International Journal of Public Health Excellence (IJPHE)
Vol. 3, No. 1, December 2023, pp. 108~115
Journal Homepage: https://ejournal.ipinternasional.com/index.php/ijphe
ISSN: 2809-9826, DOI: 10.55299/ijphe.v3i1.501

Prevalence of Stunted Infants and Toddlers in Sub-Urban Areas and Watersheds of Pekanbaru City

Hamidah Sari Batubara*[1] Zahtamal[2], Ridha Restila[3], Aisyah Ratu Ikhsan[4], Tia Masita Rosadi[5], Resti Palupi[6]
[2, 3, 4, 5, 6] Faculties Medicine, Universitas Riau, Pekanbaru, Indonesia
[1] STIKES Payung Negeri Pekanbaru, Indonesia

Article Info

Article history:
Received July 04, 2023
Revised July 14, 2023
Accepted July 23, 2023

Corresponding Author:
Zahtamal
Faculties Medicine, Universitas Riau, Pekanbaru, Indonesia
Email:
zahtamal@lecturer.unri.ac.id

ABSTRACT

Stunting refers to a child who is too short for his age. Based on Pekanbaru City Health Office's data, geographically Siak watershed and sub-urban areas have higher stunting cases than other areas. This study using a descriptive epidemiological study from using e-PPGBM report 2021. The results obtained were monitoring the nutritional status of children under five at the Posyandu in the area studied with complete data (Puskesmas Lima Puluh and Rumbai Bukit) are 54.8% and 12.56% respectively. The average age of stunted children in the study locations (Puskesmas Limapuluh , Rejosari and Rumbai Bukit) were 37, 38, and 29 months. Based on gender, the majority of stunted children are females. Judging from the indicators for TB/U and BB/U, most of the stunted children are in the short category and are undernourished. However, from the ratio of BB/TB, most of the stunted children have normal nutrition category.

Keywords: Prevalence, Siak River, Stunting, Watershed

1. INTRODUCTION

Stunting refers to a child who is too short for her age. Children this can suffer damage severe physical and cognitive can repaired Because accompanied stunted growth. [1-16] Stunting is a condition in which children toddlers fail to grow as a result of chronic malnutrition, particularly in the first 1,000 days of life (HPK). [2-17]

In 2017, the United Nations Children's Fund (UNICEF) stated there were 150.8 million (22.2%) children under five with worldwide stunting, with more than half located on the continent of Asia, i.e., as many as 83.6 million (12.6%). Most stunted babies in Asia are in South Asia (58.7%), followed by Southeast Asia (14.9%). [2] Indonesia is one of the five countries with the highest number of stunting toddlers, namely 7.68 million toddlers. In Indonesia, about 37% (almost 9 million) of children are experiencing stunting. [3-18]

Riskesdas 2018 shows that Indonesia still has a problem with nutrition. Trend prevalence of child and toddler shortness (*stunting*) of 36.8%, 35.6%, and 37.2% Prevalence of nutrition underweight is respectively 18.4%, 17.9%, and *19.6%.* In 2018, the proportion of toddlers with poor nutritional status and malnutrition reached 17.7% in Riau province. [4-19]

According to data from the Pekanbaru City Health Office for the year 2019, toddlers with a low nutritional status had as many as 2,714 souls, or 17.67%, followed by toddlers with a low nutritional status with as many as 587 souls, or 0.8%, and 469 under fives, or 0.6%. Based on results recapitulation of nutritional status through system online recording and reporting application nutrition-based community (e-PPGBM) aged 0-59 months in 2019 by the Pekanbaru City Health Office, percentage stunting children, namely children with very short nutritional status plus with short included ten highest, is Public health center Hill Tassel 39.4%; Fifty Health Centers 29.3%; Public health center Rejosari 27.8%; Public health center Sidomulyo RI 27%; Muara Fajar Health Center 25.5%; Public health center Melur 22%; Public health center Umbrella About 18.1%; Sail Health Center 15.8%; Inpatient Health Center Tenayan Raya 14.1%; Harapan Raya Community Health Center 13.5% among 21 working area health centers in the city of Pekanbaru.

Based on stunting data in Pekanbaru City, the highest case is seen in the district or work area of the Health Center, which is geographically near the Genre River (DAS), i.e., river Siak, and sub-urban areas. Subdistrict or work area Representative Health Center area with the people living in a suburban area, viz., Public Health Center Rumbai Bukit and the area where the people live Lots live in the area of Genre River Siak, which is Fifty Health Center and Health Center Rejosari.

Remember height stunting cases in the city of Pekanbaru, especially in sub-districts that are in suburban and close areas with the Genre Siak River (DAS), as well as the fact that Pekanbaru also became a locus of countermeasures shooting in 2021? Then you need to do a study. Know the characteristics of stunting sufferers, especially in suburban areas and near the Siak watershed.

2. METHOD

Study This is an epidemiology descriptive study using the secondary data contained within the report on the Stunting control program for the Pekanbaru City Health Service and e-PPGBM Puskesmas data for 2021. Research was done during January–October 2021 in Pekanbaru City and three health centers, namely Public Health Center Fifty, Health Center Rejosari, and Puskesmas Hill Tassel. Population study This is all the case data on stunting in children and toddlers listed inside the Pekanbaru City Health Service Stunting Control Program Report 2017–2020 and also data in e-PPGBM Puskesmas Fifty, Health Center Rejosari, and Puskesmas Hill Tassel. Sample study This is the whole population (total sampling) of Stunted sufferers recorded at the location of the research, which is as many as 77 people. Instrument study use table helps with data source from the report on the stunting control program on-site research. Variable in the study This is an incident case of stunting based on kind sex, age, regional characteristics, and nutritional status based on BB/U, TB/U, and BB/TB.

Data collection was carried out with the data of stunting sufferers recorded inside the recap stunting control program report through the e-PPGBM application. Data analysis was performed in form analysis statistics: descriptive form size tendency central, frequency and percentage, proportion, and ratio. Data is presented in the form of narrative and pictures.

3. RESULTS AND DISCUSSION

Results

Based on data processing, it is known that the prevalence of stunting toddlers in the watershed community, ie Public health center Fifty, has a number denominator of 4.63 per 100 children toddler. Next, the prevalence of children representing stunting toddlers living in suburban areas, viz., the Public Health Center Hill Tassel, with a denominator child weighed toddler, i.e., 10.56 per 100 children, also known as level participation public for come or do monitoring of nutritional

status of a child or toddler to Posyandu in the research area with complete data (Puskesmas Lima Puluh and Rumbai Bukit) are also still relatively low, namely 54.8% and 12.56%. This can be seen in Table 1 below:

Table 1 Overview of D/S Coverage and Stunting Incidents

NO	Health center name	Data Source	Amount Toddler (target)	Amount Toddler Weighed	D/S Achievement (%)	Amount Stunting Toddlers
1	Fifty	Nutritional data validation toddler July 2021	1615	885	54.80	41
2	Rejosari	Nutritional data validation toddler July 2021				21
3	Hill Tassel	Nutritional data validation toddler July 2021	1131	142	12.56	15

Based on characteristics age , children suffering from stunting at the time done research in three location ie with average age 37.48 months (standard deviation 12.70). Based on age for three The health center that became object study, found somewhat result varies, for Public health center Fifty 38 Months (minimum- maximum value i.e. 11-59 months), for Public health center Rejosari 29.8 months (standard deviation 11.5), and for Public health center Tassel Hill 35.3 months (standard deviation 10.9). Based on type gender , is known that children suffering from stunting at three location part big is manifold sex Woman namely 61%. Based on type sex stunting children for three the health center that became object study obtained same result ie part big is female, for Public health center Fifty 65.9% female, for Public health center Rejosari 57.1% women, and for Public health center Rumbai Hill 53.3% female. For characteristics age and type sex This can seen in Table 2/ figure 1 and Table 3.

Table 2 Distribution Stunting Based Toddlers Age (Month)

NO	Health center name	Amount Stunting Toddlers	Means (SD)	Median	Min	Max
1	Fifty	41	39 (13.9)	36	11	59
2	Rejosari	21	29.8 (11.5)	37	13	58
3	Hill Tassel	15	35.3 (10.9)	35	16	55

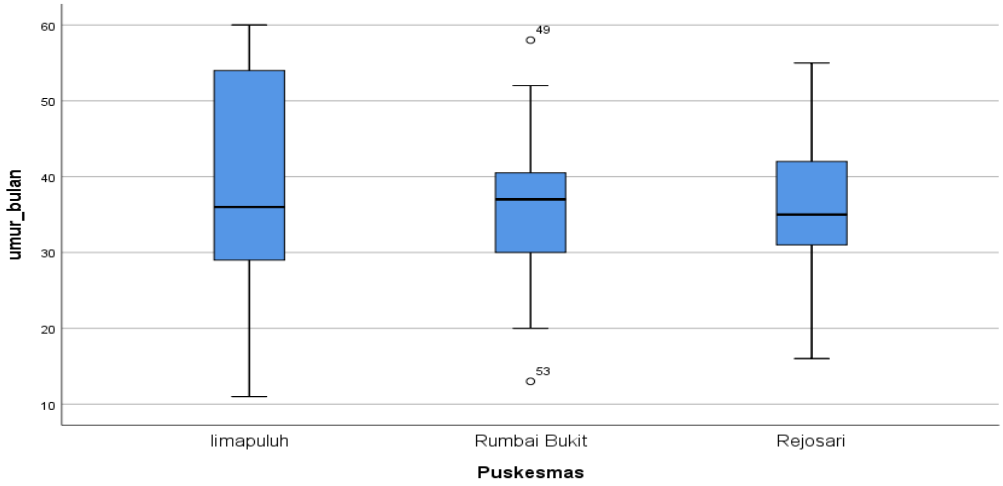

Figure 1. Age description child stunted toddler

Table 3 Distribution Stunting Based Toddlers Type Sex

No	Health center name	Amount Toddler Stunting Boys		Amount Toddler Female Stunts	
		n	%	n	%
1	Fifty	14	34,1	27	65,9
2	Rejosari	7	46,7	8	53,3
3	Hill Tassel	9	42,9	12	57,1

Based on nutritional status of children suffering from stunting, for complete and accessible data processing, it is known that For children representing stunting toddlers, watershed communities, i.e., Public health centers, Fifty, some big is short (75.6%), with Most BB/U indicators being less (51.2%) and indicators BB/TB being the most normal category at 85.3%. Next, nutritional status of children representing stunting toddlers living in suburban areas, viz., Public Health Center Hill Tassel, is in part big and short (53.3%), with Most BB/U indicators being less (46.7%), and partial weight and height indicators being big and normal (80.0%). This can be seen in Table 4 below:

Table 4 Distribution Stunting Toddlers Based on Nutritional Status

NO	Health center name	TB/U		BB/U			BB/TB	
		Very Short	Short	So lacking	Not enough	Normal	Malnutrition	Normal
1	Fifty	10 (24.4%)	31 (75.6%)	5 (12.2%)	21 (51.2%)	15 (36.6%)	6 (14.6%)	35 (85.3%)
2	Hill Tassel	7 (46.7%)	8 (53.3%)	5 (33.3)	7 (46.7%)	3 (20.0%)	3(20%)	12 (80%)

Discussion

In 2021, based on the Decree of the Minister of National Development Planning and Head of the National Development Planning Agency number Kep 42/M.PPN/HK/04/2020, the city of Pekanbaru will become the location focus (locus) of intervention-integrated stunting reduction in 2021. There are 3 working areas or areas of the health center that have a high incidence of stunting in Pekanbaru City. Based on yield data study, it is known that the highest percentage of stunting in society is in the city of Pekanbaru, where people live in suburban and regional areas.

Based on Regulation Government Republic of Indonesia Number 38 of 2011 concerning rivers (5), rivers are channels, artificial water containers, or already There is, in a manner of speaking, a network of the flow of water along with the water in it that starts from upstream until the estuary, with restricted rights and lefts by the border line. Along with time, if seen from many functions of rivers and an increasing development economy, changes in river water quality, including the Siak, occurred. He also mentioned the number of residents in Pekanbaru, particularly those living along the Siak watershed, which resulted in increased pressure on the river and the environment. Its broken upstream area river will cause damage also downstream. Upstream damage is caused, among other things, by customary and frequent society throwing away rubbish haphazardly, as happens with river water pollution and flooding. On the other hand, utilization of the river Siak For the need for bathing, washing, and toilets (MCK) is still high in society. Besides the utilization of the river for MCK, conditions in areas in this watershed are also inclined No healthy, like condition source of clean water and drinking water society that doesn't worth, as well as identical with area slum

Next, what is meant by deep suburban area study? This is an area around the center of the working city with settlements and manufacturing (factories). With the increasing amount of industry and settlements in the area outskirts of Pekanbaru City, it also raises Health problems, especially environmental health problems, such as bad quality air, pollution of groundwater, and surface water pollution, because of the more dense settlement society. This, of course, has an effect on stunting incidents.

A number of studies show a connection between sanitation and stunting incidents. Factors related to sanitation-related environments with stunting can be reviewed from the perspective of the five pillars of community-based total sanitation (STBM), viz., availability of toilets that are healthy, availability of wash hand use soap (CTPS), quality of drinking water and food, availability of security rubbish, and conditions of drainage. Habit or related PHBS with stunting can be reviewed from the aspects of habit defecation, CTPS habits, management of drinking water and

food on house stairs, security rubbish on house stairs, and security waste liquid on house stairs. [6] Already, there is a lot of research proving the connection between stunting and behavior in the public, such as in CTPS, CHAPTER habits, [7-20] management of food and drink, [8] and conditions of sanitation in the environment [9-10].

Based on characteristics of age, children suffering from stunting at the time of research in three locations had an average age of 37.48 months (standard deviation 12.70). Meaning. There are many stunting incidents found in children over two years (baduta). Research results: This is not far different from research conducted in the district of Mariso, where the age with the most stunting was found in the range of ages 12-36 months [10-21], and research in the work area of Sidemen Health Center gets that part of the big stunting sufferers are children over two years, namely 54.3%. [11-22]

Height findings Child stunting in toddlers over the age of two years naturally becomes a problem; that is, no intervention is handled or no intervention works in stunting children at this time, ages 0–24 months. Rahayu states in his thesis that a toddler with stunting at the age of 6–12 months will still experience stunting at the age of 3–4 years if no intervention is given in a timely manner. [12-23]

Based on type and gender, it is known that children suffering from stunting at three locations are of manifold sex. This finding is consistent with previous research, including research at the Sidemen Health Center, which discovered that a large proportion of Stunting sufferers are female children. [11] Research in the Puskesmas area of Kalasan, Yogyakarta, also found that the majority of stunting sufferers also vary in sex (52%). [13-24]

A number of results from other studies prove that there is no significant difference based on stunting event type and sex. Rahayu and Casnuri state the possibility that the cause is toddlers. Not yet seen a difference in speed and achievement growth between boys and girls. The difference will start to be seen when teenagers enter their teens, that is, women will more formerly experience enhancement speed growth. This makes cause boy and girls risky the same for experiencing stunting. [13]

Impact of stunting if it is not prevented and managed very well. Toddlers or Baduta who are stunted will have a low level of intelligence, making them more prone to disease and, in the future, at risk of declining in productivity. In the end, stunting areas will hinder growth in the economy, improve poverty, and widen inequality. Experience and evidence from around the world show that stunting can hinder growth in the economy and lower labor market productivity, resulting in a loss of 11% *of gross domestic product* (GDP) as well as reducing worker incomes by up to 20%. Besides that, stunting can also contribute to its widening gap and *inequality*, so subtract 10% of total revenue for lifetime living as well as cause poverty inter-generationally. Situation This, If not overcome, can affect performance. Indonesia's development is both concerned with growth in the economy and poverty and inequality. Various impacts from lack of nutrition described above, impact in form of not enough optimal quality human, can be measured from ability to reach a high level of education, low power competitiveness, and vulnerability against PTM, which is everything that leads to a decline in income and welfare for families and society. [15-25]

4. CONCLUSION

The incidence of stunting in people who live in the area of Genre River (DAS) is still high in Pekanbaru City. Prevalence of children representing stunting toddlers in watershed communities, i.e., Public health centers Fifty, with a number denominator child weighed toddler, i.e., 4.63 per 100 children toddlers, and prevalence child representing stunting toddlers people living in suburban

areas, viz., Public Health Center Tassel Hill, that is, 10.56 per 100 children toddlers. Based on their characteristics, children suffering from stunting have an average age of 37.48 months (standard deviation 12.70). Based on type and gender, it is known that children suffering from stunting at three locations are of manifold sex. Advice from the study This, among other things, is a necessity for the government city of Pekanbaru to optimize and deliver more attention to tackling stunting in nearby areas with the Genre River Siak.

ACKNOWLEDGEMENTS

We say accept great love to LPPM Riau University and Faculties Riau University Medicine who have helped finance this activity.

REFERENCE

[1] WHO. UNICEF/WHO/The World Bank Group joint child malnutrition estimates: levels and trends in child malnutrition: key findings of the 2020 edition. 2020.

[2] BAPPENAS. Decree of the Minister of National Development Planning/Head of the National Development Planning Agency Number Kep 42/M.PPN/HK/04/2020 Concerning Determination of District/City Expansion Focus Locations of Integrated Stunting Reduction Intervention in 2021. 2020.

[3] Republic of Indonesia Ministry of Health. Data and information Center. Main Topic: Situation of stunting in Indonesia. 2018.

[4] Republic of Indonesia Ministry of Health. Main results of RISKESDAS 2018. Jakarta: Ministry of Health Health Research and Development Agency. 2018.

[5] anonymous. Regulation Government Republic of Indonesia Number 38 of 2011 concerning River. 2011. Available at: http://jdih.sumselprov.go.id/userfiles/PP%20No.38%20TH%202011.pdf.

[6] Republic of Indonesia Ministry of Health. Director General of Nutrition. Balanced Nutrition Guidelines. Ministry of Health. Jakarta, Indonesia. 2014.

[7] Hafid F, Djabu U. The Effects of the SBABS Program on the Prevention of Stunting for Baduta Children in Banggai and Sigi Regencies. Indonesian Journal of Human Nutrition. 2018;4(2):79-87.

[8] Renyoet BS, Hadju V, Rochimiwati SN . Relationship between Parenting Style and Stunting Incidence in Children Aged 6-23 Months in the Coastal Area of Tallo District, Makassar City. [thesis]. Hasanuddin University: Faculty of Public Health. 2013

[9] Olo A, Mediani HS, Rakhmawati W. Relationship between water and sanitation factors and stunting in toddlers in Indonesia. Journal of Obsession: Journal of Early Childhood Education. 2020;5(2):1113-26.

[10] Wulandari WW, Rahayu F. Relationship between Environmental Sanitation and History of Infectious Diseases with Stunting Incidents in the Working Area of the Kerkap Health Center, North Bengkulu Regency, 2019. Avicenna: Scientific Journal. 2019;14(02):6-13.

[11] Khatimah K, Abbas HH, Mahmud NU, Sidid M. Characteristics of the incidence of stunting in the Mariso District, Makassar City. Window of Public Health Journal. 2020; 01(20: 141-147.

[12] Hidayat MS, Pinatih GNI. The prevalence of stunting in toddlers in the working area of the Sidemen Karangasem Health Center. 2017. Udayana medical e-journal; 6(7,): 1-5
[13] Rahayu LS. Associated height of parents with changes in stunting status from 6-12 months to 3-4 years [Thesis]: Gadjah Mada University. 2011.
[14] Rahayu PP, Casnuri. Differences in the risk of stunting by sex. Proceedings Presented at the UNRIYO National Seminar [December] [2020].
[15] The national team for accelerating poverty reduction. 100 priority districts/cities for stunting. Jakarta, Indonesia. 2017. Available at: https://www.tnp2k.go.id/images/uploads/downloads/Buku%20Ringkasan%20Stunting.pdf
[16] Pitoyo, Agus & Saputri, Agustinur & Agustina, Riska & Handayani, Tri. (2022). Analysis of Determinan of Stunting Prevalence among Stunted Toddlers in Indonesia. Populasi. 30. 36. 10.22146/jp.75796.
[17] Firmansyah, Firmansyah & Raharja, Apriadi. (2021). Quantification of Land Cover Changes in Sub-urban Areas of Pekanbaru City. IOP Conference Series: Earth and Environmental Science. 887. 012020. 10.1088/1755-1315/887/1/012020.
[18] Tahangnacca, Minsarnawati & Amiruddin, Ridwan & Ansariadi, Ansariadi & Syam, Aminuddin. (2020). Contributing Factors of Stunted Growth among Toddlers in Makassar City: A Qualitative Study. Journal of the University of Malaya Medical Centre. Vol 23 Suppl 1 (2020). 189 - 195.
[19] dewi, Oktavia & Fanora, Erli & Nurlisis, Nurlisis. (2022). Factors Affecting Stunting Incidence In Toddlers (12-59 Months) at Rumbai Bukit Health Center Pekanbaru City. NeuroQuantology. 20. 8704-8713. 10.14704/nq.2022.20.6.NQ22861.
[20] Laksono, Agung & Dwi Wulandari, Ratna. (2020). Relationship between Environment, Smoking Behavior, Education, Poverty, and Prevalence of Stunted Toddler in Indonesia: An Ecological Analysis. 10.21203/rs.3.rs-110565/v2.
[21] Steutel, Nina & Zeevenhooven, Judith & Scarpato, Elena & Vandenplas, Yvan & Tabbers, Merit & Staiano, Annamaria & Benninga, Marc. (2020). Prevalence of Functional Gastrointestinal Disorders in European Infants and Toddlers. The Journal of Pediatrics. 221. 107-114. 10.1016/j.jpeds.2020.02.076.
[22] Aditia, Nyimas & Mitra, Mitra & Abidin, Aldiga & Priwahyuni, Yuyun & Purba, Christine. (2023). Factors Associated with Stunting in Children Under Five Years. Jurnal Kesehatan Komunitas. 9. 122-131. 10.25311/keskom.Vol9.Iss1.1294.
[23] Wiyono, Sugeng. (2022). Modelling Of Toddlers Stunting Prevention in The First Thousand Days of Urban Area Life. SANITAS: Jurnal Teknologi dan Seni Kesehatan. 13. 197-209. 10.36525/sanitas.2022.17.
[24] Zhang, Y & Li, Y & Li, H & Wu, H & Zong, X. (2019). Development of primary teeth among infants and toddlers in nine cities of China in 2015. Zhonghua er ke za zhi. Chinese journal of pediatrics. 57. 680-685. 10.3760/cma.j.issn.0578-1310.2019.09.007.
[25] Priharwanti, Ardiana & Maheswara, Andung & Nugraheni, Dewi. (2023). Pregnant Women Kesti: Assistance Program "Pregnant Women Know Stunting" as an Effort to Prevent Stunting and Accidents in Bandengan, Pekalongan City. Indonesian Journal of Society Development. 2. 109-118. 10.55927/ijsd.v2i2.3717.