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Prevalence of Stunting on Toddler in Puskesmas Wajak

Wika Yuli Deakandi, Anggi Gilang Yudiansyah*
Alifiani Kartika Putri, Pyarkatariana Putri Eka Pertiwi
Mayvita Muntadiroh and Firsania Bunga Wardati

Faculty of Medicine, Universitas Islam Malang, Malang, East Java, Indonesia

E-mail: 24wika.deakandi@gmail.com; anggigilang@gmail.com; alifiani.kartika@gmail.com; pyarkatariana@gmail.com; mayvitam@gmail.com; firsaniab@gmail.com

*Corresponding author details: Anggi Gilang Yudiansyah; anggigilang@gmail.com

ABSTRACT

Background: Stunting is a condition of chronic nutritional deficiency which can negative short and long-term impacts on children. Malang Regency is one of the 100 priority districts for stunting intervention in Indonesia with 27.28% stunting prevalence. Puskesmas Wajak (Community Health Center) in Malang Regency has one national stunting locus and three district stunting loci. Based on this, it is necessary to describe the incidence of stunting in the Wajak Community Health Center Work Area based on the year 2020 as the latest data. ***Methods:*** A descriptive observational with a quantitative approach study was conducted in August-September 2021 with total sampling from secondary data of stunted children aged 0-59 months in "Weighing Month" of February 2020 was 510 children and in the "Weighing Month" of August 2020 was 327 children from thirteen villages in the Puskesmas Wajak. The data was then analyzed by univariate analysis which resulted in the distribution and percentage of the nominal variables and presented in the form of narratives, tables, and graphs. Results: Based on gender, most children have stunting than severe stunting, male: female, 89%:85.7% in February and 91.6%:95% in August. Based on age, the incidence of stunting mostly happened at the age of 24-59 months (59.4% and 63.3%). ***Conclusion:*** Stunting mostly happened in males than females and at the age of 24-59 months. Based on the distribution, the highest incidence of stunting was in Blayu and Sukoanyar villages.

Keywords: stunting; children aged 0-59 month; community health center

INTRODUCTION

Stunting is a condition of chronic nutritional deficiency that will affect body length and is defined as a <-2 SD Z-score of length for age, according to the World Health Organization (WHO) Child Growth Standard [1-3]. Stunting has a short-term impact on increasing the incidence of morbidity and mortality [4]. Stunting is a more common problem than other malnutrition. In 2010 about 27% of children under five in the world suffer from this problem. Stunting comes from poverty which is certainly very influential on the quality of life of children in developing countries [5].

Children aged 0-59 months are very sensitive to the environment so that more attention is needed, especially its nutritional adequacy [6]. The problem of stunting nutrition in children aged 0-59 months can delay the child's development which will impact the next life such as intellectual decline, vulnerability to non-communicable diseases, decreased productivity to cause poverty, and the risk of giving birth to babies with low birth weight [7].

The prevalence of stunting in Indonesia over the last decade is 37% and has become one of the health problems that must be addressed [8]. Malang Regency, which is located in the Province of East Java, is one of the 100 priority districts or cities for stunting intervention in Indonesia.

According to data in the stunting summary book, the prevalence of stunting in Malang Regency over the year 2013 among children under five years was 27.28% with a total of 57,372 children [9].

Wajak Health Center is one of the health centers in Malang Regency with 13 villages included in its work area [7]. Wonoayu Village, one of the villages in Wajak Health Center's work areas, is included in the national stunting locus, while Codo Village, Bringin Village, and Dadapan Village are priority villages for stunting intervention and are district stunting loci (since 2018) [10]. The stunting loci are villages that are become a priority for stunting prevention by the decision of the local government. The selection of stunting intervention focus locations at the district or city level is based on some indicators, including the number of stunted children, the prevalence of stunting, and the poverty rate [11]. Based on this, it is necessary to describe the incidence of stunting in the Wajak Health Center Work Area based on the year 2020 as the latest data.

METHODS

Study Design

The design of this research is descriptive observational with a quantitative approach to describe the stunting incidence in children aged 0-59 months in Puskesmas Wajak.

Subjects
The target population is children aged 0-59 months, while the realizable population is children aged 0-59 months whose height is measured at the "Weighing Month" in Puskesmas Wajak in 2020.

The sample of this study used data about stunting in children aged 0-59 months at Puskesmas Wajak, which was obtained from the nutrition service unit. Sampling used is the total sampling method without being excluded. The total sampling data of stunting in children aged 0-59 months "Weighing Month" of February 2020 was 510 children and in the "Weighing Month" of August 2020 was 327 children.

Data Retrieval
The data used are secondary data taken from the nutrition service unit and the administrative division at Puskesmas Wajak. The primary data was collected two times a year in February and August through the "Weighing Month" program conducted by the Integrated Service Post for children in each village. Data collection begins with asking permission from the head of the nutrition service unit and the head of the administration section.

The data obtained were then categorized based on the World Health Organization's standardized value (Z score) of nutritional status height or length for age indicator. Severe stunting is measured by Zscore<-3, stunting is measured by Zscore -3 to <-2, and normal status to tall is measured by Zscore>-2.[4]

Outcomes
The primary outcome for this study was the description of the stunting incidence in children aged 0-59 months in Puskesmas Wajak in 2020.

Statistical Analysis
Descriptive data analysis was carried out by univariate analysis which resulted in the distribution and percentage of the nominal variables and presented in the form of narratives, tables, and graphs.

RESULTS
Stunting Incidence Based on Gender
Figures 1a and 1b showed the distribution of stunting based on gender. The Weighing months of February and August 2020 showed that most children have stunting than severe stunting, male: female, 89%:85.7% and 91.6%:95%, respectively.

Stunting Incidence Based on Age
The number of stunting incidence was 61 children aged 0-12 months, 121 children aged 12-24 months, and 267 children aged 24-59 months. Meanwhile, the number of severe stunting incidence was 10 children aged 0-12 months, 16 children aged 12-24 months, and 35 children aged 24-59 months. In the Weighing Month of August 2020, it was found that the number of stunting incidence was 69 children aged 0-12 months, 42 children aged 12-24 months, and 192 children aged 24-59 months. Meanwhile, the number of severe stunting incidence was 13 children aged 0-12 months and 11 children aged 24-59 months (figure 2a and 2b).

Distribution of Stunting Incidence
Based on able 1, the highest incidence of stunting was in Blayu Village and the lowest was in Dadapan Village. Meanwhile, the highest incidence of severe stunting was in Blayu Village and the lowest was in Wajak, Ngembal, and Sumber Putih villages, and no incidents were found in Codo, Wonoayu, and Bambang villages.

In the "Weighing Month" of August 2020 (table 2), the highest incidence of stunting was in Wajak Village and the lowest was in Wonoayu Village. Meanwhile, the highest incidence of severe stunting was in Kidangbang Village and the lowest was in Wajak, Sukolilo, Blayu, and Wonoayu villages, and no incident was found in Bambang Village. However, in Dadapan, Bringin, and Sumber Putih villages, the Integrated Service Post for children is not conducted in the "Weighing Month" of August 2020, because of the Enforcement of Restrictions on Community Activities to control the spread of a pandemic.

Percentage of Total Stunting Incidence
The percentage of stunting in the "Weighing Month" of February 2020 was 8.68% and in the "Weighing Month" of August 2020 was decreased to 6.95% (table 3). But, the percentage of the children whose height is measured against the total number of children aged 0-59 months was also decreased, in the "Weighing Month" of February 2020 was 95.93% but in the "Weighing Month of August" 2020 was 76.84%.

DISCUSSION
Based on the distribution, the highest incidence of stunting was in Blayu village by 32.98% and the lowest incidence was in Dadapan village by 2.16% in "Weighing Month" of February, meanwhile in "Weighing Month" of August the highest incidence of stunting was in Sukoanyar village by 10.04% and the lowest incidence was in Wonoayu village by 1.98%. The percentage of total stunting incidence was 8.68% in the "Weighing Month" of February and decreased to 6.95% in 2020. These results do not match with the data of national and district stunting loci. This could be caused by several factors. Wonoayu Village was one of the villages that have declared Open Defecation Free, so this can be a factor that has an impact on reducing the incidence of stunting in that village. Another factor was that some villages have closer access to rivers or streams than others, such as Dewo and Ulung Rivers in Blayu Village, Sumberputih River in Sumber Putih Village, and Sumberbambang River in Wonoayu Village. This also could be the factor that had an impact on increasing the incidence of stunting.

This study found that the highest incidence of stunting was male than female in both Weighing Month 2,4:1 and 2,6:1, respectively. This study is similar to another study that found the prevalence of stunting was higher in males than females [12,13]. male children are prone to malnutrition than female children. At the growth stage, there will be differences in growth speed and growth patterns, including gender differences which result in the possibility of stunting male gross motor development is faster and varied so it requires more energy [14,15].

In This study, the highest incidence of stunting based on age is aged 24-59 months in both "Weighing Month". For the lowest stunting incidence based on age, two "Weighing Month" had different results. In February, the lowest incidence was found in children aged 0-12 months whereas, in August, the lowest incidence was found in children aged 12-24 months. At the age of 24 months, children enter the weaning phase and also a period of high activity in exploring the surrounding environment. In addition, children's gross motor skills grow and develop rapidly. At this stage, some children will face several possibilities that cause nutritional deficiencies, such as decreased child appetite, low nutritional intake, decreased sleep hours, susceptibility to infection when mothers or caregivers pay less attention to hygiene and sanitation.

However, because stunting is a chronic nutritional problem, it can also be caused by the accumulation of risk factors that cause stunting before that age and exacerbated by being out of the span of the first 1000 days of life which is a critical period in supporting optimal growth and development [15].

A key limitation of this study was not all children aged 0-59 months came to the Integrated Service Post for children to have their height or length measured due to the pandemic conditions, and in the "Weighing Month" of August, there were several Integrated Service Post for children which were not conducted due to the Enforcement of Restrictions on Community Activities.

CONCLUSION

The incidence of stunting in children aged 0-59 months in Puskesmas Wajak based on the "Weighing Month" data in February and August 2020 was found that the incidence mostly happened in males than females and at the age of 24-59 months. Based on the distribution, the highest incidence of stunting was in Blayu and Sukoanyar villages. The percentage of total stunting incidence based on the latest "Weighing Month" was 6,95%.

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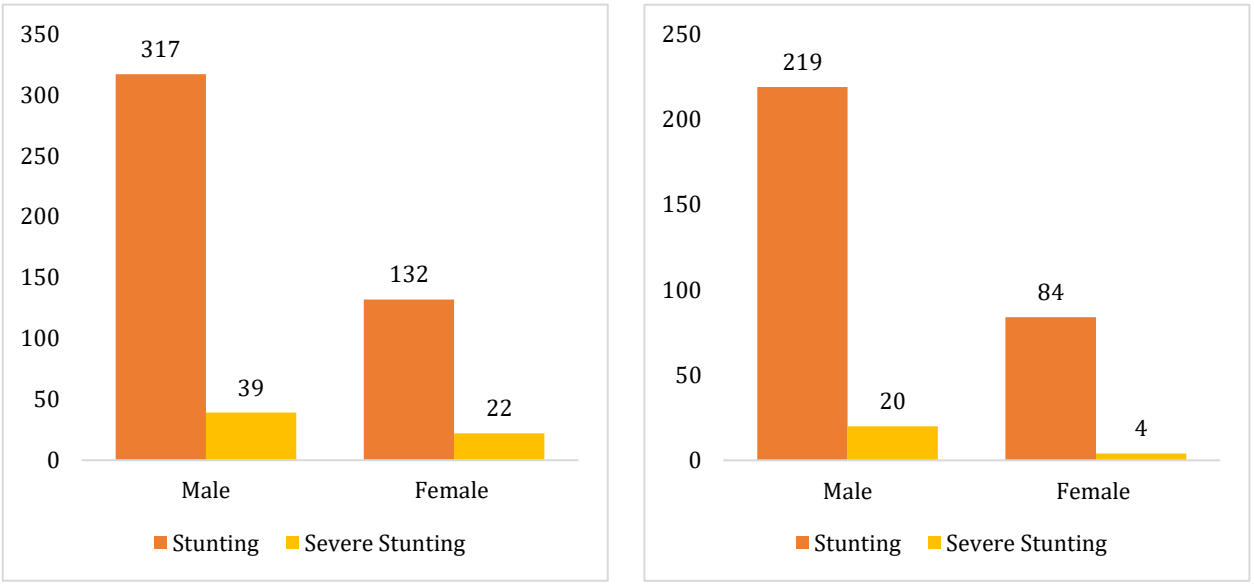
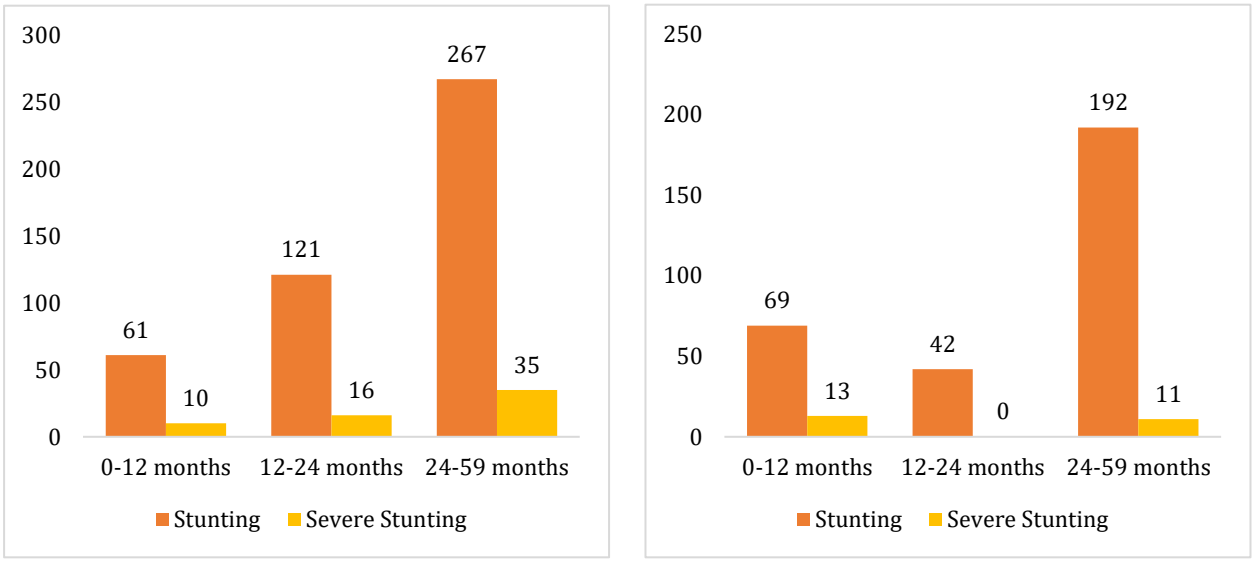


(a) (b)

FIGURE 1: Stunting Incidence by Gender, (a) February 2020, (b) August 2020



(a) (b)

FIGURE 2: Stunting Incidence by Age, (a) February 2020, (b) August 2020

TABLE 1: Distribution of Stunting Incidence in "Weighing Month" of February 2020

Work Area Villages	Children Whose Height is Measured	Stunting		Severe Stunting		Total Incidence	
		N	%	N	%	Total N	Total %
Wajak	1,022	59	5.77	1	0.10	60	5.87
Ngembal	374	19	5.08	1	0.27	20	5.35
Sukoanyar	448	59	13.17	3	0.67	62	13.84
Kidangbang	490	25	5.10	2	0.41	27	5.51
Sukolilo	431	41	9.51	3	0.70	44	10.21
Blayu	379	85	22.43	40	10.55	125	32.98
Codo	570	32	5.61	0	0.00	32	5.61
Dadapan	463	8	1.73	2	0.43	10	2.16
Bringin	461	37	8.03	3	0.65	40	8.68
Sumber Putih	350	21	6.00	1	0.29	22	6.29
Wonoayu	100	9	9.00	0	0.00	9	9.00
Bambang	300	19	6.33	0	0.00	19	6.33
Patokpicis	486	35	7.20	5	1.03	40	8.23
Total	5,874	449	7.64	61	1.04	510	8.68

TABLE 2: Distribution of Stunting Incidence in "Weighing Month" of August 2020

Work Area Villages	Children Whose Height is Measured	Stunting		Severe Stunting		Total Incidence	
		N	%	N	%	Total N	Total %
Wajak	1,022	63	6.16	1	0.10	64	6.26
Ngembal	379	22	5.80	5	1.32	27	7.12
Sukoanyar	448	43	9.60	2	0.45	45	10.04
Kidangbang	490	31	6.33	8	1.63	39	7.96
Sukolilo	467	34	7.28	1	0.21	35	7.49
Blayu	442	30	6.79	1	0.23	31	7.01
Codo	570	40	7.02	2	0.35	42	7.37
Dadapan	Integrated Service Post for children is not conducted in these villages because of the Enforcement of Restrictions on Community Activities to control the spread of a pandemic.						
Bringin							
Sumber Putih							
Wonoayu	101	1	0.99	1	0.99	2	1.98
Bambang	300	25	8.33	0	0.00	25	8.33
Patokpicis	486	14	2.88	3	0.62	17	3.50
Total	4,705	303	6.44	24	0.51	327	6.95

TABLE 3: Percentage of Stunting Incidence

Weighing Month	Total Amount of Children Aged 0-59 Months in 2020	Children Whose Height is Measured		Total Stunting Incidence		
		N	%	N	% to the total amount	% to the Children whose Height is Measured
February 2020	6,123	5874	95.93	510	8.33	8.68
August 2020		4705	76.84	327	5.34	6.95