



Nutrition Intake Among Stunting Toddler in Cimahi Urban Village

Anggi Yustiani Nuryanti^{1*}, Ai Nurhayati¹, Cica Yulia¹

Program Studi Pendidikan Tata Boga, Universitas Pendidikan Indonesia, Bandung, Indonesia

Correspondence: E-mail: anggiyustiani007@gmail.com

ABSTRACTS

Stunting was a state of height/length-for-age index below minus two standard deviations based on the WHO standard. Nutritional intake is one of the factors that directly influence the incidence of stunting. This study aims to analyze nutritional intake and consumption of nutrient sources in stunting infants in Cimahi Urban-Village. The study uses a cross-sectional design with descriptive research methods. The populations are 172 stunting toddlers using random sampling area and took 64 toddlers as respondent. Data collection was done through interviews using 24-hour food recall form and food frequency questionnaire. This study was carried out on December 6, 2018 - May 14, 2019. The results showed protein intake in the age group 1-3 years categorized as mild deficit and age group 4-5 years categorized as a severe deficit. Intake of fat, carbohydrates, calcium, phosphor, iron, vitamin A and vitamin C are categorized as severe deficits. Sources of nutrients that are often consumed include eggs consumed by age groups 1-3 years 5 times/week and age groups 4-5 years 4 times/week, oil consumed 1 time/day, rice consumed 2 times/day, milk consumed by age groups 1-3 years 5 times/week and the age group 4-5 years 3 times/week, chicken consumed 3 times/week and papaya consumed once/week. The recommendation is to hold assistance for parents of stunting toddler by posyandu cadres regarding the selection of food ingredients and the portion provided to suit the nutritional adequacy of the toddler.

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1. INTRODUCTION

The success of a nation is determined by the quality of Human Resources (HR) who have good physical, mental, attitude and health conditions. The next generation of the State of Indonesia is expected to have good quality in order to be able to maintain and develop the Indonesian nation for the better in the future. Toddler is a period that determines the quality of the Human Resources (HR) produced. Toddlers need to be considered in terms of meeting nutritional needs related to toddlers being in a period of growth. If nutritional intake is not sufficient, it can result in stunted physical and intellectual growth in toddlers (Bayu & R. Bambang, 2012).

There are nutritional problems that occur in toddlers, one of which is stunting. The prevalence of stunting in Indonesia is among the highest compared to other Southeast Asian countries such as Myanmar, Vietnam, and Thailand (MCA-Indonesia, 2015). Stunting is a chronic nutritional problem caused by lack of nutritional intake in the long term and the provision of food that is not in accordance with nutritional adequacy (MCA-Indonesia, 2015). Stunting is known as nutrition based on the PB/U or TB/ index where in the anthropometric standard U of the nutritional status of children, the measurement results are at the threshold (Z-Score) < -2 SD to -3 SD (short/stunted) and < -3 SD (very short/short) (Ministry of Health RI, 2011).

Cimahi City is one of the cities that has stunting which is classified as chronic with a prevalence of 27.78% (Kamaludin, 2018). Cimahi Village is located in the Central Cimahi District, based on 2018 data, the prevalence of stunting under five is 25.82%. The results of research Uliyanti, et al. (2017) showed several factors that directly affect the incidence of stunting in toddlers including a history of infectious diseases, nutritional knowledge, levels of zi, and nutritional intake. Insufficient nutritional intake in the long term can cause stunting in toddlers. This study aims to analyze the intake and consumption of nutritional sources in stunting toddlers in Cimahi Village.

2. METHODS

This study used a cross-sectional design with descriptive research methods. The research was carried out for 5 months, starting from December 2018 - May 2019 in Cimahi Village, North Cimahi District, Cimahi City, West Java Province.

The population in the study was all toddlers aged 12 - 59 months with inclusion criteria, namely: (a) toddlers who experienced stunting, (b) toddlers aged 12-59 months, (c) toddlers living in Cimahi Village, Cimahi District. Tengah, Cimahi City, (d) parents of toddlers who are open to interviews. The exclusion criteria were: (a) stunting children under five who had infections (ARI and diarrhea) and (b) parents of children under five who were not interviewed.

Sampling used area random sampling technique with an error degree of 10% using the formula stated by Slovin, namely $n = N / (1 + N \cdot e^2)$ so that as many as 64 stunting toddlers were used as research samples. The example is divided into 12 posyandu work areas in Cimahi Village.

The data collected includes the respondent's name, age, gender, date of birth, birth weight, address, parent's occupation, parents' education, family income, and number of family members. In the process of collecting data on the height and weight of the respondents to verify the nutritional status of the respondents.

Nutritional intake is the amount of nutrients that come from food consumed in one day (Deborah et al, 2016). The nutritional intake of the respondents was measured using a food-recall sheet 2 x 24 hours through interviews. Several studies have shown that the implementation of food recall 2 times 24 hours is considered to provide a more optimal picture of nutritional intake and greater variation in relation to the respondent's daily intake (Riyadi & Sukandar, 2009). The data results are then converted into grams to be compared with better consumption and grouped into several levels of nutritional adequacy as shown in Table 1.

Nutritional consumption was obtained using a food frequency questionnaire to determine the variation, frequency, and average consumption of foodstuffs on respondents which can strengthen the results of data from food-recall 2 x 24 hours. The Food Frequency Questionnaire is a method of measuring food consumption by using a questionnaire to obtain data on the frequency with which a person consumes food and beverages (Supriasa, 2002). The food ingredients in the instrument become food ingredients per nutrient source.

Table 1. Grouping levels of nutrient consumption

level of nutrient consumption	group
< 70% AKG	High deficit
70% - 79% AKG	Midle deficit
80% - 89% AKG	Low deficit
90% - 119% AKG	fair
≥120% AKG	excess

Source: Supriasa (2002)

3. RESULTS AND DISCUSSION

Cimahi City is a city located between Bandung City and West Bandung Regency. Cimahi City was formerly part of Bandung Regency, which was later designated as an administrative city on January 26, 1976. On June 21, 2001, Cimahi was designated as an autonomous city, consisting of three sub-districts, which are further divided into 15 urban villages.

In 2018, Cimahi City was one of the cities experiencing stunting problems with a prevalence of 27.78%. One of the villages in Cimahi City, namely Cimahi Village, which is located in the Central Cimahi District, which is the research location, has a stunting prevalence of 25.82% based on the results of weighing children under five in August (2018). The number of samples used in this study were 64 toddlers with characteristics as presented in Table 2.

Table 2. Characteristics of Respondents

variable	n	%
gender		
female	20	31
male	44	69
toddler		
1-3	49	77
4-5	15	23
father's occupation		
employee	24	37
government employees	1	2
laborer	13	20

variable	n	%
self-employed	24	38
honorary teacher	2	3
Mother's occupation		
housewife	56	87
government employees	1	1
laborer	1	2
self-employed	1	2
honorary teacher	2	3
employee	3	5
Father's last education		
Elementary School	5	8
Junior High School	16	25
Senior High School	21	33
Vocational School	11	17
Technical High School	2	3
D3	2	3
S1	7	11
Mother's last education		
Elementary School	7	11
Junior High School	23	36
Senior High School	19	30
Vocational School	8	12
D1	2	3
D3	1	1
S1	3	5
S2	1	2
family socioeconomic		
high ($\geq 1.890.000$)	21	33
low ($< 1.890.000$)	43	67
number of family members		
big (≥ 4 people)	36	56
small (< 4 people)	28	44

The research sample in Cimahi Village consisted of 69% male toddlers and 31% female toddlers. This is in line with the results of Torlesse's research (2016) showing that gender can increase the risk of stunting in male toddlers 1.77 times greater than female toddlers. The nutritional adequacy rate for toddlers is divided into two groups based on the age range, namely the 1-3 year age group and the 4-5 year age group.

The research sample in Cimahi Village consisted of 77% in the 1-3 year age group and 23% in the 4-5 year age group. The average research sample is 36 months old, age range is 13 – 59 months with a value of 12.09 variations in the distribution of data. This is different from the results of Torlesse's research (2016) which states that stunting occurs more often in toddlers aged 24-59 months compared to toddlers aged 0-24 months.

Most of the fathers of the respondents worked as entrepreneurs (38%) and private employees (37%). The father's occupation of the other respondents is daily labor (20%). A small proportion of the respondents' fathers work as civil servants (2%) and honorary teachers (3%). Most of the respondents' mothers are housewives (87%). Other occupations include civil servants (1%), daily laborers (2%), self-employed (2%), honorary teachers (3%), and private employees (5%). Mother's occupation is related to the pattern of child rearing

and the economic status of the family. Mothers who work outside the home can cause children not to be cared for, because children under five are very dependent on their caregivers or other family members, but on the other hand, working mothers can help with family income, because work is an important factor in determining the quality and quantity of food (Diana, 2006).

Less than half of the respondents' father's last education was high school level (33%). The last education of the fathers of other respondents was at the elementary school (8%), junior high school (25%), vocational school (17%), high school (3%), D3 (3%) and undergraduate (11%). Based on Figure 4.5, less than half of the respondents' mothers' last education was at the junior high (36%) and high school (30%). The mother's last education of other respondents was at the elementary school (11%), vocational school (12%), D1 (3%), D3 (1%), S1 (5%) and S2 (2%).

Research by Senbanjo (2011) also supports the results of research which states that there is a significant relationship between mother's education and the incidence of stunting in toddlers. Educated mothers are more likely to make decisions that will improve the nutrition and health of their children. In addition, educated mothers tend to send all their children to school so as to break the chain of ignorance, and will be better at using strategies for the survival of their children, such as adequate breastfeeding, immunization, oral rehydration therapy, and family planning. Therefore, educating women will be a useful step in reducing the prevalence of malnutrition, especially stunting.

Socio-economic level is defined based on the gross income earned by both parents of the respondent each month. The socio-economic level is classified into two, low and high, and the limit is the Regional Minimum Wage (UMR) for the City of Cimahi in 2019. Based on the Governor's Decree Number: 561/Kep.1220-Yangbangsos/2018 UMR 2019 West Java follows Government Regulation Number 78 2015 concerning the Wage of the Cimahi City UMR is Rp 2,893,074.71 (West Java Provincial Government, 2018). To facilitate grouping, the UMR limit is rounded up to IDR 1,890,000.00.

More than half of the respondents (67%) are in families with a low socioeconomic level and 33% are in a high socioeconomic level. Fikrina (2017) in her research in Gunungkidul shows that high and low family incomes both have the risk of toddlers experiencing stunting. The socioeconomic level of the family can be seen from the income in one family. This is the basic capital towards a prosperous family, so that all families expect to get the maximum income to support their needs.

Fikawati and Shafiq (2010) stated that socioeconomic level is related to family purchasing power. The family's ability to buy food ingredients depends, among other things, on the size of the family's income, the price of the food itself, and the level of management of land and yard resources. Families with limited incomes are likely to be less likely to meet their food needs, especially to meet the nutritional needs of the child's body.

more than half (56%) of the respondents live in a large family and the others (44%) live in a small family environment. The number of family members affects the supply and distribution of food in the family. In households with relatively large number of family members, the quality of food consumption will be worse (Ariningsih and Rahman, 2008). Research by Fikadu et al, (2014) in Southern Euthopia showed that toddlers living with 5 to 7 family members had a 2.97 times greater risk of experiencing stunting than toddlers living

with 2 to 4 family members. This is caused by the lack of food availability if many people live in one house.

Table 3. Nutritional intake in stunting toddlers

variable	1 – 3	4 – 5
Protein (g)		
average intake	8.42	4.75
recommendation (AKG)	40	45
maximum	71.87	28.72
minimum	0.41	1.07
Fat (g)		
average intake	15.84	16.32
recommendation (AKG)	44	62
maximum	42.31	25.45
minimum	1.45	9.94
Carbohydrate (g)		
average intake	73.80	83.26
recommendation (AKG)	155	220
maximum	104.35	134.94
minimum	34.02	45.02
Calcium (mg)		
average intake	290.48	177.66
recommendation (AKG)	650	1000
maximum	1410.44	535.50
minimum	14.73	29.89
Phosphor (mg)		
average intake	294.29	221.36
recommendation (AKG)	500	500
maximum	1229.50	406.40
minimum	57.92	85.09
Iron (mg)		
average intake	4.01	4.12
recommendation (AKG)	8	9
maximum	10.84	7.37
minimum	0.77	1.74
Vitamin A (mcg)		
average intake	251.82	312.30
recommendation (AKG)	400	450
maximum	749.41	1001.68
minimum	21.84	120.59
Vitamin C (mg)		
average intake	8.42	4.75
recommendation (AKG)	40	45
maximum	71.87	28.72
minimum	0.41	1.07

Table 4. Nutritional intake in stunting toddlers

variable	1-3		4-5	
	n	%	n	%
Protein				
High deficit	21	43	14	93

variable	1-3		4-5	
	n	%	n	%
Midle deficit	6	12	1	7
Low deficit	9	18	0	0
fair	7	14	0	0
excess	6	12	0	0
Fat				
High deficit	46	94	15	100
Midle deficit	1	2	0	0
Low deficit	0	0	0	0
fair	2	4	0	0
excess	0	0	0	0
Carbohydrate				
High deficit	49	100	15	100
Midle deficit	0	0	0	0
Low deficit	0	0	0	0
fair	0	0	0	0
excess	0	0	0	0
Calcium				
High deficit	38	78	15	100
Midle deficit	4	8	0	0
Low deficit	1	2	0	0
fair	2	4	0	0
excess	4	8	0	0
Phosphor				
High deficit	35	71	14	93
Midle deficit	4	8	0	0
Low deficit	3	6	1	7
fair	2	4	0	0
excess	5	10	0	0
Iron				
High deficit	37	76	14	93
Midle deficit	1	2	0	0
Low deficit	7	14	1	7
fair	3	6	0	0
excess	1	2	0	0
Vitamin A				
High deficit	31	63	10	67
Midle deficit	7	14	1	7
Low deficit	3	6	2	13
fair	3	6	0	0
excess	5	10	2	13
Vitamin C				
High deficit	45	92	15	100
Midle deficit	0	0	0	0
Low deficit	1	2	0	0
fair	1	2	0	0
excess	2	4	0	0

3.1. Analysis of Protein Intake

The results showed that less than half of respondents in the age group 1-3 years (43%) and most of the age group 4-5 years (93%) were in the category of severe deficit. The recommended protein intake for toddlers aged 1-3 years is 26 grams/day and for toddlers aged 4-5 years is 35 grams/day.

The average protein intake of stunting toddlers aged 1-3 years is 21.04 grams/day with the lowest variation of protein intake being 6.36 grams/day and the highest intake being 63.28 grams/day. Meanwhile, the average protein intake of stunting toddlers aged 4-5 years is 18.10 grams/day with the lowest variation of protein intake being 8.28 grams/day and the highest intake being 25.84 grams/day.

Based on the average protein intake, respondents in the 1-3 year age group are classified as mild deficit category and those in the 4-5 year age group are classified as severe deficit category. This is in line with the results of Ayuningtyas et al.'s research. (2018) in the work area of the Sumber Urip Health Center, Rejang Lebong Regency, Bengkulu who explained that protein intake in stunting children was included in the less category. Research by [Mugianti, et al \(2018\)](#) also shows similar results, namely stunting toddlers aged 25-60 months in Sukarejo District, Blitar have low protein intake.

3.2. Fat Intake Analysis

The results showed that the fat intake of most respondents in the age group 1-3 years (94%) and all respondents in the age group 4-5 years were in the category of severe deficit. The recommended fat intake for toddlers in the age group 1-3 years based on the nutritional adequacy rate is 44 grams/day and for toddlers in the 4-5 year age group it is 62 grams/day.

The average fat intake for stunting toddlers aged 1-3 years is 15.95 grams/day with the lowest variation of fat intake being 1.45 grams/day and the highest intake being 42.31 grams/day. The level of fat intake adequacy of stunting toddlers aged 1-3 years based on the nutritional adequacy rate is 36%. While the average fat intake in stunting toddlers aged 4-5 years is 16.32 grams/day with the lowest variation of fat intake being 9.94 grams/day and the highest intake being 25.45 grams/day. The level of fat intake adequacy of stunting toddlers in the age group 4-5 years based on the nutritional adequacy rate is 26%.

Based on the average fat intake of the respondents, fat intake in stunting toddlers is in the category of severe deficit. This is different from the results of [Margawati's research \(2018\)](#) in Genuk District, Semarang, which explains that fat intake in stunting toddlers is classified as excessive. Another study explained that fat intake in stunting toddlers in Sumatra was still relatively low ([Oktarina and Trini, 2013](#)). Toddlers with low levels of fat intake are 1.31 times more likely to experience stunting than toddlers with adequate levels of fat intake. This is in line with the research of [Oktarina and Trini \(2013\)](#) in the provinces of Aceh, North Sumatra, South Sumatra, and Lampung which showed that there was a relationship between fat intake and the incidence of stunting in children under five.

3.3. Carbohydrate Intake Analysis

The results showed that the overall level of carbohydrate intake in the respondents was in the category of severe deficit. The recommended carbohydrate intake for toddlers in the 1-3 year age group based on the nutritional adequacy rate is 155 grams/day and in the 4-5 year age group it is 220 grams/day.

The average carbohydrate intake for stunting toddlers aged 1-3 years is 73.80 grams/day with the lowest variation of carbohydrate intake being 34.02 grams/day and the highest

intake being 104.35 grams/day. The level of adequacy of carbohydrate intake for stunting toddlers aged 1-3 years based on the nutritional adequacy rate is 48%. Meanwhile, the average carbohydrate intake for stunting toddlers aged 4-5 years is 83.26 grams/day with the lowest variation of carbohydrate intake being 45.02 grams/day and the highest intake being 134.94 grams/day. The level of adequacy of carbohydrate intake for stunting toddlers in the age group 4-5 years based on the nutritional adequacy rate is 38%.

The results showed that the average carbohydrate intake of the respondents belonged to the category of severe deficit. The results of [Azmy and Mundiastuti's research \(2018\)](#) in Bangkalan Regency also explained that stunting toddlers experienced less carbohydrate intake. The results of [Oktarina and Trini's \(2013\)](#) research regarding the analysis of the relationship between the level of carbohydrate consumption and the incidence of stunting, it was found that 47.2% of toddlers with low carbohydrate consumption experienced stunting. The results of research by [Ayuningtyas, et al \(2018\)](#) in the Sumber Urip work area, Rejang Lebong Regency, Bengkulu also presented similar results, namely 54.5% of stunting toddlers experienced less carbohydrate intake.

3.4. Calcium Intake Analysis

The results showed that most of the respondents in the age group 1-3 years (78%) and all respondents in the age group 4-5 years belonged to the category of severe deficit. The recommended calcium intake for toddlers in the age group 1-3 years based on the nutritional adequacy rate is 650 mg/day and for toddlers in the age group 4-5 years it is 1000 mg/day.

The average calcium intake for stunting toddlers aged 1-3 years is 290.48 mg/day with the lowest variation of calcium intake being 14.73 mg/day and the highest intake being 1410.44 mg/day. The level of adequacy of calcium intake for stunting toddlers aged 1-3 years based on the nutritional adequacy rate is 47%. While the average calcium intake in stunting toddlers aged 4-5 years is 177.66 mg/day with the lowest variation of calcium intake being 29.89 mg/day and the highest intake being 535.50 mg/day. Adequacy level of calcium intake for stunting toddlers in the age group 4-5 years based on the nutritional adequacy rate is 18%.

Based on the results of the study, calcium intake in stunting toddlers was classified as a severe deficit category. The results of research by [Sari, et al \(2016\)](#) in Pontianak City showed similar results, that calcium intake in stunting toddlers aged 24-59 months was relatively low. The results of the research by [Chairunnisa, et al \(2018\)](#) in Semarang also explained that stunting toddlers experienced a lack of calcium intake. This is in line with the research of [Deborah, et al. \(2013\)](#) Calcium intake in stunting toddlers in North Biboki, North Central Timor, East Nusa Tenggara is low.

3.5. Analysis of Phosphorus Intake

The results showed that the intake of phosphorus in more than half of the respondents in the age group 1-3 years (71%) and most of the age group 4-5 years (93%) belonged to the category of severe deficit. The recommended intake of phosphorus for stunting toddlers aged 1-3 years and 4-5 years based on the nutritional adequacy rate is 500 mg/day.

The average intake of phosphorus in stunting toddlers aged 1-3 years is 294.29 mg/day with the lowest variation of phosphorus intake being 57.92 mg/day and the lowest intake is 1229.50 mg/day. The level of adequacy of phosphorus intake for stunting toddlers aged 1-3 years based on the nutritional adequacy rate is 59%. Meanwhile, the average phosphorus intake for stunting toddlers aged 4-5 years is 221.36 mg/day with the lowest variation of

phosphorus intake being 85.09 mg/day and the highest intake being 406.40 mg/day. The level of adequacy of phosphorus intake for stunting toddlers in the age group 4-5 years based on the nutritional adequacy rate is 44%.

The results showed that the average intake of phosphorus in stunted toddlers was in the category of severe deficit. This is in line with the results of Sari (2016) research in Pontianak City which shows that phosphorus intake in stunting toddlers is lower than toddlers in general. Phosphorus intake in stunting toddlers in the city of Semarang based on the research of Chairunnisa, et al (2018) is also included in the less category.

3.6. Analysis of Iron Intake

The results showed that most of the respondents in the age group 1-3 years (76%) and the age group 4-5 years (93%) belonged to the category of severe deficit. The recommended iron intake for toddlers in the 1-3 year age group based on the nutritional adequacy rate is 8 mg/day and for toddlers in the 4-5 year age group it is 9 mg/day.

The average iron intake for stunting toddlers aged 1-3 years is 4.01 mg/day with the lowest variation of iron intake being 0.77 mg/day and the highest intake being 10.84 mg/day. The level of adequacy of iron intake for stunting toddlers aged 1-3 years based on the nutritional adequacy rate is 50%. Meanwhile, the average iron intake for stunting toddlers aged 4-5 years is 4.12 mg/day with the lowest variation of iron intake being 1.74 mg/day and the highest intake being 7.37 mg/day. The level of adequacy of iron intake for stunting toddlers in the age group 4-5 years based on the nutritional adequacy rate is 46%.

Based on the results of the study, it was shown that the average iron intake of stunting children was classified as a severe deficit. This is in line with the research results of Sulistianingsih, et al. (2013) showed that stunted toddlers tend to have lower iron intake compared to toddlers who are not stunted. This study also shows that toddlers who lack iron intake are 4.54 times more at risk of suffering from stunting when compared to toddlers who have sufficient iron intake.

3.7. Analysis of Vitamin A Intake

The results showed that more than half of the respondents in the age group 1-3 years (63%) and the age group 4-5 years (67%) belonged to the category of severe deficit. The recommended intake of vitamin A for toddlers in the 1-3 year age group based on the nutritional adequacy rate is 400 mcg/day and for toddlers in the 4-5 year age group it is 450 mcg/day.

The average intake of vitamin A in stunting toddlers aged 1-3 years is 251.83 mcg/day with the lowest variation of Vitamin A intake is 21.84 mcg/day and the highest intake is 749.41 mcg/day. The level of adequacy of vitamin A intake for stunting toddlers aged 1-3 years based on the nutritional adequacy rate is 63%. While the average intake of vitamin A in stunting toddlers aged 4-5 years is 312.30 mcg/day with the lowest variation of vitamin A intake is 120.59 mcg/day and the highest intake is 1001.68 mcg/day. The level of adequacy of vitamin A intake for stunting toddlers aged 4-5 years based on the nutritional adequacy rate is 69%.

The results showed that the average intake of vitamin A in stunted toddlers was in the category of severe deficit. This is in line with the research results of Fatimah, et al. (2018) which explains that stunting toddlers have a vitamin A deficit. Another study in Semarang showed different results that vitamin A intake in stunting toddlers was in the more category (Margawati, 2018).

3.8. Analysis of Vitamin C Intake

The results showed that the intake of vitamin C in most respondents in the age group 1-3 years (92%) and all respondents in the age group 4-5 years were classified as severe deficit category.

The average intake of vitamin C in stunting toddlers in the age group 1-3 is 8.42 mg/day with the lowest variation of vitamin C intake being 0.41 mg/day and the highest intake being 71.87 mg/day. The adequacy level of vitamin C intake for stunting toddlers aged 1-3 years based on the nutritional adequacy rate is 21%. Meanwhile, the average vitamin C intake for stunting toddlers in the 4-5 year age group is 4.75 mg/day with the highest variation in vitamin C intake. The lowest intake was 1.07 mg/day and the highest intake was 28.72 mg/day. The level of adequacy of vitamin C intake for stunting toddlers in the age group 4-5 years based on the nutritional adequacy rate is 11%.

The results showed as many as 7 stunting toddlers aged 1-3 years who did not consume sources of vitamin C. This was due to the dietary consumption pattern which only consisted of staple foods, animal and vegetable side dishes. The content of vitamin C in these foodstuffs is low and tends to be damaged during the cooking process. In addition, respondents do not consume fruit and only consume soup in vegetable dishes. So that respondents do not get vitamin C intake in a day.

The results showed that the average intake of vitamin C in stunting toddlers was in the category of severe deficit. This is in line with the results of [Bening et al. \(2016\)](#) in Semarang showed that stunting toddlers had a low intake of vitamin C. Another study in Jangli Village, Central Java also explained that the intake of vitamin C in stunting toddlers was low ([Roziqo, 2016](#)).

3.9. Consumption of Nutritional Sources

Sources of protein that are often consumed are eggs consumed by the age group 1-3 years 5 times/week the average consumption is 39.13 grams/day and the age group 4-5 years consumes eggs 4 times/week the average consumption is 33 grams/day.

Sources of fat that are rarely consumed are avocados which are consumed 1 time/month with the average consumption in the age group 1-3 years is 1.09 grams/day and in the age group 4-5 years is 2.13 grams/day.

Carbohydrate sources that are rarely consumed are cassava which is consumed 1 time/month with the average consumption for the age group 1-3 years is 2.29 grams/day and the age group 4-5 years is 2.13 grams/day.

Sources of calcium consumed are milk, fish and ice cream. The source of calcium that is often consumed is milk with a frequency in the age group of 1-3 years 5 times/week with an average consumption of 80.44 grams/day and the age group 4-5 years 3 times/week with an average consumption of 56.19 grams/day.

The source of phosphorus that is often consumed is eggs. Eggs are consumed in the 1-3 year age group 5 times/week and the 4-5 year age group consume 4 times/week. The average respondent in the age group 1-3 years consumes eggs by 39.13 grams/day and the age group 4-5 years by 33 grams/day. Fish as a source of protein, calcium and phosphorus are rarely consumed. Fish is consumed by the age group 1-3 years 1 time/month the average consumption is 2.44 grams/day and in the age group 4-5 years 2 times/month the average consumption is 4.23 grams/day.

The source of iron that is often consumed is chicken with a frequency of 3 times a week. The average consumption of chicken meat in respondents in the age group 1-3 years is 19.01 grams/day and in the age group 4-5 years is 21.24 grams/day.

Sources of vitamin A that are often consumed are eggs and milk. Chicken liver as a source of iron and vitamin A are rarely consumed. The frequency of consumption of chicken liver is 1 time / month with an average consumption of 1.31 grams per day in the 1-3 year age group and 2 grams per day in the 4-5 year age group.

The source of vitamin C that is often consumed is papaya 1 time/week with an average consumption of the age group 1-3 years at 14.27 grams/day and the age group 4-5 years at 12.57 grams/day. Sources of vitamin C that are rarely consumed are guava. The frequency of consumption of guava in the age group 1-3 years is 2 times/month the average consumption is 5.67 grams/day and the age group 4-5 years is 1 time/month the average consumption is 1.47 grams/day.

4. CONCLUSION

Intake of fat, carbohydrates, calcium, phosphorus, iron, vitamin A and vitamin C is classified as a severe deficit category. Sources of nutrients that are often consumed include eggs consumed by the age group 1-3 years 5 times/week and the age group 4-5 years 4 times/week, oil consumed 1 time/day, rice consumed 2 times/day, milk consumed by the age group 1 – 3 years 5 times/week and age group 4-5 years 3 times/week, chicken is consumed 3 times/week and papaya is consumed 1 time/week.

Recommendations to provide assistance to parents of children under five by posyandu cadres regarding the selection of food ingredients and the portion given to suit the nutritional adequacy of toddlers.

5. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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