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Women's Empowerment and Sociodemographic Characteristics as Determinant of Infant and Young Child Feeding Practice in Indonesia

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Abstract

Proper infant and young child feeding (IYCF) practices are essential to promote child's optimum health and improve their survival. Women's empowerment is believed can mediate intra-household resources towards optimal IYCF practice. However, the evidence is limited in South-East Asia. This study was aimed to determine the association of women's empowerment and sociodemographic characteristics with IYCF practice in Indonesia. This cross-sectional study used the 2017 Indonesia Demographic and Health Survey (IDHS) data. Samples were 4,923 women of reproductive age (aged 15-49 years) whose last child was aged 6-23 months old. Multiple logistic regression was performed to determine the association of women's empowerment and sociodemographic characteristics with IYCF practice. Child's age 18-23 months old (AOR=6.58; 95% CI=5.121-8.456), husband's occupation in non-agricultural sector (AOR = 2.18; 95% CI: 1.17-4.07), the richest household (AOR=2.83; 95% CI=2.007-4.002), and high level of women's empowerment (AOR=1.311; 95% CI=1.085-1.584), significantly associated with Minimum Dietary Diversity (MDD). Living in urban residence is significantly associated with Minimum Meal Frequency (MMF) (AOR = 1.23; 95% CI=1.026-1.481). Child's age 18-23 months old (AOR=2.31; 95% CI=1.916-2.785), living in the richest household (AOR=1.46; 95% CI=1.121-1.905), in urban residence (AOR=1.224; 95% CI=1.033-1.451), and high level of women's empowerment (AOR=1.27; 95% CI=1.093-1.488), significantly associated with Minimum Acceptable Diet (MAD). While women aged 45-49 years had significant negative association with MAD (AOR=0.342; 95% CI=0.141-0.833; coef. =-1.072).

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Demographic and Health Survey; Indonesia; Infant and Young Child Feeding Practice; Sociodemographic Characteristics; Women Empowerment

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It can be concluded that women empowerment and sociodemographic characteristics are associated with IYCF practice. Therefore, enhancing women's Empowerment through health promotion is inevitable, considering their sociodemographic background.

Introduction

Appropriate nutrition is essential to support a child's health and survival. Well-nourished children were able to grow and develop optimally according to their age.[1] However, the world is still facing three faces of malnutrition which robs a child's potential growth and development. By 2020, 149.2 million children under five years old are stunted, 45.4 million are wasted, and 38.9 million are overweight.[2] The coronavirus disease 2019 (COVID-19) global pandemic and its economic fallout during 2020-2021 also significantly worsen the prevalence of childhood malnutrition. Most countries were loose track to meet nutrition targets.[3]

Indonesia is one of the developing countries currently experiencing a double burden of malnutrition.[4–6] The 2018 Indonesia Basic Health Research revealed that the proportion of wasted and stunted children is 17.7% and 30.8%. It is decreasing from 19.6% dan 37.2% by 2013. However, the decrease was too slight and needed to be accelerated. On the other hand, the proportion of overweight and the obese child continues to increase from 14.8% by 2013 to 21.8% by 2018.7,8This condition is insufficient to promote the World Health Organization (WHO) target's achievement by 2025 (20% for wasting and 40% for stunting) and Sustainable Development Goals, which targeted zero hunger by 2030.[9]

Malnutrition is directly caused by inadequate nutritional intake and infectious diseases. Indirectly, it is influenced by improper parenting styles, food insecurity, family sociodemographic characteristics (such as poverty and low education), poor sanitation and health services access, and political and cultural conditions.[10–12] Malnutrition reflects an unbalanced nutritional intake between intakes and needs.[13] Inappropriate infant and child feeding practices occur most frequently during the transition period (6-23 months), from breast milk to solid food.[14,15] If not treated immediately, malnutrition can delay children growth and development. Malnutrition is also related to a child's mental health, socioemotional behaviour, low intelligence, reduced productivity, reduced endurance, and increased morbidity and mortality.[16,17]

In most families, women are responsible for managing meals and caring for other family members, especially toddlers. Women's Empowerment is a crucial determinant so that resources owned by the family can be optimised for appropriate IYCF.18 Kabeer divides women's Empowerment into three components: resources, agency, and achievement.[19] Women who are empowered have these three things to claim the resources available in the household, have control, participate in decision making, and act following their wishes to change their lives for the better.[20]

Women's Empowerment, recently known, positively correlates with children's nutritional status.[20–24] One study in Sub-Saharan Africa mentioned the positive correlation between women's empowerment and IYCF practice.[24] However, the role of women's Empowerment as the determinant of IYCF practice among Indonesian children is still limited. Therefore, this study was aimed to determine the association of women's Empowerment and sociodemographic characteristics with IYCF practicefor 6-23 months old children in Indonesia using the 2017 IDHS data. The evidence was essential to develop a health promotion program to improve IYCF practice for 6-23 months old children and accelerate the decrease of childhood malnutrition.

Materials and Methods

This study was used across-sectional design derived from the 2017 IDHS data. In brief, the 2017 IDHS was a nationwide survey placed in 34 different provinces across Indonesia. Indonesian investigators started data collection on July 24th to September 30th, 2017, helped by the Inner-City Fund (ICF) International. Data are available for the public by registering on The Demographic and Health Survey (DHS) Program website. This study used an

individual data set. The individual recode contains information about the eligible women who completed the interview, including their characteristics, child health and nutrition, and background of husband/ spouse and respondent's work. The children's recode also included information about under five-year-old children.

The 2017 IDHS successfully interviewed 49,627 women of reproductive age (aged 15-49 years). This study only uses data from women of reproductive age (aged 15-49 years), whose last child was 6-23 months old, and complete data records. There were 4,923 samples included.

The 2017 IDHS useda stratified two-stage sampling method. In stage one, several census clusters were selected using a systematic sampling proportional to size it was then stratified by urban and rural areas, sorted by wealth index category. Stage two, 25 common households in each selected census cluster, were selected using systematic sampling after updating the household list. There were 1,970 census clusters in urban and rural areas across Indonesia, with 49,250 eligible households and 59,100 women (15-49 years old) were expected to respond.[25]

This study's dependent variable is an IYCF practice performed by the reproductive age of women (15-49 years old) to their youngest child (6-23 months old). There was three indicators for assessing IYCF practice as recommended by WHO, which were mentioned as follows: minimum dietary diversity (MDD), minimum meal frequency (MMF), and minimum acceptable diet (MAD). The standard recodes manual for DHS 7 was used to determine each indicator.[26] The MDD was defined as food received by 6-23 months old children in the last 24 hours before the interview. Children should receive at least four from seven food groups, including grains, roots and tubers; legumes and nuts, dairy products, flesh foods, eggs, vitamin-A rich fruits and vegetables and other fruits and vegetables. The MMF was defined as a 6-23 months old child who received solid, semi-solid, or soft foods(including milk feeds for non-breastfed children) in minimum frequency in the last 24 hours before the interview, which differed by child's age and their breastfeeding status. The guide for MMF was as follows 1) a breastfed 6-9 months old child should get solid/semi-solid food at least twice a day, 2) a breastfed 9-23 months old child should get solid/semi-solid food at least three times a day, and 3) a non-breastfed 6-23 months old child should get solid/semi-solid food at least four times a day. The MAD combines MDD and MMF with different criteria between breastfed and non-breastfed 6-23 months old child.[27] Each indicator used dichotomous coded: (1) if the respondent's IYCF practice comply with the WHO guidelines and (0) if the respondents did not comply with the guidelines.[24] The instrument used was a questionnaire for women of reproductive age section 6 on child's health and nutrition.[25]

The independent variable in this study was women's Empowerment. Kabeer's define women empowerment from the three dimensions. 1) resources (education level, asset ownership, bank account ownership, and cell phone ownership), 2) agency (control of personal income, control of husband's income, and participation in decision making: significant household expenses) and 3) achievement (work status, type of work, income, and attitude towards wife-beating).[19,22,28] Each subdimension item is given a score of 1 if the respondent indicates the highest level of Empowerment and 0 if the respondent indicates a lower level of Empowerment.[24] Each dimension score is obtained from the subdimensions' total—the maximum scores for the resources dimension 4, agency 3, and achievement 4. Next, the dimension scores are added to determine the women's empowerment score (range of values 0-11). Determination of respondents having a high or low level of Empowerment is assessed by comparing the total score of women's Empowerment with the mean of the entire sample. Respondents with a total score ≥mean are classified as having high women's Empowerment, while those with a total score <mean have low women's Empowerment. The instrument used was the 2017 IDHS questionnaire, namely: households, women of reproductive age, and currently married men.[25]

As an independent variable in the present study, sociodemographic characteristics are divided intochild, women, husband/spouse, and household characteristics. The sex and age group of the child represented child characteristics. The sex of the child has differed as male or female.[29–31] The child's age group was ranged6-11, 12-17, 18-23 months

old.[24] Women characteristics were represented by age group of women, categorised as 15-19, 20-24, 25-29, 30-34. 35-39. 40-44. 45-49 years old.[32] Husband/spouse characteristics include education level and occupation. The education level of the husband/spouse was classified as less than the primary, secondary or higher level of education.[33] Husband/spouse's occupation was divided into did not work, agriculture worker, or others.[29] Household characteristics were represented by the number of under five-year-old children in the household, wealth index, and residence place. The number of children under five years old was classified as ≤1 or≥2 children.[34] The household's wealth index is scored from the number of assets owned, housing characteristics, source of drinking water, toilet facilities, and other wealth status indicators (BKKBN, 2018). Based on DHS 7, the wealth index was classified as poorest, poorer, middle, richer, richest.[35,36] Place of residence was categorised into an urban or rural area.[24,29,35]

There were several independent datasets in the 2017 IDHS survey, including household's, individual's, and children's recode. These different files were merged to build the data set for analysis. Then, data cleaning is performed. Incomplete data were deleted. So, a valid result can be obtained. Bivariate analysis using chi-square (level of significance 95%) will be performed to determine the association of women empowerment and sociodemographic characteristics with IYCF practice and the Odds Ratio (OR). A Multiple Logistic Regression was used to perform multivariate analysis. Variable with p-value 0.05 and 95% CI were significantly associated with IYCF practice.

The DHS survey and its procedures were reviewed and granted by The ICF Institutional Review Board (IRB). Additionally, the 2017 IDHS protocols are also ethically reviewed by the Ministry of Health of Indonesia. Consent was collected from all respondents before the interview. When downloading the dataset, personal identity was excluded to maintain the confidentiality of the respondent's data.

Results

A total of 4,923 respondents were included in the statistical analysis. Table 1 shows the distribution of respondents' characteristics. The child's characteristics showed that 51.94% of children were male, and 35.48% were 12-17 months old. Women's characteristics showed that 26.28% of respondents were aged 25-29 years, had a husband/spouse who attained secondary or higher educational level (73.25%) and worked in the non-agricultural sector (77.71%). Household characteristics showed that 70.61% of respondents had less than one child under five years, 21.28% lived in richer wealth index quintile households, and 50.73% lived in an urban residence. Half of the respondents have a low level of women's Empowerment (50.02%). The distribution of three indicators of IYCF practice showed that the majority of children met MDD (77.45%), MMF (66.67%), and MAD (53.93%).

Table 1: The distribution of respondent's characteristics

Variables	n=4,923	%
Sex of child		
Male	2557	51.94
Female	2366	48.06
The age group of children		
6-11 months old	1637	33.26
12-17 months old	1747	35.48
18-23 months old	1539	31.26
The age group of women		
15-19 years old	160	3.25

20-24 years old	941	19.11
25-29 years old	1294	26.28
30-34 years old	1287	26.15
35-39 years old	900	18.29
40-44 years old	294	5.98
45-49 years old	47	0.93
The education level of husband/spouse		
Less than primary or primary	1317	26.75
Secondary or higher	3606	73.25
Occupation of husband/spouse		
Did not working	45	0.91
Agricultural worker	1053	21.38
Others	3825	77.71
Number of children under five years old in the household		
≤1	3476	70.61
≥ 2	1447	29.39
Wealth index		
Poorest	957	19.44
Poorer	978	19.86
Middle	959	19.47
Richer	1047	21.28
Richest	982	19.95
Place of residence		
Urban	2426	49.27
Rural	2497	50.73
Women's empowerment level		
Low	2462	50.02
High	2461	49.98
MDD		
No	1110	22.55
Yes	3813	77.45
MMF		
No	1587	32.23
Yes	3336	66.67
MAD		
No	2269	46.08
Yes	2654	53.93

The distribution of family socio demographic characteristics and women empowerment based on IYCF practice are presented in Table 2. It is shown that the percentage of children who met MDD was high in the following group female children (78.92%), aged 18-23 months old (88.87%), children of women aged 25-29 years old (78.82%) whose husband/spouse had a secondary or higher level of education (79.85%) and worked in the non-agricultural sector (79.83%), with the number of children under five years old in the household were ≤1 (78.76%), from the richest wealth index (86.95%), living in the urban residence (81.38%), and had a high level of women empowerment (81.98%). Table 2 also shows that the percentage of children who met MMF was high in the following group male children (68.49%), aged 6-11 months old (68.52%), children of women aged 20-24 years old (70.50%) whose husband/spouse had a secondary or higher level of education (68.57%) and worked in the agricultural sector (68.73%), with the number of children under five years old in the household were ≥2 (69.11%),

from the richest wealth index (70.89%), living in the urban residence (69.67%), and had a high level of women empowerment (69.18%). It is shown that the percentage of children who met MAD was high in the following group female children (54.04%), aged 18-23 months old (61.26%), children of women aged 25-29 years old (56.04%) whose husband/spouse had a secondary or higher level of education (56.18%) and did not working (57.06%), with the number of children under five years old in the household were ≤1 (54.28%), from the richest wealth index (62.82%), living in the urban residence (57.93%), and had a high level of women empowerment (58.29%).

Table 2: Distributions of family sociodemographic characteristics and women empowerment based on IYCF practices

Variables	MDD				MMF				MAD			
	No		Yes		No		Yes		No		Yes	
	n	%	n	%	n	%	n	%	n	%	n	%
Sex of child												
Male	611	23.91	1946	76.09	806	31.51	1751	68.49	1181	46.18	1376	53.82
Female	499	21.08	1867	78.92	781	33.00	1585	67.00	1087	45.96	1279	54.04
Age groups of child												
6-11	697	42.57	940	57.43	515	31.48	1122	68.52	953	58.20	684	41.80
12-17	242	13.84	1505	86.16	579	33.15	1168	66.85	719	41.18	1028	58.82
18-23	171	11.13	1368	88.87	492	31.99	1047	68.01	596	38.74	943	61.26
Age groups of women												
15-19	47	29.68	113	70.32	53	32.89	107	67.11	84	52.54	76	47.46
20-24	220	23.35	721	76.65	278	29.50	663	70.50	420	44.60	521	55.40
25-29	274	21.18	1020	78.82	410	31.70	884	68.30	569	43.96	725	56.04
30-34	276	21.47	1011	78.53	408	31.72	879	68.28	585	45.46	702	54.54
35-39	207	22.99	693	77.01	322	35.81	578	64.19	436	48.41	464	51.59
40-44	71	24.27	223	75.73	94	31.95	200	68.05	142	48.44	152	51.56
45-49	14	30.79	33	69.21	22	46.16	25	53.84	33	70.11	14	29.89
The education level of husband/spouse												
Less than primary	384	29.14	933	70.86	453	34.40	864	65.60	688	52.26	629	47.74
Secondary or higher	727	20.15	2879	79.85	1133	31.43	2473	68.57	1580	43.82	2026	56.18
Occupation of husband/spouse												
Did not working	15	34.37	30	65.63	15	33.22	30	66.78	19	42.94	26	57.06
Agriculture worker	323	30.69	730	69.31	329	31.27	724	68.73	523	49.69	530	50.31
Others	772	20.17	3053	79.83	1242	32.48	2583	67.52	1726	45.12	2099	54.88
Number of children under five years old in the household												
≤1	738	21.24	2738	78.76	1140	32.79	2336	67.21	1589	45.72	1887	54.28
≥2	372	25.71	1075	74.29	447	30.89	1000	69.11	679	46.93	768	53.07
Wealth index												
Poorest	311	32.54	646	67.46	311	32.51	646	67.49	497	51.98	460	48.02
Poorer	265	27.11	713	72.89	316	32.31	662	67.69	484	49.53	494	50.47
Middle	222	23.10	737	76.90	316	32.96	643	67.04	449	46.81	510	53.19
Richer	184	17.58	863	82.42	357	34.14	690	65.86	473	45.14	574	54.86
Richest	128	13.05	854	86.95	286	29.11	696	70.89	365	37.18	617	62.82
Type of place of residence												
Urban	452	18.62	1974	81.38	736	30.33	1690	69.67	1021	42.07	1405	57.93

Rural	658	26.37	1839	73.63	851	34.07	1646	65.93	1248	49.97	1249	50.03
Women's empowerment level												
Low	667	27.08	1795	72.92	828	33.63	1634	66.37	1242	50.44	1220	49.56
High	443	18.02	2018	81.98	758	30.82	1703	69.18	1026	41.71	1435	58.29

Table 3 shows the age group of children, occupation of husband/spouse, household wealth index, and the level of women's Empowerment significantly associated with MDD. This study revealed that 18-23 months old children had 6.58 times higher odds of meeting MDD than 6-11 months old (AOR=6.58; 95% CI=5.121-8.456). Children of women whose husband/spouse worked in the non-agricultural sector had 2.18 times the odds of delivering MDD than those whose unemployed husbands (AOR = 2.18; 95% CI: 1.17-4.07). Children of women from the wealthiest quintile increase the odds of meeting MDD 2.83 times compared to those from the lowest quintile (AOR=2.83; 95% CI=2.007-4.002). Children of women with a high level of women empowerment are more likely to achieve MDD 1.31 times higher than women with low empowerment levels (AOR=1.311; 95% CI=1.085-1.584).

Table 3: The association of women's Empowerment and sociodemographic characteristics with IYCF practices

Variables	**MDD**		**MMF**		**MAD**	
	OR (95% CI)	**p-value**	**OR (95% CI)**	**p-value**	**OR (95% CI)**	**p-value**
Sex of child						
Male						
Female						
The age group of children						
6-11	Ref				Ref	
12-17	5.205 (4.188-6.467)	0.000			2.067 (1.743-2.450)	0.000
18-23	6.581 (5.121-8.456)	0.000			2.310 (1.916-2.785	0.000
The age group of women						
15-19						Ref
20-24					1.172 (0.756-1.819)	0.478
25-29					1.111 (0.726-1.699)	0.627
30-34					1.015 (0.661-1.559)	0.944
35-39					0.875 (0.563-1.359)	0.552
40-44					0.870 (1.536-1.412)	0.573
45-49					0.342 (0.141-0.833)	0.018
The education level of husband/spouse						
Less than primary or primary						
Secondary or higher						

Occupation of husband/spouse						
Did not working		Ref				
Agricultural worker	1.726	0.096				
	(0.907-3.283)					
Others	2.176	0.015				
	(1.165-4.067)					
Number of children under five years old in the household						
≤1						
≥ 2						
Wealth index						
Poorest		Ref				Ref
Poorer	1.213	0.147			1.021	0.854
	(0.934-1.576)				(0.819-1.273)	
Middle	1.482	0.009			1.087	0.495
	(1.104-1.989)				(0.855-1.383)	
Richer	1.979	0.000			1.092	0.494
	(1.459-2.683)				(0.848-1.407)	
Richest	2.834	0.000			1.461	0.005
	(2.007-4.002)				(1.121-1.905)	
Place of residence						
Urban			1.233	0.025	1.224	0.020
			(1.026-1.481)		(1.033-1.451)	
Rural				Ref		Ref
Women's empowerment level						
Low		Ref				Ref
High	1.311	0.005		1.275		0.002
		(1.085-1.584)		(1.093-1.488)		

As present in Table 3, the only place of residence which significantly associated with MMF. Children of women living in an urban area have 1.23 times the odds of achieving MMF than those living in rural areas (AOR = 1.23; 95% CI=1.026-1.481).

The age group of children, age group of women, wealth index, place of residence, and women empowerment level were significantly associated with MAD. Children between 18 and 23 months of age have higher odds of meeting MAD than children between 6 and 11 months (AOR=2.31; 95% CI=1.916-2.785). Children of women with high empowerment levels were 1.27 times more likely than women with low empowerment to achieve MAD (AOR=1.27; 95% CI=1.093-1.488). Children of women from the richest wealth index had 1.46 higher odds of delivering MAD than those from the lowest wealth index (AOR=1.46; 95% CI=1.121-1.905). Children of women living in an urban area had 1.22 higher odds of delivering MAD than those living in rural areas (AOR=1.224; 95% CI=1.033-1.451). Children of women aged 45-49 years had 0.34 times lower odds to meet MAD than those aged 15-19 years old (AOR=0.342; 95% CI=0.141-0.833; coef.=-1,072). See Table 3.

Discussions

Children aged 18-23 months old were more likely to meet MDD. Similarly, previous studies revealed that older age groups had attained MDD compared with the youngest age groups.[29,35] Since children's age is increasing, mothers' misconceptions that infants and younger children find difficulties swallowing and digesting a particular meal, such as animal orplant-source foods, were decreased.[37,38] Mothers were then encouraged to provide complementary feeding as suggested by WHO to their children.

This study revealed that children of women who had husbands/spouses worked in the non-agricultural field tended to receive a diversified diet. This result was in line with earlier research in Nepal that indicated that children whose father worked

as a sellerhave higher odds of meeting MDD.[39] Non-agricultural occupation linked to fixed monthly income, allowing them to afford diversified food for their child.

This present study revealed that children of women from the richest wealth index households were more likely to meet MDD. It was congruent with the previous study, which stated that mothers in wealthier households tended to give variety and healthy food to their children.[35,40] A study also reported that most families in the highest wealth index of Ethiopia feed their children with at least four food groups daily.[41] Family's ability to buy food is compulsory to achieve children's MDD.[42] Diversified food is affordable for mothers who live in the higher wealth index household.

In this study, children whose mothers had a high level of women empowerment were more likely to meet MDD. Similar to this finding, previous studies mentioned that women's empowerment was a significant positive determinant of children's dietary diversity.[35] A study from sub-Saharan Africa found that working women who were economically empowered had more control over their family finances.[24] It will increase their financial ability to access foods and distribute them to their children. Another Benin study stated that women with higher self-confidence could make better health-enhancing decisions.[43] So, they can also decide to feed their children a wider variety of food.

This study found that the children of urban women had greater odds of meeting MMF than rural women. In line with this finding, earlier research mentions that children who lived in the edge region were unmet the MMF as their mother faced economic constraints and disadvantages by the bad weather, which affected their food availability.[44] Another study conducted in Ethiopia found that urban mothers are better than rural mothers in providingMMFfor their children as recommended by WHO (AOR = 3.02; 95% CI: 1.41, 6.48).[38] Urban mothers were more likely to have a good awareness of IYCF practices to provide the recommended MMF.

Children aged 18-23 months old had a higher propensityto deliver a MAD than children aged 6-11 months old. These findings related to other studies noted that increasing a child's age is positively associated with the MAD.[45] That study revealed that the prevalence of MAD in children aged 18-23 months old was 55.2% higher than the younger age.[45] Study in the Santal community found that 58.1% fulfilment of MAD was delivered by children aged 12 to 23 months.[46] Another study stated that the factor associated with MAD was prior knowledge and experience in feeding frequency according to child's age. As the child grows older, the mother can give more varied and frequent food.[47] This study indicates that the younger child receives less than four food groups recommended by WHO and less frequent in their daily meal. It can also be affected by the lack of knowledge about diet variety and frequency based on children's age and culture in feeding practice.

The present study informed that children of women aged 45-49 years old had a lower propensity to deliver a MAD than those aged 15-19 years. The previous study using 2007 Demographic and Health Survey data revealed that only 20.3% of mothers by the age 35-49 deliver the MAD than the younger age mother.[45] Mother and father with a high level of education, informally employed mother, and listen to the radio were correlated with the achievement of MAD.[44] Older mothers with low formal education may face difficulties in using technology to access information and gain knowledge about how tofulfil their children's MAD.

This study also revealed that wealth status has a positive association with the delivery of MAD. The wealthiest family were reported as the determinant of providing MAD to the child.[48,49] The economic status that influences one's behaviour in achieving a child is MAD, especially for low-income families. Poverty may hinder a mother's ability to provide good quality food and meet children's dietary needs.[31] Targeting poor households for the national nutritional program should be considered when tailoring a proper diet for children.

This study found that urban residents had a high propensity to deliver a minimum acceptable diet than rural residents. Similarly, a previous Ethiopia study found that urban mothers had 4.8 times to deliver a MAD to their children.[49] Another study also highlighted that 6-23 months old children living in an urban area were more likely to meet the minimum acceptable diet than children living in

a rural area.[48] The urban resident might have various choices and easy access to various diets, leading to high consumption.

This study showed that children whose mothers had high empowerment levels tended to deliver a MAD than their counterparts. This finding was similar to previous studies, which stated that empowerment increase mothers' ability to provide a minimally diverse and acceptable diet to their children.[24,50] Empowerment is the maternal capabilities' domain that influences IYCF practice and child nutritional status. Empowerment provided a baseline for adaptation and refinement, which increased maternal capabilities to fulfil child nutrition and promote positive health outcomes.[50] It is also one of the critical features that facilitate intra-household resources towards the best care to improve the child's nutritional status.[51] Children whose mothers had a higher level of women empowerment might have more control and freedom in the household decision-making process regarding the child's nutrition fulfilment, which has contributed to the achievement of the child's MAD.

This study has strengths includes 1) the data used was nationally representative data, which makes the findings could be possibly generalised to the national level, 2) the instrument used was internationally standardised based on DHS phase 7 questionnaires with high validity and reliability, 4) study which examining women empowerment and IYCF practice in South East Asia setting are still lacking and 4) most published study only focusing on women empowerment and its correlation with IYCF practice, but in this study, we also measure family sociodemographic characteristics.

However, the present study had several limitations. First, data were collected using a cross-sectional approach, making it difficult to determine a cause-effect relationship. Second, IYCF practice was measured by asking the mother (women of reproductive age) to recall the child's diet in the last 24-hours before the interview, which increases the probability of information bias.

Conclusions

In summary, the current IYCF practice among 6-23 months old children in Indonesia is not yet adequate. Family sociodemographic characteristics include child's age, women's age, occupation of husband/spouse, wealth index, and residence, which remain significant factors in IYCF practice according to WHO recommendation for 6-23 months old children. This study also highlighted the significance of women empowerment for proper IYCF practice. Therefore, it is necessary to develop health promotion that empowers women as the key people responsible for their household feeding. So, their ability to manage household resources optimally to deliver IYCF as recommended by WHO for their children can be increased. Future research should also consider paternal factors, as they play a significant direct or indirect role in IYCF practice.

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Conflict of Interests

The authors declare no conflict of interest regarding this paper's research, authorship, and publication.

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