



Correlation Between Knowledge of Health Information About Picky Eating, Supplementary Feeding, Management Ability of Appetite Herbs

Muflih Muflih^{1*}, Rahayu Widaryanti², Fika Lilik Indrawati³, Natasya Gabryella Trisagita⁴

^{1,4} Bachelor of Nursing Study Program, Faculty of Health Sciences, Universitas Respati Yogyakarta, Indonesia

^{2,3} Undergraduate Midwifery Study Program, Faculty of Health Sciences, Universitas Respati Yogyakarta, Indonesia

ARTICLE INFO

Article history:

Received June 30, 2023

Revised July 18, 2023

Published August 01, 2023

Keywords:

Appetite;
Herbs;
Information;
Knowledge;
Picky eating;

ABSTRACT

Picky eaters continue to pose challenges in providing additional food, hindering efforts to address child stunting. Thus, understanding the causes of picky eating in relation to maternal knowledge of health information about picky eaters, supplementary feeding management, and appetite herbs is crucial. This study aims to explore the correlation between knowledge of health information about picky eater, supplementary feeding, and the ability to manage food and herbal appetite in mothers of stunted children in Srimartani Village, Piyungan, Yogyakarta. Employing a cross-sectional survey design, the study involved 27 mothers (aged 23-42) of stunted children in October 2022. A research instrument comprising 21 questions was developed based on the concept of picky eating, adapted to the research context. Data analysis employed Kendall's tau b statistical test to assess correlations. Stunting data were obtained from documented diagnoses at the local community health center, including malnourished toddlers and undernourished children. Findings revealed no correlation between knowledge of health information about picky eater and supplementary feeding, as well as between supplementary feeding and the ability to manage supplementary feeding and appetite herbs. However, a significant correlation was observed knowledge of health information about between picky eater and the ability to manage additional food and appetite herbs. In conclusion, higher picky eater knowledge was associated with better ability to manage additional food and appetite herbs, while knowledge of supplementary feeding did not show such a correlation. Further research with a more representative sample is recommended to provide a comprehensive understanding of the picky eater phenomenon

This work is licensed under a [Creative Commons Attribution-Share Alike 4.0](https://creativecommons.org/licenses/by-sa/4.0/)



Corresponding Author:

Muflih Muflih, Department of Nursing, Faculty of Health Sciences, Universitas Respati Yogyakarta, Indonesia

Email: muflih@respati.ac.id

1. INTRODUCTION

Picky eating is a prevalent phenomenon in children, contributing to various nutritional health issues. It is characterized by a protracted process of food intake, selective food preferences, a preference for milk, refusal

to eat, and mouth closure[1]. Typically, picky eating manifests between the ages of 3 and 6 years[2], impacting approximately 20% of preschool children in Indonesia [3], [4].

Children with picky eating patterns often face challenges in obtaining adequate nutrition [5], particularly from essential sources such as fruits, vegetables, and meat, which provide vital nutrients like iron and zinc [6]. Failure to address picky eating can lead to an increased risk of malnutrition and stunting, adversely affecting a child's growth and overall development [4], [7], [8].

Various factors contribute to the development of picky eating, including parental knowledge of health information related to picky eating, supplementary feeding, and the ability to manage additional foods and herbs that enhance appetite. Although these factors are widely believed to influence picky eating behaviors in toddlers, comprehensive research findings on the subject remain limited. Existing studies have explored factors such as parental knowledge, dietary patterns, and parenting practices [9].

In a research conducted in Poland, it was observed that mothers who possessed greater knowledge regarding picky eating tended to employ positive reinforcement strategies to encourage their children to consume a broader range of foods [10]. Similarly, a study conducted in India revealed that mothers with enhanced knowledge of supplementary feeding were more inclined to provide their children with diverse and nutritious food options [11]. Furthermore, a study carried out in Nigeria demonstrated that mothers who possessed higher knowledge concerning food and herbal appetite management were more likely to implement appropriate feeding practices to regulate their children's appetite [12].

The existing research highlights the positive associations between mothers' knowledge of picky eating, supplementary feeding, and food and herbal appetite management practices. However, there is a gap in the literature regarding the comprehensive examination of the interrelationships between these factors and their collective impact on children's dietary behaviors and nutritional outcomes. Specifically, there is limited research exploring how mothers' combined knowledge of picky eating, supplementary feeding, and food and herbal appetite management influences their feeding practices and the subsequent effects on their children's food preferences, nutrient intake, and growth patterns. Understanding these complex dynamics is crucial for developing targeted interventions and strategies to improve children's dietary habits, address nutritional deficiencies, and mitigate the risk of stunting.

This study aims to bridge the existing research gap by examining the interrelationships between knowledge of health information related to picky eating, knowledge of health information related to supplementary feeding, and the ability to manage food and appetite herbs. By exploring these connections, the study aims to shed light on the complex dynamics between parental knowledge, feeding practices, and the management of picky eating behaviors.

The findings of this study have significant implications for both research and practice. Understanding the correlations between parental knowledge, supplementary feeding practices, and the ability to manage food and appetite herbs can inform the development of targeted interventions and support program [13]. By equipping parents with accurate and comprehensive information, interventions can effectively address picky eating issues, promote healthy feeding practices, and ultimately contribute to the improvement of children's nutritional status and overall well-being.

Disseminating the results of this study is crucial for researchers as it adds to the body of knowledge on picky eating, providing valuable insights into the specific correlations between parental knowledge and feeding practices. Practitioners working in the field of child nutrition can utilize these findings to inform their approaches, design evidence-based interventions, and provide guidance to parents facing challenges related to picky eating. Therefore, further investigation is needed to bridge this research gap and provide a comprehensive understanding of the interplay between maternal knowledge, feeding practices, and child health outcomes in the context of picky eating, supplementary feeding, and appetite management.

2. METHODS

This study utilized a cross-sectional survey research design to investigate the research objectives. The study sample consisted of 27 mothers who had children under the age of five and were diagnosed with stunting. These mothers were selected from an initial pool of 42 children who were identified as malnourished or undernourished. To be included in the sample, the children had to be between the ages of 1 and 6 years and exhibit ongoing malnutrition or undernourishment. The mothers were required to fall within the age range of 21 to 45 years, possess literacy skills, and express willingness to participate in the study. The diagnosis of malnutrition or undernourishment among the children was based on data obtained from the local community health center, which served as a reliable source of information (see Figure 1).

The research was conducted in October 2022, specifically in Srimartani Village, Piyungan, Yogyakarta. The study focused on several variables, namely picky eater knowledge, supplementary feeding knowledge, and food management ability along with appetite herbs. These variables were measured using a set of 21 questions. The measurement instrument was developed by adapting relevant concepts or theories to suit the specific characteristics and needs of the research sample. It comprised 11 question items related to picky eater knowledge, 5 question items related to supplementary feeding knowledge, and an additional 5 question items concerning food management ability and appetite herbs.

The data collected during the study were in numerical form, allowing for quantitative analysis. Correlation analysis was performed using the Kendall's tau_b statistical test to explore potential relationships between the variables. This statistical test is well-suited for analyzing nonparametric data and assessing the strength and direction of associations between variables. It provided valuable insights into the interplay between picky eater knowledge, supplementary feeding knowledge, and food management ability along with appetite herbs.

In terms of ethical considerations, the research adhered to rigorous standards. The study obtained ethical approval (number 148.3/FIKES/PI/X/2022) from the ethics committee of the Faculty of Health Sciences at Universitas Respati Yogyakarta. This approval ensured that the research was conducted in an ethically responsible manner, prioritizing the welfare and rights of the participants. Adhering to ethical guidelines is crucial in safeguarding the well-being and privacy of the individuals involved in the study.

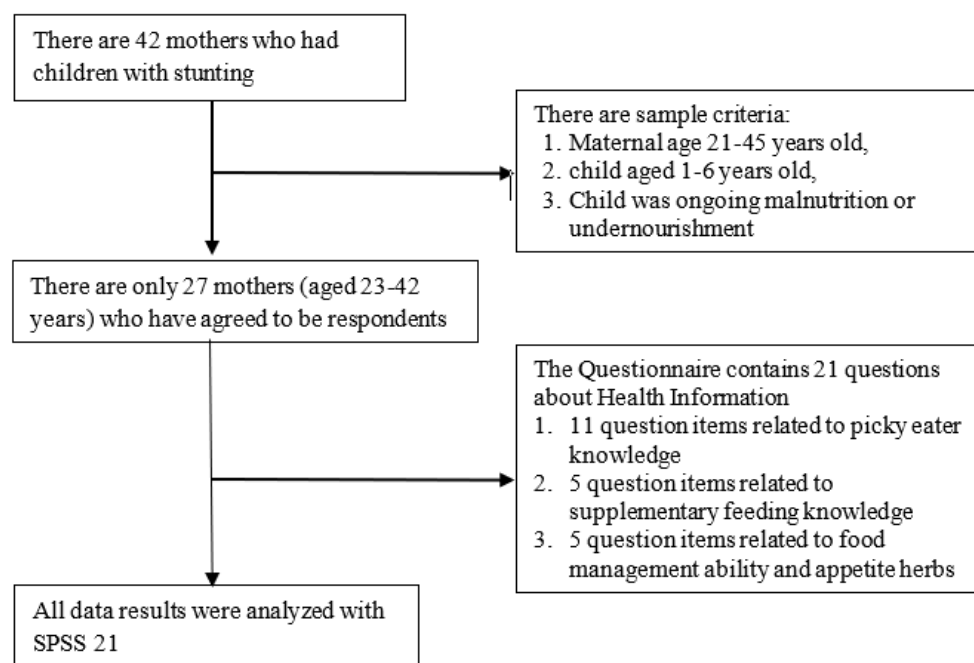


Fig. 1. The Diagnosis of Malnutrition Data Information

3. RESULTS AND DISCUSSION

The findings revealed that the majority of respondents belonged to the early adult category, with a history of education up to high school and having job statuses (see Table 1). A smaller proportion of respondents were in their late teens, had primary school education, and were unemployed.

Regarding knowledge of health information of picky eater, the results indicated that the average score of respondents was close to the maximum value and far from the minimum value (6.59 ± 2.56). This suggests that the respondents possessed adequate knowledge of health information of picky eaters. The mean score for knowledge of health information of supplementary feeding (3.22 ± 1.47) and manage additional food and appetite herbs (15.07 ± 2.92) also approached the maximum value. However, the data distribution test revealed that only manage additional food and appetite herbs exhibited a normal distribution ($0.086 > 0.05$), while knowledge of health information of picky eater and knowledge of health information of supplementary feeding did not conform to normal distribution (see Table 2).

Table 1. Characteristics of Respondents (n=27)

Characteristics	Frequency (f)	Percentage (%)
Ages		
Late Teens (17-25 yr)	5	13.5
Early Adult (26-35 yr)	14	64.9
Late Adult (36-45 yr)	8	21.6
Educations		
Elementary	1	2.7
Junior High School	9	24.3
Senior High School	11	29.7
University	6	16.2
Jobs		
Working	18	48.6
No Working	9	24.3

Table 2. Tendency Central of Knowledge of Health Information of Picky Eater, Supplementary Feeding, and Manage Additional Food and Appetite Herbs

Variables	Min	Max	Median	Mean	St. Dev	Shapiro-Wilk Test
Picky Eater	0	10	7	6.59	2.56	0.001
Supplementary Feeding	1	5	3	3.22	1.47	0.002
Manage Additional Food and Appetite Herbs	10	20	14	15.07	2.92	0.086

Table 3. Picky Eater Knowledge, Supplementary Feeding Knowledge, and Supplementary Feeding & Herbal Management based on ages, educations, and Jobs

Variables	Knowledge of Health Information of Picky Eater	Knowledge of Health Information of Supplementary Feeding	Manage Additional Food and Appetite Herbs
Ages			
Late Teens (17-25 yr)	7.0	2.8	16.0
Early Adult (26-35 yr)	6.5	3.2	14.7
Late Adult (36-45 yr)	6.5	3.6	15.1
Educations			
Elementary	1.0	1.0	14.0
Junior High School	7.3	2.8	13.9
Senior High School	5.3	3.5	15.0
University	8.8	3.7	17.2
Occupations			
Employed	6.1	3.2	14.4
Unemployed	7.7	3.2	16.3

The cross-tabulation results (see Table 3) examining the relationship between respondent characteristics and the three main variables revealed several notable findings. Firstly, the average knowledge of health information of picky eater was highest among respondents in the late teens age category (7.0), those with a university education (8.8), and those who were unemployed (7.7). Secondly, the mean value for the knowledge of health information of supplementary feeding variable was highest among respondents in the late adult age category (3.6), those with a university education (3.7), and those who were unemployed (16.3). Lastly, the highest mean value for manage additional food and appetite herbs variable was observed among respondents in the late teens age category (16.0), those with a university education (17.2), and those who were unemployed (16.3). These findings indicate that respondents exhibit variations in average knowledge and abilities based on

their age, education level, and employment status. Notably, university education consistently demonstrated significant differences compared to other education categories.

Table 4. Correlation between Knowledge of Health Information of Picky Eater, Supplementary Feeding, and Supplementary Feeding & Herbal Management

Knowledge of Health Information of	Picky Eater	Supplementary Feeding	Manage Additional Food and Appetite Herbs
Picky Eater	-	0.017 (0.912)	0.406 (0.007)
Supplementary Feeding	0.017 (0.912)	-	0.075 (0.630)
Manage Additional Food and Appetite Herbs	0.406 (0.007)	0.075 (0.630)	-

The results of this study (see Table 4) indicated that there was no correlation between knowledge of health information of picky eating and knowledge of supplementary feeding ($0.912 > 0.05$). Similarly, there was no correlation between knowledge of health information of supplementary feeding and the ability to manage supplementary feeding and appetite herbs ($0.630 > 0.05$). However, a significant correlation was found between knowledge of health information of picky eating and the ability to manage additional food and appetite herbs ($0.007 < 0.05$).

a. Knowledge of Health Information of Picky Eating and Supplementary Feeding

The lack of correlation between knowledge of picky eating and knowledge of supplementary feeding found in this study may be influenced by several factors. Firstly, it is important to consider that picky eating and supplementary feeding are distinct concepts with different underlying mechanisms. Picky eating refers to a child's selective eating behaviors and preferences, while supplementary feeding refers to the introduction of solid foods alongside breast milk or formula to meet the nutritional needs of infants.

The lack of correlation is that parents may possess knowledge about one aspect (e.g., picky eating) but lack sufficient knowledge about the other (e.g., supplementary feeding). This could be attributed to variations in information sources, education, cultural practices, and parental experiences. Parents may have received guidance or information on managing picky eating behaviors, but not necessarily on the appropriate introduction and progression of additional foods.

Previous research has extensively explored various factors contributing to picky eating in children, including parental knowledge, eating patterns, and parenting practices [9], [14]. These factors play critical roles in shaping children's food preferences and behaviors. However, an intriguing finding emerged from the present study, revealing a lack of correlation between mothers' knowledge of health information and knowledge specifically related to supplementary feeding, despite the importance of both factors [15]. This observation sheds light on the suboptimal implementation of the supplementary feeding program at the research site in the previous year. Although parents are aware of the picky eating issue in their child, they encounter difficulties in effectively resolving the problem [16], [17].

Knowledge of health information serves as a valuable asset in addressing picky eating problems [18]. Mothers with a strong understanding of health information are better equipped to prevent and manage these issues effectively [19], [20]. Notably, knowledge of health information regarding nutrition during the first 8000 days of life [21], [22] and supplementary feeding significantly contributes to addressing nutritional problems in children under five years old [23], [24].

Supplementary feeding represents a pivotal national program aimed at preventing and addressing stunting [25], [26]. However, research findings indicate that the inadequate provision of supplementary food can be attributed to insufficient nutrition service centers [27]. One potential approach to supporting stunting prevention efforts is the empowerment of female cadres [28], [29].

It is essential to consider the complex nature of feeding dynamics and the multitude of factors that contribute to a child's eating behaviors. Parenting practices, family environment, and the child's individual preferences and sensory sensitivities all play significant roles in shaping eating behaviors. Thus, while knowledge about picky eating and supplementary feeding are important, they may not always align or directly correlate due to the multifaceted nature of feeding behaviors.

Moreover, the findings may also reflect the challenges faced by parents in effectively translating their knowledge into practical feeding practices. Despite having knowledge about picky eating and supplementary feeding, parents may encounter difficulties in implementing appropriate strategies or managing their child's feeding behaviors in real-world scenarios. Various factors such as parental stress, time constraints, and external influences can impact feeding practices and may contribute to the lack of observed correlation in the study.

b. Knowledge of Health Information of Supplementary Feeding and The Ability to Manage Supplementary Feeding and Appetite Herbs

The absence of a correlation between knowledge of supplementary feeding and the ability to manage supplementary feeding and appetite herbs found in this study may be influenced by several factors. Firstly, it is important to acknowledge that supplementary feeding and supplementary feeding involve different aspects of a child's nutritional intake. Supplementary feeding refers to the introduction of solid foods to complement breast milk or formula, while supplementary feeding involves providing additional foods or nutrients to meet specific dietary needs [30].

The lack of correlation is that parents may have acquired knowledge about supplementary feeding, but this knowledge may not extend to the specific management of supplementary feeding and the use of appetite herbs [31]. The ability to manage supplementary feeding and incorporate appetite herbs requires additional knowledge and skills that may not be adequately covered in general knowledge about supplementary feeding.

Interestingly, in this study, it was observed that knowledge of health information related to supplementary feeding was not correlated with the ability to manage supplementary feeding and appetite herbs. This discrepancy can be attributed to the cultural context [32] and the alignment of respondents' practices with the national program, which emphasizes the use of locally available ingredients in supplementary feeding. Consequently, such foods have become part of the daily menu, diminishing the significance of preparing additional food. However, a lack of understanding persists regarding the proper use and differentiation of supplementary food from regular daily meals. At the study site, the supplementary feeding program seemed to replace daily meals. Thus, cultural factors within the community must be taken into account when implementing stunting health programs [32], [33].

The study mentions that the management of supplementary feeding in the research site aligns with the national program, emphasizing the use of locally available ingredients [24], [34]. This cultural context may influence parents' practices and their familiarity with supplementary feeding and appetite herbs, thus diminishing the significance of specific knowledge in managing them [18], [35].

Moreover, the study suggests a lack of understanding regarding the proper use and differentiation of supplementary food from regular daily meals [36]. This indicates a gap in knowledge and highlights the need for more targeted information and education on the appropriate management of supplementary feeding and the use of appetite herbs [37], [38].

The findings also raise the possibility that the implementation of the supplementary feeding program at the research site may have replaced daily meals, potentially affecting the way parents perceive and manage supplementary feeding. This suggests the importance of considering cultural factors and community practices when implementing nutrition programs to ensure they are in line with local beliefs and practices [28].

c. Knowledge of Health Information of Picky Eating and The Ability to Manage Additional Food and Appetite Herbs

The significant correlation between knowledge of health information of picky eating and the ability to manage additional food and appetite herbs found in this study may be attributed to several factors. Understanding the concepts and dynamics of picky eating can empower parents with the necessary knowledge to effectively manage their child's eating behaviors. Knowledge about picky eating equips parents with insights into the factors influencing their child's selective eating patterns, such as sensory preferences or aversions, and strategies to address these behaviors [36], [39], [40]. This knowledge can enhance parents' ability to introduce and manage additional foods and incorporate appetite herbs [41], as they are better informed about their child's unique dietary preferences and needs.

Furthermore, knowledge of health information related to picky eating may also encompass understanding the nutritional requirements and appropriate food choices for picky eaters. Parents who are knowledgeable about the specific nutrient needs and suitable food options for picky eaters are more likely to make informed decisions when selecting additional foods and appetite herbs to address potential nutritional gaps [42].

Additionally, the ability to manage additional food and appetite herbs may be influenced by the practical application of knowledge [38], [43]. Parents who are well-informed about picky eating and its management are more likely to possess the necessary skills, strategies, and confidence to effectively incorporate additional foods and appetite herbs into their child's diet [19], [35], [44]. This can include techniques for presenting foods, creating a positive eating environment, and implementing strategies to encourage acceptance of new foods.

It is important to note that this correlation may also be influenced by individual and contextual factors. For instance, the study mentioned that the cultural context at the research site aligned with the use of appetite herbs and locally available ingredients in supplementary feeding. This cultural familiarity and acceptance of appetite herbs may contribute to the observed correlation between knowledge of picky eating and the ability to manage additional food and appetite herbs.

In summary, previous research has identified various factors contributing to picky eating, including knowledge, eating patterns, and parenting practices. Nonetheless, this study reveals a lack of correlation between mothers' knowledge of health information and knowledge specifically related to supplementary feeding. These findings highlight the suboptimal implementation of the supplementary feeding program at the research site. Knowledge of health information plays a pivotal role in addressing picky eating problems, and it is crucial to enhance mothers' understanding to effectively prevent and manage these issues. Furthermore, the importance of supplementary feeding in stunting prevention cannot be overstated; however, challenges arise due to insufficient nutrition service centers. Empowering female cadres represents a potential avenue for supporting stunting prevention efforts. The study also underscores the need to consider cultural factors when implementing stunting health programs, as local practices and beliefs influence the utilization and management of supplementary feeding.

4. CONCLUSION

In conclusion, the findings suggest that higher levels knowledge of health information of picky eater among respondents are associated with better ability to manage additional food and appetite herbs. However, no significant correlation was found between knowledge of health information of picky eating and knowledge of health information of supplementary feeding. It is recommended that future research expands the sample size to obtain a more representative population, thereby enhancing our understanding of the picky eater phenomenon.

REFERENCES

- [1] M. D. Patel, S. M. Donovan, and S. Y. Lee, "Considering nature and nurture in the etiology and prevention of picky eating: A narrative review," *Nutrients*, vol. 12, no. 11, pp. 1–18, Nov. 2020, doi: 10.3390/nu12113409.
- [2] A. Mudholkar, L. Korostenski, D. Blackwell, and A. E. Lane, "Factors associated with the early emergence of atypical feeding behaviours in infants and young children: A scoping review," *Child Care Health Dev*, vol. 49, no. 1, pp. 1–19, Jan. 2023, doi: 10.1111/cch.13005.
- [3] Y. Nurmalasari, D. Utami, and B. Perkasa, "Picky eating and stunting in children aged 2 to 5 years in central Lampung, Indonesia," *Malahayati International Journal of Nursing and Health Science*, vol. 03, no. 1, pp. 29–34, 2020.
- [4] H. Marlina, N. Rany, L. Rosalina, A. Faridah, and I. Permaisuri, "Risk Factors For Picky Eater In Preschool Children In An-Namiroh Kindergarten, Pekanbaru City," *International Journal of Scientific & Technology Research*, vol. 9, no. 04, pp. 170–174, 2020, [Online]. Available: www.ijstr.org
- [5] F. Wahyuni *et al.*, "RELATIONSHIP OF PICKY EATER BEHAVIOR WITH NUTRITIONAL STATUS IN PRESCHOOLERS," *Jurnal Keperawatan Respati Yogyakarta*, vol. 7, no. 3, p. 145, 2020, [Online]. Available: <http://nursingjurnal.respati.ac.id/index.php/JKRY/index>
- [6] C. M. Taylor and P. M. Emmett, "Picky eating in children: Causes and consequences," in *Proceedings of the Nutrition Society*, Cambridge University Press, May 2019, pp. 161–169. doi: 10.1017/S0029665118002586.
- [7] D. Khanna *et al.*, "Oral Nutritional Supplementation Improves Growth in Children at Malnutrition Risk and With Picky Eating Behaviors," *Nutrients*, vol. 13, no. 10, pp. 1–15, 2021, doi: 10.3390/nu13103590.
- [8] A. K. Ghosh *et al.*, "Effect of Oral Nutritional Supplementation on Growth and Recurrent Upper Respiratory Tract Infections in Picky Eating Children at Nutritional Risk: A Randomized, Controlled Trial," *Journal of International Medical Research*, vol. 46, no. 6, pp. 2186–2201, 2018, doi: 10.1177/0300060518757355.

- [9] L. Mahmood, P. Flores-Barrantes, L. A. Moreno, Y. Manios, and E. M. Gonzalez-Gil, "The influence of parental dietary behaviors and practices on children's eating habits," *Nutrients*, vol. 13, no. 1138, pp. 1–13, Apr. 2021, doi: 10.3390/nu13041138.
- [10] M. Kostecka, I. Jackowska, and J. Kostecka, "Factors affecting complementary feeding of infants. A pilot study conducted after the introduction of new infant feeding guidelines in Poland," *Nutrients*, vol. 13, no. 1, pp. 1–13, Jan. 2021, doi: 10.3390/nu13010061.
- [11] M. V. Dhami, F. A. Ogbo, U. L. Osuagwu, and K. E. Agho, "Prevalence and factors associated with complementary feeding practices among children aged 6-23 months in India: A regional analysis," *BMC Public Health*, vol. 19, no. 1034, pp. 1–16, Aug. 2019, doi: 10.1186/s12889-019-7360-6.
- [12] O. Fadare, M. Amare, G. Mavrotas, D. Akerele, and A. Ogunniyi, "Mother's nutrition-related knowledge and child nutrition outcomes: Empirical evidence from Nigeria," *PLoS One*, vol. 14, no. 2, p. e0212775, Jan. 2019, doi: 10.1371/journal.pone.0212775.
- [13] P. Sandvik, A. Ek, K. Eli, M. Somaraki, M. Bottai, and P. Nowicka, "Picky Eating in An Obesity Intervention for Preschool-Aged Children - What Role Does It Play, and Does The Teasement Instrument Matter?," *International Journal of Behavioral Nutrition and Physical Activity*, vol. 16, no. 1, pp. 1–10, 2019, doi: 10.1186/s12966-019-0845-y.
- [14] K. N. Balantekin, S. Anzman-Frasca, L. A. Francis, A. K. Ventura, J. O. Fisher, and S. L. Johnson, "Positive parenting approaches and their association with child eating and weight: A narrative review from infancy to adolescence," *Pediatr Obes*, vol. 15, no. 10, pp. 1–15, Oct. 2020, doi: 10.1111/ijpo.12722.
- [15] A. M. Dattilo, R. S. Carvalho, R. Feferbaum, S. Forsyth, and A. Zhao, "Hidden realities of infant feeding: Systematic review of qualitative findings from parents," *Behavioral Sciences*, vol. 10, no. 5, pp. 1–13, May 2020, doi: 10.3390/bs10050083.
- [16] K. K. Dahlsgaard and J. Bodie, "The (Extremely) Picky Eaters Clinic: A Pilot Trial of a Seven-Session Group Behavioral Intervention for Parents of Children With Avoidant/Restrictive Food Intake Disorder," *Cogn Behav Pract*, vol. 26, no. 3, pp. 492–505, Aug. 2019, doi: 10.1016/j.cbpra.2018.11.001.
- [17] H. Wolstenholme, C. Kelly, M. Hennessy, and C. Heary, "Childhood fussy/picky eating behaviours: A systematic review and synthesis of qualitative studies," *International Journal of Behavioral Nutrition and Physical Activity*, vol. 17, no. 2, pp. 1–22, Jan. 2020, doi: 10.1186/s12966-019-0899-x.
- [18] L. A. Daniels, "Feeding Practices and Parenting: A Pathway to Child Health and Family Happiness," *Ann Nutr Metab*, vol. 74, no. Suppl2, pp. 29–42, Jun. 2019, doi: 10.1159/000499145.
- [19] C. Kubb and H. M. Foran, "Online health information seeking by parents for their children: Systematic review and agenda for further research," *Journal of Medical Internet Research*, vol. 22, no. 8. JMIR Publications Inc., pp. 1–21, Aug. 01, 2020. doi: 10.2196/19985.
- [20] A. K. Morrison, A. Glick, and H. Shonna Yin, "Health Literacy: Implications for Child Health Practice Gaps," *Health Literacy: Implications for Child Health*, vol. 40, no. 6, pp. 263–277, 2019, [Online]. Available: <http://pedsinreview.aappublications.org/>
- [21] L. J. Drake *et al.*, "Establishing Global School Feeding Program Targets: How Many Poor Children Globally Should Be Prioritized, and What Would Be the Cost of Implementation?," *Policy and Practice Reviews*, vol. 8, no. 530176, pp. 1–10, Dec. 2020, doi: 10.3389/fpubh.2020.530176.
- [22] M. B. Ahern *et al.*, "Locally-procured fish is essential in school feeding programmes in sub-saharan Africa," *Foods*, vol. 10, no. 2080, pp. 1–23, Sep. 2021, doi: 10.3390/foods10092080.
- [23] S. Khan, S. Zaheer, and N. F. Safdar, "Determinants of stunting, underweight and wasting among children < 5 years of age: Evidence from 2012-2013 Pakistan demographic and health survey," *BMC Public Health*, vol. 19, no. 358, pp. 1–15, Apr. 2019, doi: 10.1186/s12889-019-6688-2.
- [24] B. Keith-Jennings, J. Llobrera, and S. Dean, "Links of the supplemental nutrition assistance program with food insecurity, poverty, and health: Evidence and potential," *American Journal of Public Health*, vol. 109, no. 12. American Public Health Association Inc., pp. 1636–1640, 2019. doi: 10.2105/AJPH.2019.305325.
- [25] K. Baye, "Prioritizing the scale-up of evidence-based nutrition and health interventions to accelerate stunting reduction in ethiopia," *Nutrients*, vol. 11, no. 3065, pp. 1–9, Dec. 2019, doi: 10.3390/nu11123065.

- [26] Y. Mogot, O. Solihin, and T. Rohmawati, "The Role of Health Communication in Addressing Stunting in Bandung Regency," in *The 6th International Conference on Business, Economics, Social Sciences, and Humanities*, 2023, pp. 1182–1188.
- [27] R. Abraham, N. Koshy, and R. Jose, "Utilisation of Supplementary Nutritional Services of ICDS by Paediatric Beneficiaries of Central Kerala, India: A Cross-sectional Study," *Journal of Clinical and Diagnostic Research*, vol. 16, no. 5, pp. 18–23, 2023, doi: 10.7860/JCDR/2023/61313.17916.
- [28] H. S. Mediani, S. Hendrawati, T. Pahria, A. S. Mediawati, and M. Suryani, "Factors Affecting the Knowledge and Motivation of Health Cadres in Stunting Prevention Among Children in Indonesia," *J Multidiscip Healthc*, vol. 15, pp. 1069–1082, 2022, doi: 10.2147/JMDH.S356736.
- [29] Q. Khoirun *et al.*, "Jurnal Pengabdian dan Pemberdayaan Masyarakat Indonesia Community movement to prevent stunting in the area of Tambaksari District Puskesmas Rangkah Surabaya," *Jurnal Pengabdian dan Pemberdayaan Masyarakat Indonesia*, vol. 2, no. 5, pp. 156–164, 2022, [Online]. Available: <https://jppmi.ptti.web.id/index.php/jppmi/URL:https://jppmi.ptti.web.id/index.php/jppmi/article/view/94>
- [30] A. Nugroho, "History of Breastfeeding, Formula and Eating Patterns in Stunted Toddlers: The Case with Picky Eaters," *International Journal of Innovation, Creativity and Change*, vol. 13, no. 2, pp. 217–231, 2020.
- [31] R. Lindquist, M. Snyder, and M. F. Tracy, *Complementary and Alternative Therapies in Nursing*, 7th ed. New York: Springer Publishing Company, LLC, 2014.
- [32] X. Zhang, D. M. Rosenthal, L. Benton, and M. Lakhanpaul, "Cultural influences on complementary feeding beliefs amongst new Chinese immigrant mothers in England: A mixed methods study," *Int J Environ Res Public Health*, vol. 17, no. 15, pp. 1–21, Aug. 2020, doi: 10.3390/ijerph17155468.
- [33] M. Marni *et al.*, "Cultural communication strategies of behavioral changes in accelerating of stunting prevention: A systematic review," *Open Access Maced J Med Sci*, vol. 9, no. F, pp. 447–452, Jan. 2021, doi: 10.3889/oamjms.2021.7019.
- [34] A. Prasetyo *et al.*, "Stunting Convergence Management Framework through System Integration Based on Regional Service Governance," *Sustainability (Switzerland)*, vol. 15, no. 3, pp. 1–23, Feb. 2023, doi: 10.3390/su15031821.
- [35] H. Skouteris, B. Hill, M. McCabe, B. Swinburn, and L. Busija, "A Parent-Based Intervention to Promote Healthy Eating and Active Behaviours in Pre-School Children: Evaluation of the MEND 2-4 Randomized Controlled Trial," *Pediatr Obes*, vol. 11, no. 1, pp. 4–10, 2016, doi: 10.1111/ijpo.12011.
- [36] C. Cerdasari, T. Puspita, and R. Adelina, "Effect of 'Bento' Preparation Training on Mothers Knowledge, Skill, and Child's Picky Eating," *Jurnal Gizi dan Dietetik Indonesia (Indonesian Journal of Nutrition and Dietetics)*, vol. 6, no. 2, p. 43, 2019, doi: 10.21927/ijnd.2018.6(2).43-50.
- [37] C. Farrow *et al.*, "Using Repeated Visual Exposure, Rewards and Modelling in A Mobile Application to Increase Vegetable Acceptance in Children," *Appetite*, vol. 141, no. May, p. 104327, 2019, doi: 10.1016/j.appet.2019.104327.
- [38] J. M. Freitas, T. C. Oliveira, M. H. P. Santana, C. E. Banks, R. A. A. Munoz, and E. M. Richter, "A Simple and Fast-Portable Method for The Screening of The Appetite-Suppressant Drug Sibutramine in Natural Products and Multivitamins Supplements," *Sens Actuators B Chem*, vol. 282, no. 1 March 2019, pp. 449–456, 2019, doi: 10.1016/j.snb.2018.11.094.
- [39] P. F. Wiliyanarti, Y. Wulandari, and D. Nasrullah, "Behavior in fulfilling nutritional needs for Indonesian children with stunting: Related culture, family support, and mother's knowledge," *J Public Health Res*, vol. 11, no. 4, Oct. 2022, doi: 10.1177/22799036221139938.
- [40] A. A. Windiyani and A. Mukminin, "The Influence of Food Creation Activity on the Improvement of Picky Eater Behavior in Children Aged 5-6 Years in TK Negeri Pembina in Pemalang Regency," *BELIA: Early Childhood Education ...*, vol. 10, no. 1, pp. 1–8, 2021, [Online]. Available: <https://journal.unnes.ac.id/sju/index.php/belia/article/view/38567%0Ahttps://journal.unnes.ac.id/sju/index.php/belia/article/view/38567/19632>
- [41] K. A. Baxter, S. Nambiar, T. H. J. So, D. Gallegos, and R. Byrne, "Parental Feeding Practices in Families Experiencing Food Insecurity: A Scoping Review," *International Journal of Environmental Research and Public Health*, vol. 19, no. 9. MDPI, May 01, 2022. doi: 10.3390/ijerph19095604.
- [42] M. Yimam *et al.*, "Evaluation of Natural Product Compositions for Appetite Suppression," *J Diet Suppl*, vol. 16, no. 1, pp. 86–104, 2019, doi: 10.1080/19390211.2018.1429518.

- [43] J. H. Suh, Y. Wang, and C. T. Ho, "Natural Dietary Products and Their Effects on Appetite Control," *J Agric Food Chem*, vol. 66, no. 1, pp. 36–39, 2018, doi: 10.1021/acs.jafc.7b05104.
- [44] V. Veri, S. Supami, R. D. Pratiwi, and S. Rahayu, "The Effect of Hypnoparenting Techniques Giving Positive Suggestion on The Development of Children in Behavior Responsibility to Pre-school Children," *Nursing Analysis: Journal of Nursing Research*, vol. 2, no. 2, pp. 119–127, 2022.

BIOGRAPHY OF AUTHORS



Muflih, Muflih, a lecturer at Department of Nursing, Faculty of Health Sciences, Universitas Respati Yogyakarta, Email: muflih@respati.ac.id, and Orcid ID: <https://orcid.org/0000-0002-6185-9914>



Rahayu Widaryanti, a lecturer at Department of Midwifery, Faculty of Health Sciences, Universitas Respati Yogyakarta, Email: rwidaryanti@respati.ac.id and Orcid ID: <https://orcid.org/0000-0002-6614-3341>



Fika Lilik Indrawati, a lecturer at Department of Midwifery, Faculty of Health Sciences, Universitas Respati Yogyakarta, Email: fika.lilik@respati.ac.id and Orcid ID: <https://orcid.org/0000-0002-7475-007X>



Natasya Gabryella Trisagita, a assistance of lecturer at Department of Nursing, Faculty of Health Sciences, Universitas Respati Yogyakarta, Email: natasyamongkarembo@gmail.com