



DETERMINANTS OF STUNTING IN SEMARANG CITY

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ARTICLE INFORMATION

Received : August 23rd, 2023
Revised : October 10th, 2023
Available online : October 31th, 2023

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KEYWORDS

Determinants; Stunting; Semarang

DOI: 10.24252/hmsj.v4i3.40845

ABSTRACT

Background: Stunting is not only a problem of physical growth disorders, but also causes children to become sick easily, brain and intelligence development also occurs. So, stunting is a big threat to the quality of human resources in Indonesia. The purpose of writing of this literature review is to collect determinants of Stunting in Semarang.

Objective: This research uses a literature review from Google Scholar library sources, which is presented descriptively according to the problem formulation.

Result: Review from some of articles, found that maternal education level, maternal occupation, child order, birth length, child rearing patterns, exclusive breastfeeding status, family income, housing conditions, nutritional intake, and history of KEK are risk factors determining the incidence of Stunting in the Semarang.

Conclusions: Stunting prevention programs must be improved, by screening and monitoring the growth and development of babies and toddlers to prevent Stunting from an early age. Public is also advised to be more diligent in carrying out examinations at health services to monitor children's growth and development.

INTRODUCTION

Stunting is one of the problems in the child's growth and development process because it's associated with an increased risk of morbidity, death and less than optimal brain development (Nur Oktia N, 2020). The impact of Covid-19 pandemic on malnutrition cases in Indonesia is large. There are around 2 million children suffering from malnutrition and more than 7 million children under the age of five

experiencing Stunting. The number of acutely malnutrition children under five could increase by 15% in 2020, if no action taken (UNICEF, 2020).

Stunting is a condition where a child experiences growth disorders, so that the child's height doesn't accordance to his age, as a result of chronic nutritional problems, condition of lack of nutritional intake for a long time (Hanindita, 2017). Decree of the

Minister of Health Republik Indonesia Number 1995/Menkes/SK/XII/2010 concern anthropometric standars for assesing children’s nutritional status based on the height index for age (TB/U) with z-score of less than -2 SD (SD) (Tim Nasional Percepatan Penanggulangan Kemiskinan, 2017).

Data from implementation of the Month of Toddler Weighing for children under five age in Semarang city shows that Stunting in toddlers in 2017 was 2.63%, consisting of 0.26% very short and 2.37% stunted, while in 2018 data shows that 2.73%, 0.26% very short toddlers and 2.47% stunted toddlers (Profil Kesehatan Kota Semarang, 2018).

It’s shows that the incidence of Stunting in Semarang city is good, because it’s far below 20% (limit determined by WHO). However, some efforts are still needed to prevent and control stunting optimally, in

order to continue to reduce the number of Stunting incidents in Semarang city.

METHODS

This research is a literature revies study which contains reviews, summaries and the author’s thought from several sources. The topics discussed are presented descriptively using a number of literature references that are appropriate to the problems in this paper. Literature using google scholar with the keywords ‘Stunting’ and ‘Semarang city’ with the article time range 2019 – 2022.

Selection study and research data quality consisted of identifiyng literature data of 920 articles, then selecting them according to inclusion and exclusion criteria until the data matched the research objectives of 10 articles. Data analysis includes data extraction and synthesis of research results.

RESULTS

Characteristics of Literature Data

Table. 1. Characteristic of Literature Data

No	Author (Year)	Journal Name, Volume, Number	Title	Method	Result
1	Widya Hary Cahyati, Galuh Nita Prameswari, Cahya Wulandari, Karnowo (2019)	Jurnal Riptek, Vol. 13, No 2.	Stunting Study in Semarang City.	Analytic Quantitative	Factors associated with Stunting among toddlers in Semarang city in 2018 were maternal ecutaion level (OR = 2,97), maternal occupation (OR = 6,58), number of chilren (OR = 4,15), order of children (OR = 4,15), body length (OR = 5,77), toddler caregiver (OR = 9,99), exclusive breastfeeding status (OR = 3,47), income category (OR = 7,37), condition at home (OR = 3,78), nutritional intake (OR = 8,79).

2	Tri Sakti Widyaningih, Heny Prasetyorini (2022)	Jurnal Peduli Masyarakat, Vol.4, No 4.	Optimizing Child Growth and Development through the Denver II Application and Stunting Prevention Education for Prenatal Mothers in Semarang City.	Pre-Post Test	The results of the pre-test and post-test on parental knowledge about Stunting using frequency distribution data analysis showed that before education was carried out, parental knowledge was good at 40%, 50% is enough and 10% less. After conducting stunting education, people's knowledge was obtained good by 90%, enough 10% and less 0%.
3	Aisyah, Suyatno, M. Zen Rahfiludin (2019).	Jurnal Kesehatan Masyarakat FKM UNDIP, Vol. 7, No 1.	Factors Associated with Stunting in First Grade at SDI Taqwiyyatul Wathon in the Coastal Area of Semarang City.	Observational Analytic	The result of this study showed there were stunting new elementary school (25%). While, there was no relation between stunting with mother's work (p=0,154), mothers education (p=0,147), family income (p=0,295), nutritional parenting (p=0,577), health care parenting(p=0,633), personal hygiene parenting (p=0,309), and infectious diseases (p=0,425).
4	Yuni Prihatin Ningtyas, Ari Udiyono, Nissa Kusarian2 (2020)	Jurnal Kesehatan Masyarakat FKM UNDIP, Vol. 8, No 1.	Mothers's Knowledge Relating to Stunting of Toddlers in the Karangayu Health Centre Working Area Semarang City.	Observational Analytic	Factors associated with Stunting in the Karangayu Community Health Centre Work area Semarang city are the mother's history of KEK during pregnancy and the mother's level of knowledge about nutrition.
5	Anom Dwi Prakoso, Akhmad Azmiardi, Gabriela Advitri Febriani, Ayu Anulus (2021)	Jurnal Ilmu Kesehatan Bhakti Husada: Health Science Journal, Vol. 12, No 02.	Cse Control Study: Monitoring Growth, Feeding and Their Relationship with Stunting in Orphanage Children in Semarang City.	Quantitative Case Control Analytic	The results showed that growth monitoring by caregivers was classified as poor (51.04%) and feeding patterns were classified as poor (54,17%). Statistical tests show that the incidence of Stunting has a significant relationship with growth monitoring (p=0.025) and feeding patterns (p=0.001)
6	Wulandari Meikawati, Dian Pertiwi	MGMI, Vol. 13, No 1.	Low Birth Weight and Maternal Anemia as	Cross Sectional	Most children experienced Stunting (52,4%). As many as 20,6 percent of children had a history of low birth weight and 23,8 percent had a history

	Kisdi Rahayu, Indri Astuti Purwanti (2021).		Predictors of Stunting in Children Aged 12 – 24 Months in the Genuk Community Health Centre Area Semarang City.		of short birth length. Most mother (57,1%) didn;t provide exclusive breastfeeding. As many as 6,3 percent of mothers were risk of height, 22,2 percent of mothers were in the KEK, and 33,3 percent experienced anemia during pregnancy. The predominance of Stunting occurs in girls. History of LBW ($p=0,047$), birth length ($p=0,000$), and maternal anemia status ($p=0,032$) were significantly related of <i>stunting</i> . History of LBW ($p=0,004$) and maternal anemia status during pregnancy ($p=0,001$) are the most at risk of developing Stunting.
7	Farah Ulya Fauziah (2022).	Thesis : Faculty of Medicine Universitas Islam Sultan Agung Semarang g.	The Relationship between Socio-Economic Factors and the Incident of Stunting in Toddlers (Analytical Observation Study ad Bandarharjo Community Health Centre Semarang).	Observat ional Analytic, Case Control.	The majority of the case group had highly educated fathers (50.8%) and worked with a fixed salary (76.3%); highly educated mother (52.4%); mother not working (79.4%); family income below minimum wage (69.8%); number of family members < 4 people (54%); the number of children under five was 1 (81%), and they had complete parents (93.7%). Father's education (OR=1.138, (0.559-2.316), $p=0.722$), father's occupation (OR=1.197; (0.509-2.815) $p=0.681$), mother's education (OR=1.382, (0.682-2.801), $p=0.369$), and marital status ($p=0.119$) was not related to the incidence of stunting; while mother's occupation (OR=2.530; (1.146-5.586); $p=0.020$), family income (OR=2.547; (1.227- 5.290); $p=0.011$), number of family members ($p=0.000$), number of children under five (OR =3.864; (1.736-8.598); $p=0.001$) is related to the incidence of stunting.
8	Ester Theresia Siringorin go, Ahmad Syauqy, Binar Panunggal , Rachma PURwanti, Nurmasari Widyastuti (2020)	Journal Of Nutrition College, Vol. 9, No 1.	Family Characteristic s and Level of Adequate Nutritional Intake as Risk Factors for Stunting in Newborns.	Observat ional Case Control.	Bivariate results show that the variables of toddler age, birth length, adequate levels of protein, carbohydrates, vitamin A, calcium, zinc and iron are related to the incidence of stunting in toddlers. Multivariate tests showed that there was a significant relationship between the level of protein adequacy ($p<0.001$) and the incidence of stunting in toddlers. Children with low levels of protein adequacy are 6.495 times more likely to experience stunting.

9	Eta Aprita Aritonang, Ani Margawati, Fillah Fithra Dieny (2020)	Journal Of Nutrition College, Vol. 9, No 1.	Analysis of Food Expenditure, Food Security and Nutrient Intake of Children Under Two Years (BADUTA) as Risk Factors for Stunting	Case Control	Stunted children are more likely to experience household food insecurity (79.2%), a history of insufficient protein intake (70.8%), vitamin A (75%) and zinc (66.7%) compared to children who are not stunted. Household food security (OR=6.9), history of protein intake (OR=8.6), vitamin A (OR=20.6) and zinc (OR=8.7) are the factors most at risk for stunting in toddlers aged 6-24 months (p<0.05).
10	Slamet Ali Mashar Suhartono, Budiono (2021)	Serambi Engineer ing, Vol. VI, No 3.	Factors that influence the incidence of stunting in children: Literature study	Descripti ve	There are several factors that are related to the incidence of stunting, such as parenting patterns towards children, basic immunization, basic sanitation, history of infectious diseases, smoking habits, and the incidence of respiratory tract infections.

Source: Research Analysis, 2023

DISCUSSION

The level of maternal education is related to the incidence of stunting, this is because mothers who have a high level of education will easily absorb information, including knowledge about nutrition. (Widya Hary et al, 2019).

Increasing knowledge about Stunting among mothers is carried out through partnership programs, for example by counseling, providing education about Stunting which aims to find out the extent of parents' knowledge about Stunting (Tri Sakti W et al, 2022).

Mothers who do not work have a higher risk of having stunted children, because mothers who work have a higher income than mothers who do not work so they can meet

their children's nutritional needs. Mothers can also socialize more with other people so they can add information about nutrition (Widya Hary et al, 2019).

The first child has a higher risk of stunting than the second child and so on, because the mother has no experience in preparing for pregnancy and caring for children. Meanwhile, with the next child, the mother will learn from her experience when she was pregnant with the previous child. Apart from that, for the second child and beyond, the mother has also been exposed to counseling or counseling from health workers, so she can better prepare for the pregnancy and care of her child.

Birth weight can be an indicator to see the possibility of survival, growth, long-term

health and psychological development of children (Wulandari et al, 2021). The risk of growth disorders is greater in babies who have experienced faltering previously, namely during pregnancy.

The age of the pregnant woman should not be too young or too old, because this condition is one of the conditions that aggravates the condition of the pregnant woman and puts her at risk of giving birth to a LBW baby.

One of the risks of stunting is parents parenting style towards children by caring for, developing and educating children at an age where they cannot do everything themselves and need help from others (Slamet et al, 2021). Parental parenting patterns can be determined from information obtained from the environment, both mass media and social media, cadres and health workers. Therefore, efforts that can be made include strengthening the capacity of cadres at the community level in carrying out outreach efforts regarding the prevention of stunting in the elderly.

Exclusive breastfeeding in Indonesia is only around 5% of children aged 23 months. This shows that most Indonesian children do not receive the nutrition they need during the first two years of life. More than 40% of babies are introduced to complementary foods at an early age, namely before reaching six months of age and the food given often does not meet the baby's nutritional needs. (Kemenkes RI, 2021).

Low levels of income and unbalanced expenditure lead to insufficiently diverse diets, low purchasing power and choosing nutritious foods (Aisyah et al, 2019). Family income is related to the availability/fulfillment of food and nutritional needs. High family income can meet the need for complementary breastfeeding and complete immunizations (Farah Ulya, 2022) as well as providing a variety of types of food so that children's nutritional needs can be met (Ramadhani, 2019).

The unavailability of sanitation facilities at the residential level means that family members do not receive proper sanitation services and causes children not to wash their hands properly after carrying out activities, thereby increasing the risk of dirt or bacteria entering the child's body and causing the child to get sick. Washing hands with running water is linked to the incidence of stunting and preventing diarrhea in children (Slamet et al, 2021).

Stunting can also be caused by poor nutritional intake. Parents pay less attention to the diversity of food consumed by children and pay less attention to children in choosing snacks, causing children to feel bored with nutritious food.

Chronic energy deficiency is caused by insufficient nutritional intake in mothers over a long period of time. Pregnant women with CED (KEK) can cause the fetus to not receive adequate nutritional intake, which can affect the baby's health status. The condition of

pregnant women who are malnourished will cause the fetus to not develop optimally. In addition, mothers with chronic energy deficiencies are at greater risk of giving birth to babies who are born with poor nutrition or malnutrition, LBW and low height. This situation will have a very high risk of causing children to become stunted in the future (Yuni et al, 2020).

CONCLUSION

The results of a review of a number of research articles found that maternal education level, maternal occupation, order of children, birth length and LBW, parenting patterns, exclusive breastfeeding status, family income, housing conditions, nutritional intake, and

history of KEK are risk factors determining the incidence of stunting. in Semarang City.

The research results presented by other researchers can be used as a reference for planning and evaluating the resolution of stunting through modification of environmental factors, increasing knowledge and health promotion with the help of health workers and health service facilities.

SUGGESTION

Stunting prevention programs must be improved, by screening and monitoring the growth and development of babies and toddlers to prevent Stunting from an early age. Public is also advised to be more diligent in carrying out examinations at health services to monitor children's growth and development.

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