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Maternal Attributes and Child Minimum Acceptable Diet during COVID-19 Pandemic in Indonesia

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ABSTRACT

Appropriate complementary feeding practices must be sustained during the COVID-19 pandemic for optimal growth and development of a child. However, the studies assessing factors associated with complementary feeding practices during COVID-19 are still limited. The objective of this study was to evaluate maternal attributes and minimum acceptable diet (MAD) of 6-11-month-old children during the COVID-19 pandemic in Indonesia. This study was part of the "COVID-19 Mom-Infant Study" and was conducted in all regions of Indonesia using an online survey. Chi-square or Fisher's exact test was performed to examine the relationship between MAD and maternal attributes, with a significant level at p-value <0.05. From a total of 262 data collected, 74%, 77.1%, 94.3% of the children aged 6-11 months have met MAD, MDD (minimum dietary diversity), and MMF (minimum meal frequency), respectively. Mother's education level (OR= 3.625; 95%CI [1.805 – 7.280]) and working status (OR= 2.197; 95%CI [1.291 – 3.895] were found associated with child's MAD. One-third of children did not receive the recommended infant and young children feeding practices. Conducting nutrition interventions to mothers with lower education and not working should be a priority under these circumstances.

Keywords: *Dietary diversity; Meal frequency; Minimum acceptable diet; COVID-19 Pandemic; Indonesia*

ABSTRAK

Praktik pemberian makanan pendamping ASI (MP-ASI) yang tepat perlu dipertahankan selama situasi pandemi COVID-19 untuk pertumbuhan dan perkembangan anak yang optimal. Namun, studi yang menguji faktor-faktor yang berhubungan dengan praktik pemberian MP-ASI selama pandemi COVID-19 masih terbatas. Oleh karena itu, penelitian ini bertujuan untuk mengetahui hubungan antara karakteristik ibu dan diet minimum yang dapat diterima (MAD) anak usia 6-11 bulan saat pandemi COVID-19 di Indonesia. Penelitian ini merupakan bagian dari "COVID-19 Mom-Infant Study" dan dilakukan di seluruh wilayah Indonesia dengan menggunakan survei

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online. Uji Chi-square atau Fisher's exact dilakukan untuk melihat hubungan antara MAD dan karakteristik ibu dengan tingkat signifikan yang ditetapkan pada p-value <0,05. Sebanyak 262 data didapatkan dengan 74,0%, 77,1%, 94,3% anak usia 6-11 bulan masing-masing memenuhi MAD, MDD (keragaman makanan minimum), dan MMF (frekuensi makan minimum). Tingkat pendidikan (OR= 3.625 ; 95%CI [1.805 – 7.280]) dan status pekerjaan ibu (OR= 2.197 ; 95%CI [1.291 – 3.895] ditemukan berhubungan dengan MAD anak. Sepertiga anak dalam studi ini tidak menerima praktik pemberian makan bayi dan anak yang direkomendasikan. Intervensi gizi dalam kondisi serupa perlu diprioritaskan bagi ibu yang memiliki tingkat pendidikan rendah dan tidak bekerja.

Kata kunci: Keragaman makanan; Frekuensi makan; Diet minimum yang dapat diterima; Pandemi COVID-19; Indonesia

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INTRODUCTION

After 6 months of age, children need adequate quantity and quality of complementary foods because breastmilk alone is no longer sufficient. During complementary feeding period in most countries, incidents of malnutrition such as stunting, wasting, underweight, obesity, and micronutrient deficiencies rise sharply [1]. In Indonesia, 30.8%, 17.7%, and 10.2% of children under 5 years old are stunting, underweight, and wasting [2]. The government has a strong commitment to reducing child stunting to 14 % and child wasting to 7% in 2024 [3].

One of the strategies to improve child nutrition is to optimize appropriate complementary feeding practices that should be timely, adequate, safe, and properly fed. World Health Organization (WHO) sets minimum acceptable diet (MAD), combining dietary diversity and feeding frequency as one of the indicators for infant feeding practices [4]. Study in Indonesia found that MAD can be a tool to estimate adequacy of nutrient intake [5]. Furthermore, studies showed that consumption of MAD reduced the risk of stunting and underweight [6].

Appropriate complementary feeding practices are needed to achieve optimal growth, development, and health that needs to be sustained during coronavirus disease 19 (COVID-19) pandemic situation. However, even before COVID-19 pandemic, only 26% of Indonesian children aged 6-11 months achieved MAD [7]. This number is poorer as compared to 6-11-months-old children in East Asia and the Pacific, who 56% of them had MAD [8]. Moreover, 22.4% of Indonesian children aged 6-8 months experienced not timely introduction of complementary food [9].

Some attributes enable appropriate complementary feeding practices in the form of individual factors, group-level factors, and society-level factors. One of the determinants of complementary feeding practices at the individual level is the attributes of the mother [10]. COVID-19 pandemic and also its control measures such as large-scale social restriction and physical distancing can have an impact on factors that are associated with complementary feeding practice with no exception of mother attributes. The COVID-19 disease that affects adversely on mother's health status can reduce the caring capacity and feeding attention [11]. Moreover, decreased accessibility and affordability of food, feeding supports, and mood condition during COVID-19 can also limit mother's ability to provide nutritious food [12–14]. The objective of the study was to assess the association between maternal attributes and minimum

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acceptable diet of 6-11 months old children during COVID -19 pandemic in Indonesia.

STUDY METHODS

Study Design

This study was a quantitative study using a cross-sectional design. This study was part of the "COVID-19 Mom-Infant Study" which originated in the United Kingdom (UK). The survey was aimed to be distributed in Indonesia regions. Data collection was carried out from December 2020 to February 2021.

Study Subject

Mothers with babies aged 6-11 months in Indonesia during the COVID-19 pandemic were the population in this study. The subjects of this study were mothers aged 18 years or over, having babies aged 6-11 months, Indonesian citizens, and willing to participate. Mothers who did not live in Indonesia during the COVID-19 pandemic and pregnant were not included in the study. The sample size was obtained from the calculation of a minimum sample of 10 subjects per 1 variable, based on the rule of thumb of multivariate analysis. Obtained a minimum sample of 210 subjects with the addition of 10% for non-response to 231 samples.

Instrument development and data collection

This study used an online questionnaire as an instrument to obtain data. The questionnaire was adapted from the "COVID-19 Mom-Infant Study" from UK with additional questions for complementary feeding practices. The questionnaire was divided into four parts, namely the socio-economic characteristics and household food security, COVID-19 and its impact on households, work patterns and finances, feeding practices and infants behavior during COVID-19, and the impact of COVID-19 on maternal activities, mood, and access to support [13]. Questions regarding food consumption of the infant in the last 24 hours were adapted from DHS Indonesia 2017 [7]. Questionnaire pre-testing was conducted on 43 subjects to see the clarity of the questionnaire and to test its validity and reliability. The validity and reliability test for DDS food groups were acceptable with 0.816 for the Cronbach alpha and the value of Pearson correlation range 0.470 – 0.647 with r=0.304 as a reference value (N= 42).

Data collection was carried out through an online questionnaire with the link bit.ly/mombabystudy and distributed through personal contacts and social media. The distribution of questionnaires also supported by mother and child support group on their social media. After agreeing to take part in this study, the subject will be informed how to fill in the questions on the first page of the questionnaire. During the data collection, consistency checking was also done to maintain data quality. Confirmation was done if any inconsistency was found. The compensation was randomly given for 50 respondents who had baby aged 6 – 11 months that completed the survey.

Analysis

The data that had been collected was reviewed for consistency and completeness. Some of the data were transformed into new categories. The food that consumed by the infant in the last 24 hours were categorized into 7 food groups to obtained dietary diversity. The 7 food groups consist of grains/roots/tubers, legumes/nuts, dairy products, flesh foods, eggs, vitamin A-rich fruits and vegetables, and other fruits and vegetables. Minimum dietary diversity (MDD) was met if the child consumed 4 from 7 food groups in the last 24 hours. A total number of feeding will be categorized meeting

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minimum meal frequency (MMF). The breastfed infants aged 6-8 months have 2 meals, breastfed infants aged 9-23 have 3 meals, and non-breastfed infants have 4 meals, including 2 times milk feeds were considered as meeting MMF. The minimum acceptable diet (MAD) was achieved if the child met both MDD and MMF [4]. Mother education was classified as high if last educational attainment was minimum diploma and middle if the last educational attainment was senior/junior high school. Mother was at risk of COVID-19 if she had any COVID-19-symptoms, tested positive of COVID-19, or recommended to stay at home with public health authorities due to high risk of COVID-19. Data analysis was performed using IBM SPSS version 20.

Univariate analysis presented in frequencies and percentages to determine the descriptive characteristics of the subject regarding complementary feeding practices and maternal attributes. Bivariate analysis using Chi-square or Fisher's exact test was performed to show the association between MAD and maternal attributes with a significant level set at $p < 0.05$.

Ethical approval was obtained from the Ethics Committee of the Faculty of Medicine, University of Indonesia – Dr.Cipto Mangunkusumo Hospital (KET 357 / UN2.F1 / ETIK / PPM.00.02 / 2020

STUDY RESULTS

During data collection from 2nd December 2020 to 8th February 2021, a total of 1,074 responses were obtained. Among those responses, only 335 were filled by respondents of children aged 6-11 months while others did not pass screening questions or did not meet the child age criteria of this study. The completed response obtained in this study was 273 responses. From 273 completed responses, 11 were excluded because of 4 duplication responses, 2 respondents included in pretesting, 1 respondent were not the child's mother, and 6 implausible data that could not be confirmed. The total response included as subjects in this study were 262 subjects (Figure 1).

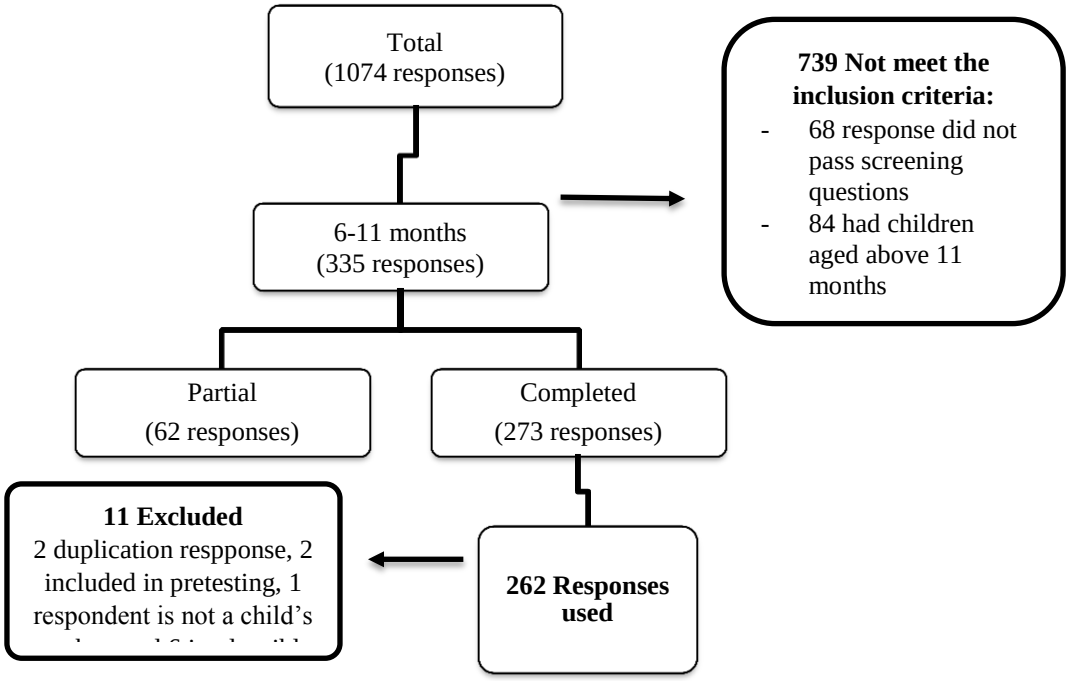

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Figure 1. Diagram of Subjects Obtained in the Study.

Table 1 shows information about descriptive results of general characteristics of the mothers. The median of the mother age was 28.00, with an age range of 18-41 years. The age group was dominated by ≥25 years old age group. Most of the mothers were in high-education group (84.7%), which at least had diploma degree as the last education attainment. Housewife was the most occupation of the mother (52.7%), followed with private employee (18.3%) and civil servant/army/police (12.2%). Other occupations (8.0%) were included health care workers (doctor, nurse, and midwife), teacher, contract employee, honorary employee, non-civil servant government employee, researcher, honorary employee, and finance administrator. Most of the mother's marital status was married (98.9%) and lived in Java island (85.9%).

Table 1. Characteristics of the Mothers (N=262)

Characteristics	Median (Min-Max)	n (%)
Mother's age	28.00 (18 - 41)	
<25 years old		26 (9.9)
≥25 years old		236 (90.1)
Mother's education level		
Middle education level (Junior high school – senior high school)		40 (15.3)
High education level (Diploma – Master degree)		222 (84.7)
Mother's occupation		
Civil servant/Army/Police		32 (12.2)
Private employee		48 (18.3)
Entrepreneur		16 (6.1)
Freelancer		4 (1.5)
Student		3 (1.1)
Housewife		138 (52.7)
Others[1]		21 (8.0)
Marital status		
Married		259 (98.9)
Single parent living with family		3 (1.1)
Geographical region		
Java		225 (85.9)
DKI Jakarta		45 (17.2)
West Java		79 (30.0)
Central Java		24 (9.2)
Yogyakarta (DIY)		26 (9.9)
East Java		27 (10.3)
Banten		24 (9.2)
Others (NTT, NTB, Kalimantan, Sulawesi)		37 (14.1)

[1] Others: health care workers (doctor, nurse, midwife), teacher, contract employee, honorary employee, non-civil servant government employee, researcher, honorary employee, and finance administrator.

Table 2 explains information about descriptive results of the mother's COVID-19 risk. Most of the mothers (89.7%) and other household members

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(83.2%) never had any symptoms of COVID-19, such as a new continuous cough and/or a high temperature. The COVID-19 test result was the past or current test result of the mother. In this study, from 262 mothers, 3.8% ever tested positive for COVID-19, 26.0 % ever tested negative for COVID-19, and 70.2% never been tested for COVID-19. Moreover, 41.2% of the mother ever recommended to stay at home from public health services due to certain conditions that put mothers at high risk of COVID-19.

Table 2. Mother's COVID-19 Risk (N=262)

COVID-19 Risk	n (%)
Had COVID-19 sympton	
Yes	27 (10.3)
No	235 (89.7)
Tested for COVID-19	
Yes, ever tested positive	10 (3.8)
Yes, ever tested negative	68 (26.0)
No	184 (70.2)
Recommended to stay at home from Public health services due to certain conditions	
Yes	108 (41.2)
No	154 (58.8)
Household member had COVID-19 symptom	
Yes	44 (16.8)
No	218 (83.2)

Table 3 explains information about descriptive results of infant and young children feeding characteristics. WHO IYCF indicators results show that from 262 children aged 6-11 months, around 94.3% were meeting minimum meal frequency (MMF), 77.1% were meeting minimum dietary diversity (MDD), and 74% were meeting minimum acceptable diet (MAD).

Table 3. Infant and Young Children Feeding Practices (N=262)

Indicator	n (%)
Meeting Minimum Meal Frequency (MMF)[a]	245 (94.3)
Meeting Minimum Dietary Diversity (MDD)[b]	195 (77.1)
Meeting Minimum Acceptable Diet (MAD)[c]	188 (74)

[a] Breastfed Children aged 6-8 months and 9-11 months who were given solid, semi-solid, or soft foods minimum 2 and 3 times in the previous day. Non breastfed children aged 6-11 months who were given solid, semi-solid, or soft foods minimum 4 times (including milk feeds at least 2 times) in the previous day.
[b] Children aged 6-11 months who were given at least 4 from 7 food groups in the previous day
[c] Children aged 6-11 months who were met minimum meal frequency and minimum dietary diversity

Table 4 shows the proportion of children's MAD based on mother's characteristics and also its association. There was a statistically significant difference in the proportion of MAD between children whose mother had middle and high-education attainment with p-value<0.001 (p–value<0.05). Mothers with middle-education attainment were having odds 3.625 times to have children that did not meet MAD compared to mothers with high-education

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attainment. The proportion of children's MAD with mothers who were not working and working was also statistically significant different, with p-value=0.008 (p –value<0.05). Mothers who were not working had odds 2.197 times to have children that not meet MAD compared to mothers who were working. Meanwhile, there were no statistically difference in MAD proportion between mother's age, marital status, mother's risk of COVID-19, and geographical location.

Table 4. Association of Maternal Attributes and MAD (N=262)

Variables	MAD		Total	*p –value*	Crude OR (CI 95%)
	Not Meet n (%)	Meet n (%)			
Mother's age					
<25 y.o	10 (38.5)	16 (61.5)	26	0.125 [a]	1.918 (0.825 – 4.460)
≥25y.o	58 (24.6)	178 (75.4)	236		1
Mother's education level					
Middle	20 (50.0)	20 (50.0)	40	<0.001[a]	3.625 (1.805 – 7.280)
High	48 (21.6)	174 (78.4)	222		1
Mother's occupation					
Not working	46 (32.6)	95 (67.4)	141	0.008 [a]	2.197 (1.291 – 3.895)
Working	22 (18.2)	99 (81.8)	121		1
Marital status					
Single parent	2 (66.7)	1 (33.3)	3	0.166 [b]	5.848 (0.525 – 65.553)
Married	66 (25.5)	193 (74.5)	259		1
Mother's risk of COVID-19					
At risk	32 (26.2)	90 (73.8)	122	0.952[a]	1.017 (0.585 – 1.770)
No risk	36 (25.9)	103 (74.1)	139		1
Geographical location					
Outside Java	12 (32.4)	25 (67.6)	37	0.322 [a]	1.449 (0.683 – 3.072)
Java	56 (24.9)	169 (75.1)	225		1
Total	68 (26.0)	194 (74.0)	262		

[a] Chi-Square Test
[b] Fisher's Exact test

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DISCUSSIONS

In this study, around 74% of the children age 6-11 months were given food following the requirements of a MAD. MAD is a composite indicator of minimum dietary diversity (MDD) and minimum meal frequency (MMF) which in this study also found high number of children age 6-11 months meeting MDD (77.1%) and MMF (94.3%). The MAD in this study was found higher compared to another Indonesian national survey from DHS 2017 that the prevalence of MAD was only 26% which consists of 72% MMF and 29,8% MDD [7]. Similar number was found from study in Vietnam 70.9%, 82.6%, and 94.4% meet MAD, MDD, MFF [15]. Higher number found in Kenya that found 85% of the children aged 6-11 months received MAD [16]. The higher number of MAD, MMF, and MDD in this study from a national survey in Indonesia and also another study might because of a different situation, characteristics of the respondent, and the nature of the online survey itself. The use of an online survey might only can be accessed by an individual that has internet skills, literate, and has a greater interest in this topic [17]. Mothers in this study were dominated with at least diploma graduates and had middle to high household income which might not as representative as the national survey. Stay at home order during COVID-19 also might had positive influence to infant feeding practices. One mother mentioned about can cook more varied food due to had more time at home. Stay at home policy also could increase partner support for child caring and infant feeding [18]. Study in Saudi Arabia, Turkey, and UK also reported high attention to children nutrition from their parents during COVID-19 pandemic where most of the food were prepared at home and unprocessed [19].

In this study, we found that 46.6% of the mothers were at risk of COVID-19 that included either the mother had one or more of these conditions such as she ever had any COVID-19-symptoms, ever tested positive of COVID-19, or recommended to stay at home with public health authorities due to high risk of COVID-19. From 262 mothers, only 10.3% and 3.8% ever had COVID-19-symptoms and tested positive for COVID-19. From 262 mothers, only 10.3% and 3.8% ever had COVID-19-symptoms and tested positive for COVID-19. A study among pregnant and lactating women in Belgium also found that only 0.3% of respondents ever tested positive for COVID-19. The study indicated that pregnant women were more likely to not contract COVID-19. This might be due to additional restrictions on themselves during the lockdown to reduce the risk of infection [20].

In this study, 41.2% of the mother ever recommended to stay at home from public health services due to certain conditions that put mothers at high risk of COVID-19. The COVID-19 higher risk group might included elderly, pregnant mothers, had comorbidities, had economical and psychological difficulties during this pandemic [21,22].

Finding of this study found there was no relationship between mother's risk of COVID-19 and child's MAD. This might be explained by the open answer of some mothers who had a symptom or tested positive of COVID-19 asked for other family member assistance to prepare the food and feed the child as their coping strategies in maintaining child's diet. A qualitative study in Rwanda also found a similar finding that during exceptional circumstances such as illness, father or other family members can help to prepare the food [23]. Moreover, no association was found between mother's marital status and child's MAD. A study in southern Benin,

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Indonesia, also showed no significant association between marital status of the mother and MAD [24,25]. This might due to most of the single mothers was living with their family rather than alone that might help with child feeding. Furthermore, no association was found between mother's age and child's MAD. In line with this study, another study found no association between maternal age and complementary feeding practices [26]. The geographical location was also not significantly associated with child's MAD. This finding is not in line with other study in Indonesia [25].

This study found that working mothers were more likely of having a child that meeting MAD compared to non-working mothers. In line with this finding, a study in Indonesia and Pakistan also found the association between mother's working status and child's MAD which mother whose working were more likely to feed their children in accordance to MAD [25,27,28]. Mother who was working might have better income that can contribute to infant feeding practices [28]. This pandemic situation could also be an opportunity for working mothers to work at home and feed their children directly. Moreover, mother's education and child's MAD were found to be associated, which mothers with middle education attainment were more likely to have children that did not meet MAD compared to mothers with high educational attainment. This finding also consistent with another studies conducted in Indonesia and Southern Ethiopia [25,29]. The explanation of the association could be that educated mothers have better knowledge and were more likely to implement the information in form of feeding practices [30]. In some context, better education also leads to a higher chance to gain income that relates to purchasing power of nutritious food.

This study found nonworking and lower education mothers were more likely not to give the children food that accordance with MAD. The results indicate a need for future nutrition intervention to improve infant feeding practices for nonworking and lower education mothers. The design of nutrition intervention could be in form of nutrition promotion through education that considers low mother's education level. Moreover, increased food accessibility and availability for nonworking and low education mother should be taken into account as the problem might be limited resources such as lower household income [31].

To our knowledge, this study was among the first studies in Indonesia that assessed complementary feeding practices based on WHO indicators during COVID-19 pandemic. The result of this study can be used for a policy discussion to improve complementary feeding practices during COVID-19 pandemic or other similar conditions. However, the characteristics of the subjects in this study may not represent all mothers in Indonesia. The online survey employed in the present study may involve a selection bias causing the homogeneity of recruited subjects, which characterized by mid-high socio-economic level and domination of Java Island place of origin. This study also may not cover the population who were illiterate and did not have an internet connection. Nevertheless, in effort to improve the coverage of more diverse subjects, we announced and distributed the survey invitation a wider community using various networks such as mother and baby communities and also from mouth to mouth.

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CONCLUSION AND RECOMMENDATION

This study found that mother's educational level and occupation were both associated with MAD of the children. About one-third of the children did not fulfill the recommendation of frequency or variety of food, hence mothers need to be more aware about complementary feeding recommendation in Indonesia. Conducting nutrition intervention programs that educate and enhance accessibility and availability of food, especially for not working and high school or lower educational level mothers should be a focus for future nutrition interventions.

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REFERENCES

1. Black RE, Allen LH, Bhutta ZA, Caulfield LE, Onis M de, Ezzati M, et al. Maternal and child undernutrition: global and regional exposures and health consequences. The Lancet. 2008 Jan 19;371(9608):243–60.

2. Kemenkes Kesehatan RI. Hasil utama RISKESDAS 2018. Jakarta: Badan Penelitian & Pengembangan Kesehatan Kemenkes RI; 2018.

3. Badan Perencanaan Pembangunan Nasional. Rencana pembangunan jangka menengah nasional (RPJMN) 2020-2025 [Internet]. 2019 [cited 2020 Aug 27]. Available from: https://www.bappenas.go.id/files/Narasi%20Rancangan%20Awal%20RPJMN%202020-2024.pdf

4. World Health Organization. Indicators for assessing infant and young child feeding practices: part 2: measurement. 2010;

5. Dewanti JA. Agreement Between Minimum Acceptable Diet and The Adequacy of Nutrient Intake Among Children Aged 6-23 Months in Bekasi Municipality, West Java Province, Indonesia [Master Thesis]. Universitas Indonesia; 2014.

6. Marriott BP, White A, Hadden L, Davies JC, Wallingford JC. World Health Organization (WHO) infant and young child feeding indicators: associations with growth measures in 14 low- income countries. Maternal & child nutrition. 2012;8(3):354–70.

7. National Population and Family Planning Board - BKKBN, Statistics Indonesia - BPS, Ministry of Health - Kemenkes, ICF. Indonesia Demographic and Health Survey 2017. Jakarta: BKKBN, BPS, Kemenkes, and ICF.; 2018 Sep.

8. White JM, Bégin F, Kumapley R, Murray C, Krasevec J. Complementary feeding practices: Current global and regional estimates. Maternal & Child Nutrition. 2017;13(S2):e12505.

9. Egayanti Y, Palupi NS, Prangdimurti E. Profile of complementary food consumption during the first year of life based on Indonesia Individual Food Consumption Survey 2014. Malaysian Journal of Nutrition. 2018;24(1):9.

10. Blaney S, Februhartanty J, Sukotjo S. Feeding Practices among Indonesian Children above Six Months of Age: A Literature Review on Their Potential Determinants (Part 2). Asia Pacific Journal of Clinical Nutrition. 2015 Jan 1;24(1).

11. Udoh EE, Amodu OK. Complementary feeding practices among mothers and nutritional status of infants in Akpabuyo Area, Cross River State Nigeria. Springerplus. 2016 Dec 5;5(1).

12. Agbadi P, Urke HB, Mittelmark MB. Household food security and adequacy of child diet in the food insecure region north in Ghana. Renzaho AMN, editor. PLoS ONE. 2017 May 11;12(5):e0177377.

13. Vazquez-Vazquez A, Dib S, Rougeaux E, Wells JC, Fewtrell M. The impact of the Covid-19 lockdown on the experiences and feeding practices of new mothers in the UK: Preliminary data from the COVID-19 New Mum Study. Pediatrics; 2020 Jun.

14. Anato A, Baye K, Tafese Z, Stoecker BJ. Maternal depression is associated with child undernutrition: A cross- sectional study in Ethiopia. Maternal & Child Nutrition. 2020 Jul 1;16(3).

15. Hajeebhoy N, Nguyen PH, Tran DT, Onis M de. Introducing infant and young child feeding indicators into national nutrition surveillance systems: lessons from Vietnam. Maternal & Child Nutrition. 2013;9(S2):131–49.

16. Macharia TN, Ochola S, Mutua MK, Kimani-Murage EW. Association between household food security and infant feeding practices in urban informal settlements in Nairobi, Kenya. J Dev Orig Health Dis. 2018 Feb;9(1):20–9.

17. Andrade C. The Limitations of Online Surveys. Indian Journal of Psychological Medicine. 2020 Nov 1;42(6):575–6.

18. Brown A, Shenker N. Experiences of breastfeeding during COVID-19: Lessons for future practical and emotional support. Maternal & Child Nutrition. 2021;17(1):e13088.

19. Bahatheg RO. Young Children's Nutrition During the COVID-19 Pandemic Lockdown: A Comparative Study. Early Childhood Educ J. 2021 Apr 28;

20. Ceulemans M, Verbakel JY, Van Calsteren K, Eerdekens A, Allegaert K, Foulon V. SARS-CoV-2 Infections and Impact of the COVID-19 Pandemic in Pregnancy and Breastfeeding: Results from an Observational Study in Primary Care in Belgium. Int J Environ Res Public Health. 2020 Sep;17(18).

21. Kemenkes Kesehatan RI. Keputusan Menteri Kesehatan Republik Indonesia Nomor HK.01.07/Menkes/413/2020 Tentang Pedoman Pencegahan dan Pengendalian Coronavirus Disease 2019 (COVID-19) [Internet]. 2020 [cited 2021 Sep 2]. Available from: https://infeksiemerging.kemkes.go.id/download/KMK_No._HK.01.07-MENKES-413-2020_ttg_Pedoman_Pencegahan_dan_Pengendalian_COVID-19.pdf

22. The Lancet. Redefining vulnerability in the era of COVID-19. Lancet. 2020;395(10230):1089.

DOI: http://dx.doi.org/10.21776/ub.ijhn.2021.008.02.2

23. Ahishakiye J, Bouwman L, Brouwer I, Matsiko E, Armar - Klemesu M, Koelen M. Challenges and responses to infant and young child feeding in rural Rwanda: a qualitative study. Journal of Health, Population and Nutrition. 2019 Dec 12;38:43.

24. Mitchodigni IM, Amoussa Hounkpatin W, Ntandou-Bouzitou G, Avohou H, Termote C, Kennedy G, et al. Complementary feeding practices: determinants of dietary diversity and meal frequency among children aged 6–23 months in Southern Benin. Food Sec. 2017 Oct 1;9(5):1117–30.

25. Ng CS, Dibley MJ, Agho KE. Complementary feeding indicators and determinants of poor feeding practices in Indonesia: a secondary analysis of 2007 Demographic and Health Survey data. Public Health Nutr. 2012 May;15(5):827–39.

26. Ahmad A, Madanijah S, Dwiriani CM, Kolopaking R. Pengetahuan, sikap, motivasi ibu, dan praktik pemberian MP-ASI pada anak usia 6-23 bulan: studi formatif di Aceh. Jurnal Gizi Klinik Indonesia. 2019 Jul 27;16(1):1–13.

27. Puspitasari MD, Gayatri M. Indonesia Infant and Young Child Feeding Practice: The Role of Women's Empowerment in Household Domain. Global Journal of Health Science. 2020 Jul 13;12(9):p129.

28. Khan GN, Ariff S, Khan U, Habib A, Umer M, Suhag Z, et al. Determinants of infant and young child feeding practices by mothers in two rural districts of Sindh, Pakistan: a cross-sectional survey. International Breastfeeding Journal. 2017 Sep 16;12(1):40.

29. Kassa T, Meshesha B, Haji Y, Ebrahim J. Appropriate complementary feeding practices and associated factors among mothers of children age 6–23 months in Southern Ethiopia, 2015. BMC Pediatrics. 2016 Aug 19;16(1):131.

30. Dhami MV, Ogbo FA, Osuagwu UL, Agho KE. Prevalence and factors associated with complementary feeding practices among children aged 6–23 months in India: a regional analysis. BMC Public Health. 2019 Aug 1;19(1):1034.

31. Aemro M, Mesele M, Birhanu Z, Atenafu A. Dietary Diversity and Meal Frequency Practices among Infant and Young Children Aged 6–23 Months in Ethiopia: A Secondary Analysis of Ethiopian Demographic and Health Survey 2011. Journal of Nutrition and Metabolism. 2013 Nov 24;2013:e782931.

DOI: http://dx.doi.org/10.21776/ub.ijhn.2021.008.02.2