to around 20% to 44.5%, in which children who are picky eaters generally encounter problems of a malnourished nutritional status, i.e., mild to moderate (Priyanti, 2013). Picky eaters have a trend experience of negative energy balance, especially the fulfillment of micronutrients, which derive from vegetables and fruits. Low intake of energy, fibre, vitamins, and minerals cause increased risk of infectious disease and inhibits the growth (Ekstein et al., 2010; Taylor et al. 2015; Antoniou et al., 2016).

Kids who are often picky eaters refuse to consume a variety of foods, especially food sources of micronutrients such as fruits, vegetables, and meat (Brawley & Jennifer, 2014). Furthermore, picky eating behaviours can lead to problems with eating disorders in adolescence and early adulthood. Several previous studies have revealed that picky eaters are directly influenced by the behaviour and habits of parents based on cultural factors. Parents and older siblings had the most influence on behaviour related to the choice of food. This study examined other factors before the child is exposed to by eating a family that feeding patterns early in life that exclusive ASI and MP-ASI are poised to have an impact on the behaviour of a picky eater in toddlers and looking for the relationship between picky eater toddlers with nutritional status in this case stunting.

Research in Lampung province on picky eating behaviour is still very limited. The highest

prevalence of stunting in Bandar Lampung is in the sub-district Kedaton.

Based on the above background, the problem can be formulated as follows: Does a history of feeding ASI, MP-ASI, eating patterns, and stunting status relate to the incidence of picky eating in toddlers?

The purpose of this study was to determine the history of feeding ASI, MP-ASI, eating patterns, and stunting status with the incidence of picky eater toddlers.

Methods

This study is analytic research with a cross-sectional study design. Cross-regional measurements take independent and dependent variables at the same time to identify factors – factors that affect the incidence of picky eaters and picky eaters' relationship with stunting status. The cause examined included a history of feeding ASI, MP-ASI, eating patterns, and stunting status.

The processing of research data that has been collected is done using a computer. Analysis of data uses a computer program. The analysis in this study is using *chi-square*.

Results

Characteristics of Respondents

Respondents were mothers of subjects aged 1-3 years who lived in Kedaton Puskesmas working area; the results showed half of the respondents aged 30-40 years old, about 52.9%. Maternal age minimum 17 years, a maximum 49-years, average of 32.28 years; of elementary +6.11, with general education in high school (SMA) that is as much as 49.4%, while the majority of respondents are housewives (78.1%). Having a minimum income of Rp. 800.000/month and had the most revenue of Rp. 8.000.000/month with an average monthly income of Rp. 2.228.000. More than half of respondents (56.5%) in Puskesmas Kedaton income/income is below the minimum wage. The characteristics of respondents in this study can be seen in Table 1.

Table 1. Characteristics of Respondents

characteristics	amount Rural	Percentage (%)
Age (years)		
<20	1	1.2
20-30	34	40
31-40	45	52.9
> 40	5	5.9
Education		
Not completed in primary school	1	1.2
elementary school	8	9.4
SMP	21	27.7
High School	42	49.2
D3	6	7.1
S1	7	8.2
Mothers Work		
labor	1	1.2
Merchant / entrepreneur	8	9.4
employee	6	7.1
PNS / TNI / Police	2	2.4
IRT	68	80

The Univariate Analysis

The result showed that: there is still a lot of research subjects that are not exclusively ASI in the amount of 44.7% and receive early MP-ASI 48.2%. The subject also has a poor diet that is equal to 47.1%. Most subjects experienced a 27.1% incidence of stunting are experiencing behavioural problems and picky eating by 47.1%. The results of univariate tests on variables in this study are presented in Table 2.

Table 2. Univariate Test Results of research variables

characteristics	number of Toddlers	Percentage (%)
Exclusive ASI		
No	38	44.7
Yes	47	55.3
Early MP-ASI		
Yes	41	48.2
No	44	51.8
Eating Patterns		
Poor Pattern	40	47.1
Good Pattern	45	52.9
Status of stunting		
stunting	23	27.1
not stunting	62	72.9
<i>picky eaters</i>		
<i>picky eaters</i>	40	47.1
Non-picky eaters	45	52.9

Bivariate Analysis

1. Not Exclusive ASI and early MP-ASI

Generally, there is still a subject that did not receive exclusive ASI. Subjects with more picky eaters who are not breastfed exclusively in the amount of 65% as compared to subjects with non-picky eaters 26.7%. Additionally, toddlers who are more picky eaters gets MP-ASI prematurely, namely 71.9 percent compared with the subject of 31.1% non-picky eaters. Distribution cross-correlation of exclusive ASI in toddlers who are picky eaters and non-picky eaters can be seen in Table 3.

Table 3. Relationship history of feeding ASI and MP-ASI in toddlers are picky eaters and non-picky eaters

variables	toddler <i>picky eaters</i>		<i>non-picky eaters</i>		p-value
	n	%	n	%	
Not exclusive breastfeeding	26	65	12	26.7	0.001 *
Exclusively breastfed amount	14	35	33	73.3	
Giving breastfeeding	40	100.0	45	100.0	
Early breastfeeding MP-Appropriate	27	71.9	14	31.1	0.002 *
complementary Feeding amount	13	28.1	31	68.9	
	40	100.0	45	100.0	

* Chi-Square

Results of the analysis of statistical tests between exclusive ASI and early MP-ASI with toddlers are picky eaters incident p-value obtained successively is 0.001 and 0.002. It can be concluded there is a relationship between not exclusive ASI and early MP-ASI with toddlers who are picky eaters in Puskesmas Kedaton.

2. Eating patterns

In general, the subjects were many who got a proper diet. Subjects with a lot more picky eaters have a poor diet that is equal to 90% compared to subjects with non-picky eaters, 8.9%. Cross distribution relationship eating patterns in toddlers who are picky eaters, and non-picky eaters can be seen in Table 4.

Table 4. Relationship picky eater toddler's eating patterns and non-picky eaters

variables	toddler picky eaters		non-picky eaters		p-Value
	n	%	n	%	
Poor eating patterns	36	90	4	8.9	0.001
Good eating patterns	4	10	41	91.1	
amount	40	100.0	45	100.0	

* Chi-Square

Results of statistical test analysis between the incidence of *picky eater* toddler diets obtained p-value 0.001 It can be concluded there is a correlation with the incidence of the toddler diet picky eaters in Puskesmas Kedaton.

3. Status of stunting

In general, the subject having nutritional status based on anthropometric indices TB/U has a good nutritional status, namely 72.9%. Of the 40 picky eater subjects, 12 people (30%) had not much different stunting with stunting the subject of non-picky eaters that is 11 people (24.4%). Cross distribution of relationship stunting status in toddlers who are picky eaters, and non-picky eaters can be seen in Table 5.

Table 5. Relationship status stunting with toddlers picky eaters

Variables	toddler picky eaters		non-picky eaters		p-Value
	n	%	n	%	
Stunting	12	30	11	24.4	0.741
Non-Stunting	28	70	34	75.6	
Amount	40	100.0	45	100.0	

Results of statistical test analysis between stunting status and the picky eater incidence obtained p-value 0.741. It can be concluded there is no relationship with the incidence of stunting status of picky eating in toddlers in Puskesmas Kedaton.

DISCUSSION

1. Not Exclusive ASI and MP-ASI with a picky eater

There is a significant association between a history of non-exclusive ASI and early MP-ASI with picky eaters in toddlers with p values respectively: 0.001 and 0.002 ($p < 0.05$); it means that children who are not exclusively ASI and receive early MP-ASI before six months tend to be picky eaters.

The result showed that 65% and 71.9% of respondents who are picky eaters in a row have not received ASI exclusively and got early MP-ASI. It supports several studies that claim that feeding patterns in early life are very influential on children's eating behaviour in later life stages. Breastfeeding (ASI) exclusively until six months is believed to reduce the likelihood of children becoming picky eaters where there is a positive relationship between when ASI was less than six months (non-exclusive) with picky eaters in girls aged seven years (Galloway et al. 2008). Complementary feeding (MP-ASI) should be given not too early, nor too late. The provision of give MP-ASI before six months will increase the risk of the child becoming a picky eater by 2.5 times: a study done in the United States even finds an interesting fact that exclusive ASI significantly lowers the risk of rejection of food in children up to 81% and food neophobia up to 75%. (Shim et al., 2011).

ASI is composed of flavours that reflect the food consumed by the mother. Variations in the diet in nursing mothers producing more food flavour exposure in children will help explain why babies who were exclusive ASI are not too picky and more willing to try new foods. Children who are breastfed exclusively for six months had a lower risk of experiencing picky eating (Lam, 2015).

Other studies have shown that the influence of the environment on the feeding reception of the child can be found easily. For example, evidence suggests that children who are given ASI are familiar with the taste of the food eaten by the mother and are reflected as changes in the taste of their milk (Dovey et al., 2008). Exposure to taste begins from the introduction and continues with the experience of feeding in infancy. It is shown that babies who are exclusively breastfed have more varied dietary exposure than babies who are given formula milk (Yustianingrum & Adriani, 2017). Variations in taste of mother's milk helps children to receive early meals later in the day. Acceptance of children to new foods takes repetition of at least ten times. Thus the preference for salty and sweet foods is also a biological effect that is influenced by repeated exposure. The feeding behaviour of children is influenced by biological factors, the relationship between parents and children, family dynamics, and the character of the child (Ong et al. 2014).

A picky eater is a relatively common behavioural problem that occurs (Astuti & Ayuningtyas, 2018). According to Lam, picky eating is not related to eating disorders and also does not have a significant impact on growth. An experimental study showed that babies born to mothers who drank carrot juice during the third trimester of pregnancy, preferred carrot cereals than babies born to mothers who did not drink carrot juice (Lam, 2015).

A growing child eating genetically explains the trends and experiences such as repeated exposure, the atmosphere of feeding, as well as a psychological and social environment consistently determining factors of the meal reception. The first year of life is a critical period for developing a pattern of food acceptance by initial exposure through breast milk, natural feeding and complementary feeding (MP-ASI) in infancy to toddlers (Xue et al., 2015).

Research conducted by Lam proves that the repetition of exposure to the taste of food showed an increase in food acceptance. Instead, the emphasis on the child to eat certain foods can result that they do not like the food. Researchers found that many caregivers do not realise that a baby or child is in need of more than 8-15 exposures to certain foods before they can receive the food. Most children are classified as 'picky eaters' who have little interest in eating fruits and vegetables (Lam, 2015).

The emergence of a picky eating behaviour may be caused by various factors such as the urge to eat, personality factors, the practice of eating, their parents' parenting, including parental controls, and social influence. Some of the specific factors that contribute are: the mother does not give exclusive breastfeeding, complementary feeding (MP-ASI) before the baby is six

months old, and delay in the introduction of complementary food. Picky eating behaviour can occur in girls or boys. Good eating habits during pregnancy were associated with lower difficulty of eating in children (Taylor et al. 2015).

UNICEF states that exclusive breastfeeding to the child during the first six months can improve the achievement of growth, development, and optimal health. Then it can be continued by providing complementary foods until the age of 2 years or more. Breast milk (ASI) is a natural source that has a high impact on the health, growth, and development of children (UNICEF, 2013).

Breast milk contains sufficient quantities of all the nutrients needed by infants. The energy content of breast milk ranges from 65 mg / 100ml of breast milk, while the protein content in the milk is 0.9 mg / 100 ml milk. The protein content in the milk is lower than the protein content of infant formula (1.6 mg / 100 ml). Still, the quality is very high, and the milk protein contains essential amino acids that are needed by the baby's gut. The specialty of the milk protein is whey protein, and the casein ratio is balanced (60:40), compared with cow's milk (20:80). It is advantageous for infants due to the deposition of casein whey protein is more subtle than that of whey protein and can more easily digested. If the baby is hungry or thirsty, she will breastfeed more often or longer, and it will stimulate the hormone prolactin to produce milk more so that the optimal needs of the baby for growth are fulfilled (Nugroho & Sofyan, 2018).

Formula milk is a kind of food pre-lacteals most widely encountered in this study (83%). Families that provide good parenting, especially nutrient requirements, will affect the nutritional status of children. The provision of appropriate complementary feeding in children aged 12-24 months will reduce the risk of malnutrition because, at that age, children's nutritional needs cannot be fulfilled only from ASI (Anugraheni & Kartasurya, 2012). Ideally, a variety of solid foods should be introduced in the age range of 6-9 months because the child will be choosier when food is presented at the age of more than nine months (Coulthard et al., 2009).

2. Eating Patterns with Picky Eaters

The results of the analysis between the diet and the incidence of toddlers who are picky eaters obtained p-value 0.001. It can be concluded that there is a correlation with the incident of diet with toddlers who are picky eaters: there is a 90% chance toddler picky eaters have less good diet. -General characteristics of picky eater children are to eat a limited amount of food, refuse some foods (mostly fruits and vegetables), do not want to try new foods, choose only a few types of food, preferring to drink than to eat, and have a strong food preference. Research in Singapore in children aged 1-10 years shows children prefer sweet foods and fatty foods to healthy foods and prefer snacking to eating healthily (Ong et al. 2014).

A person's diet or eating habits can be described by the type and frequency of consumption of various types of food consumed by the subject every day for the last month. A diet cannot determine the nutritional status of a person but can be used as the initial evidence of a person or community nutrition problems (Supariasa 2012). The type and frequency of food consumption are analysed by categories of food most frequently consumed by the respondent. According to Tharner et al. (2014), FFQ proved to be suitable for identifying the relative intake and conclude a possible interest regarding high or low intake of certain food groups. Therefore, it is crucial to know the food pattern that can be seen based on the frequency of food consumption per week.

Children who are classified as recorded picky eaters eat foods in limited quantities, require special preparation of the food to be eaten, have poor adoption of new foods, often refuse food, and express a preference to certain foods more often. The result of Tharner et al. (2014) research states that picky eaters eat more cookies, snacks, and fast food than non-picky eaters.

Based on research Xue et al. (2015), consumption of carbohydrates, vegetables, and fish groups rate picky eaters as lower than non-picky eaters. But there is no relationship between the consumption of fruits, meat, eggs, and nuts significantly between groups of non-picky eaters and picky eaters. Meanwhile, according to Horst et al. (2016), the picky eaters' vegetable protein intake is lower than non-picky eaters. The average food consumption of picky eaters has little difference of non-picky eaters. The input of some food categories that was lower in picky eaters than non-picky eaters may have a negative impact on the growth of children. Excess consumption of beverages like milk will decrease the child's appetite, replace caloric and nutrient density in food, and in some children would lead to failure to thrive (Leung et al. 2012). According to Howard et al. (2012), parents should encourage healthy eating habits gradually to support a child's diet with a variety of effective ways to introduce new foods that were previously unpopular. However, they and their children do not like it.

Acceptance of new foods by children takes repetition at least ten times so that the preference for salty and sweet foods is also a biological effect that is influenced by repeated exposure.

3. Picky eater with stunting status

The results showed that there was no significant relationship between a picky eater and nutritional status based on indicators of TB/ U in toddlers with $p = 0.741$ ($p > 0.05$). It shows that there is no significant relationship between a picky eater and nutritional status based on indicators of TB/ U (stunting).

A picky eater is at risk of the child becoming malnourished, for picky eaters tend to have a lower intake of energy, protein, carbohydrates, vitamins, and minerals than non-picky eaters (Xue Y et al., 2015). Picky eaters consume less food, less varied and usually low in vegetables,



fruits, foods rich in protein and fibre because of rejection of food. The food likes and dislikes have an essential role in the selection of dining, where picky eaters can indicate a strong preference for certain foods (Northstone and Emmett., 2013).

A picky eater can be a normal developmental phase. However, results of studies say three-quarters of picky eater children began refusing food in the first year of life until the age of two years, then a peak in the next 2-6 years, with the corresponding growth of the individual, so that if continued would be followed by underweight. Child picky eaters tend to have less nutritional status. Picky eater children are more at risk of having less weight; weight gain is inadequate and there are micronutrient deficiencies (Antoniou et al., 2016).

Some studies claim that picky eater behaviour does not affect health or weight. But two studies found that children who have problems with eating behaviour had a lower body weight than children who do not have a problem with eating behaviour. Decreased intake of energy, carbohydrate, protein, and fat has been proven in children who are picky eaters and have difficulty eating, but most children with behavioural problems related to eating achieve regular growth. Further studies on the effects of eating behaviour problems on the growth and development of children are by Goh & Jacob, 2012 and Mambang Sari et al., 2018.

Research by Webber et al. (2009) showed that children who have a low response and lower intake of food have a higher rejection response. According to Taylor et al. (2015), several studies have shown that children who are picky eaters have more energy intake, by eating foods that have a lot more energy density such as snacks and sweets. However, consumption of food and nutrient composition of the food tends to be less varied (lowered energy intake), with low intake of fruits and vegetables, low intake of vitamins and minerals, low intake of fibre and cereals. This can lead to underweight and delay in growth or can also lead to overweight or can develop into an eating disorder.

Stunting caused by malnutrition in the past showed birth weight and birth length having a greater influence than the current intake. Therefore, the program 1000 The first day of life is the most effective program to reduce the prevalence of stunting in Indonesia (Nugroho & Sofyan, 2018).

Feeding problems in children can result in long-term growth and development issues. Picky eater children will get limited nutrients and lack of variety from food so are potentially malnourished; risk is greatest in those less than three years of age (Ekstein et al., 2010). Undernourishment would interfere with the development of intelligence, learning, proneness to infection, increase severity of disease, to increasing mortality. According to Xue et al. (2015), a picky eater has a negative correlation with the growth of children so that children classified as picky eaters tend to have slower growth. There are more picky eaters associated with nutritional status at this time. Therefore, the use of index TB/U deemed less effective.



Conclusion

Research results showed that there is a relationship between exclusive breastfeeding (ASI), complementary feeding (MP-ASI), eating patterns with the incidence of picky eaters. While picky eater events are not associated with stunting status of toddlers in the Kedaton Puskesmas working area. Dinas Kesehatan Bandar Lampung could appeal to the Puskesmas (health centres) through circulars mandating an active role for the socialisation of the importance and nutritional power of exclusive breastfeeding (ASI) and MP-ASI on time to prevent picky eater events in toddlers. Besides, nutritionists can partner with PERSAGI or AIMI in the context of socialisation and assistance by ASI counsellors for all pregnant and breastfeeding women in the working area of Puskesmas Kedaton in order to prevent the occurrence of picky eater syndrome in toddlers.

REFERENCES

- Anggraini, I. R. (2014). Perilaku Makan Orang Tua dengan Kejadian Picky Eater Pada Anak Usia Toddler. *Jurnal Keperawatan*, 154-162.
- Anugraheni, H. S., Kartasurya, M. I. (2012). Faktor risiko kejadian stunting pada anak usia 12-36 bulan di Kecamatan Pati, Kabupaten Pati. *Eprints Undip*. 2012
- Antoniou, E. E., Roefs, A., Kremers, S. P. J., Jansen, A., Gubbels, J. S., Sleddens, E. F. C., *et al.* (2016). Picky eating and child weight status development: A longitudinal study. *J Hum Nutr Diet*, 29(3), 298–307. <https://doi.org/10.1111/jhn.12322>
- Astuti, E. P., & Ayuningtyas, I. F. (2018). PERILAKU PICKY EATER DAN STATUS GIZI PADA ANAK TODDLER. *Midwifery Journal: Jurnal Kebidanan UM. Mataram*. <https://doi.org/10.31764/mj.v3i1.155>
- Brawley, Larra and Henk, Jennifer. (2014). Encouraging Healthy Eating Behaviours in Toddlers. *Dimensions of Early Childhood*, Vol 42, No 2.
- Coulthard, H., Harris, G., Emmett, P. (2009). Delayed introduction of lumpy foods to children during the complementary feeding period affects child's food acceptance and feeding at 7 years of age. *Matern Child Nutr*, 5(1), 75-85. <https://doi.org/10.1111/j.1740-8709.2008.00153.x>
- Dovey, T. M., Staples, P. A., Gibson, E. L., Halford, J. C. G. (2008). Food neophobia and picky/fussy eating in children: A review. *Appetite*, 50(2008), 181-193. [doi:10.1016/j.appet.2007.09.009](https://doi.org/10.1016/j.appet.2007.09.009)
- Ekstein, S., Laniado, D., Glick, B. (2010). Does picky eating affect weight-for-length measurements in young children?. *Clin Pediatr (Phila)* 2010, 49(3), 217-20. <https://doi.org/10.1177/0009922809337331>
- Galloway, Florito, L., Lee, Y., Birch, L. L. (2008). Parental pressure, dietary patterns, and weight status among girls who are "Picky Eaters". *J Am Diet Association*, 105(4), 541-548. <https://doi.org/10.1016/j.jada.2005.01.029>
- Goh, D. Y. T., Jacob, A. (2012). Perception of picky eating among children in Singapore and its impact on caregivers: a questionnaire survey. *Asia Pasific Family Medicine*, 11(5), 1-8. <https://doi.org/10.1186/1447-056X-11-5>
- Horst, K. V. D., Deming, D. M., Lesniasukas, R., Carr, B. T., Reidy, K. C. (2016). Picky eating: Associations with child eating characteristics and food intake. *Appetite*, 103(2016): 286-293. <https://doi.org/10.1016/j.appet.2016.04.027>
- Howard, A. J., Mallan, K. M., Byrne, R., Magarey, A., Daniels, L. (2012). Toddler's food preferences: the impact of novel food exposures, maternal preferences and food neophobia. *Appetite*. 59(3), 818-825. <https://doi.org/10.1016/j.appet.2012.08.022>



- Kemenkes RI. (2018). *Buku saku pemantauan status gizi tahun 2017*. Jakarta: Direktorat Gizi Masyarakat.
- Lam, J. (2015). Picky Eating in Children. *Frontiers in Pediatrics*, 3, 41. <https://doi.org/10.3389/fped.2015.00041>
- Leung, A. K. C., Marchand, V., Sauve, R. S. (2012). The “Picky eater”: The toddler or preschooler who does not eat. *Paediatric Child Health*, 17(8), 455-457. <https://doi.org/10.1093/pch/17.8.455>
- Mambang Sari, C. W., Solihah, L. S., & Fatimah, S. (2018). Relationship Between Mother Feeding Practices And Eating Behaviour In Children Of 3-5 Years Old. *Journal of Maternity Care and Reproductive Health*. <https://doi.org/10.36780/jmcrh.v1i1.15>
- Mascola, A. J., Bryson, S. W., Agras, W. S. (2010). Picky eating during childhood: A longitudinal study to age 11 years. *Eat Behaviour*, 11(4), 253-357. <https://doi.org/10.1016/j.eatbeh.2010.05.006>
- Nugroho, Arie, & Sofyan, Musabiq. (2018). *Gizi 1000 HPK (Hari Pertama Kehidupan)*. Lampung: CV Anugrah Utama Raharja.
- Northstone, K., Emmett, P. (2013). The associations between feeding difficulties and behaviours and dietary patterns at 2 years of age: The ALSPAC cohort. *Matern Child Nutr*, 2013, 9(4), 533–42. <https://doi.org/10.1111/j.1740-8709.2012.00399.x>
- Ong, C., Phuah, K. Y., Salazar, E., How, H. C. (2014). Managing the picky eater dilemma. *Singapore Med J*, 55(4), 184-190. <https://doi.org/10.11622/smedj.2014049>
- Priyanti, S. (2013). Pengaruh perilaku makan orang tua terhadap kejadian picky eater (pilih-pilih makanan) pada anak toddler di Desa Karang Jeruk Kecamatan Jatirejo Mojokerto. *Medica Majapahit*, 5(2), 43-55. <https://doi.org/10.29241/jmk.v5i2.148>
- Taylor, C. M., Wernimont, S.M., Northstone, K., Emmett, P. M. (2015). Picky/fussy eating in children: Review of definitions, assessment, prevalence, and dietary intakes. *Appetite*. 95(2015), 349-359. <https://doi.org/10.1016/j.appet.2015.07.026>
- Tharner, A., Jansen, P. W., Jong, J. C. K., Moll, H. A., Ende, J. V. D., Jaddoe, V. W. V., *et al.* (2014). Toward an operative diagnosis of fussy /picky eating: a latent profile approach in a population-based cohort. *Int J Behav Nutr Phys Act* 2014, 11(14), 11-14. <https://doi.org/10.1186/1479-5868-11-14>
- Shim, J. E., Kim, J., Mathai, R. A. (2011). Associations of infant feeding practices and picky eating behaviours of preschool children. *J Am Diet Assoc* 2011, 111(9), 1363-8. <https://doi.org/10.1016/j.jada.2011.06.410>
- UNICEF. (2013). *Report Improving Child Nutrition: The Achievable imperative for global progress*.



- Uwaezoke, S. N., Iloh, K. K., Nwolisa, C. E., Ndu, I. K., Eneh, C. I. (2016). Picky eating in preschool-aged children: prevalence and mothers' perceptions in South-East Nigeria. *Current Pediatrics*, 20(1), 156-163.
- Webber, I., Hill, J., Saxton, J., Jaarsveld, C. H. M. V., Wardle, J. (2009). Eating behaviour and weight in children. *International Journal of Obesity*, 33(1), 21-28. doi:10.1038/ijo.2008.219.
- Wijaya, Sofyan M., Isti, D., Nugroho, A., (2017). *Gizi anak (usia sekolah dan pra sekolah)*. Lampung: CV Anugrah Utama Raharja.
- Xue, Y., Lee, E., Ning, K., Zheng, Y., Ma, D., Gao, H., Yang, B., Bai, Y., Wang, P., Zhang, Y. (2015). Prevalence of picky eating behaviour in Chinese school-age children associations with anthropometric parameters and intelligence quotient. *A cross-sectional study. Appetite*, 91(1), 248-255. <https://doi.org/10.1016/j.appet.2015.04.065>
- Yustianingrum, L. N., & Adriani, M. (2017). Perbedaan Status Gizi dan Penyakit Infeksi pada Anak Baduta yang Diberi ASI Eksklusif dan Non ASI Eksklusif. *Amerta Nutrition*. <https://doi.org/10.20473/amnt.v1i4.2017.415-423>