

Psychosocial Stimulation In Stunting And Non-Stunting Firms

Dian Rahmawati, Lia Agustin

Academy of Midwifery of Dharma Husada Kediri

ABSTRACT

Background: Stunting is a condition of growth failure among children under five due to chronic malnutrition. According to World Health Organization (WHO), stunting under five is a public health problem if the prevalence is 20% or more. In 2018, stunting in Indonesia is more than 20%, so it becomes a public health problem and needs to be addressed immediately. Stunting does not only affect physical growth but also psychosocial development. Stunting can reduce the quality of human resources (HR) because the body's organs, especially the brain, are not able to develop optimally, and increase the risk of diseases such as hypertension, diabetes mellitus, heart disease, and stroke. The low psychosocial stimulation has an impact on the subsequent growth of the child. This study aimed to analyze the association between psychosocial stimulation and stunting.

Subjects and Method: A case control study was conducted in the Village Bangkok, Kediri, East Java, in August 2020. A total sample of 25 stunting children aged 24-59 months was obtained as a case group and 25 normal toddlers aged 24-59 months as a control group. The dependent variable was the incidence of stunting, while the independent variable was psychosocial stimulation. The stunting measurement was based on the height per age (converted into a Z-score). Measurement of psychosocial stimulation was using the Home Observation for Measurement of the Environment Revisited (HOME) questionnaire consists of 55 statements divided into 8 aspects. The data were collected and analyzed using the Chi Square test.

Results: Stunting children showed that psychosocial stimulation were low (20%), medium (64%), and high (16%). While psychosocial stimulation among not stunted children were absent (0%), medium (64%), and high (36%). Psychosocial stimulation was associated with the incidence of stunting ($p=0.031$), and it was statistically significant.

Conclusion: Psychological stimulation is associated with the incidence of stunting. The psychosocial stimulation provided by families for stunting toddlers is still less than that of non-stunting children.

Keywords: stunting, psychosocial stimulation, children under five

Correspondence:

Dian Rahmawati. Academy of Midwifery of Dharma Husada. Jl. Penanggungan 41A Kediri City 64114, East Java. Email: lintangkayana31@gmail.com. Mobile: +6285645076003

BACKGROUND

Stunting is defined as a condition of stunting in children under five years old due to chronic malnutrition and recurrent infections, especially in the first 1000 days of life. Children are classified as stunting or short if their body length or height compared to their age results is lower than the national standards set (Bappenas, 2018). Stunting is measured based on World Health Organization (WHO) growth standards described by the z-score for height/ age (height/ age) less than $-2SD/$

standard deviation and less than $-3SD$ (Guide, 2010).

Stunting describes chronic nutritional problems starting from the condition of the mother or future mother, fetal period, and infancy or children under five (Ministry of Health, 2016). Stunting will have an impact on the quality of human resources because body organs, especially the brain, cannot grow and develop optimally (Bappenas, 2018).

Impaired brain function such as disturbances in the function of seeing, hearing,

thinking, and doing movement will have an impact on children's cognitive abilities (Ajayi et al., 2017). Lack of cognitive and learning abilities will reduce productivity as adults, and reduce the quality of the next generation of human resources (Sumartini, 2020). In addition, stunting also increases the risk of degenerative diseases such as diabetes, hypertension, heart disease, and stroke. The prevalence of stunting in diabetes patients is quite high (35%) and most of them occur in women (62%) (Rianti, 2017).

The prevalence of children under five with stunting in the last 10 years shows an insignificant decrease. The prevalence of stunting in 2018 is 30.8% (Ministry of Health, 2018) in 2013 amounted to 37.2%, and in 2007 amounted to 36.8%. According to WHO, stunting under five is a public health problem if the prevalence is more than 20%. The prevalence of stunting of children under five in Indonesia is still high (more than 20%) so that it is a public health problem and needs to be addressed (Ministry of Health, 2016).

Heredity affects birth length only around 4 to 7%, and on the other hand environmental factors are very large, around 74 to 87% (Bappenas, 2018). Providing adequate psychosocial stimulation has great benefits for the growth and development of children under five. Masrul argued that the psychosocial stimulation performed by families on stunting children under five was still less than normal children under five. The low psychosocial stimulation will certainly affect the next child's growth (Masrul, 2019). This

study aims to analyze whether psychosocial stimulation is associated with stunting.

SUBJECTS AND METHOD

1. Study Design

This was a case control study conducted in Bangkok Village, Kediri Province in August 2020.

2. Population and Sample

This study using the fixed disease sampling technique, 25 stunting infants aged 24-59 months were sampled as a case group and 25 non-stunting children under five as a control group.

3. Study Variables

The dependent variable is the incidence of stunting, while the independent variable is psychosocial stimulation. The stunting measurement is based on the height/age measurement which is converted into a Z-score.

4. Study Instruments

Measurement of psychosocial stimulation using the Home Observation for Measurement of the Environment Revisited (HOME) questionnaire consists of 55 statements divided into 8 aspects.

5. Data Analysis

The data collected were analyzed using the Chi Square test.

RESULTS

1. Sample Characteristics

The data of sample characteristics were described in Table 1.

Table 1 Characteristics of study subjects (n= 50)

Characteristics	Category	n	%
Maternal age	<20 years	1	2
	21-35 years	28	56
	>35 years	21	42
Gender	Female	24	48
	Male	26	52
Parity	1st and 1st child 2nd	36	72

Birth weight	3rd and > 4 children	14	28
	<2500 gram	7	14
Early Initiation of Breastfeeding	≥ 2500 gram	43	86
	Yes	30	60
Exclusive breastfeeding	No	20	40
	Yes	26	52
Psychosocial stimulation	No	24	48
	Low	5	10
	Medium	32	64
	High	13	26

The subjects of this study were 50 children under-fives aged 24-59 months consisting of 25 stunting and 25 non-stunting children under-fives. Most of the mothers were aged 21-35 years (56%). Most of the children under five (72%) were the first and second children, were male (52%), had a birth weight

of ≥2500 grams (86%), performed Early Initiation of breastfeeding (60%), received exclusive breastfeeding (52%), and received moderate psychosocial stimulation (64%).

2. Bivariate Analysis

The data of bivariate analysis were described in Table 2

Table 2 Relationship between psychosocial stimulation and stunting (n= 50)

Psychosocial stimulation	Stunting incidence				p
	Stunting	%	Normal	%	
Low	5	20	0	0	0.031
Moderate	16	64	16	64	
High	4	16	9	36	

Table 2 shows that there are 5 stunting children with low psychosocial stimulation, while the children who are not stunting do not receive low psychosocial stimulation. With the chi square test (CI= 95%) the relationship between psychosocial stimulation and the incidence of stunting was obtained p value= 0.031. This shows that there is a relationship between psychosocial stimulation and the incidence of stunting.

DISCUSSION

Psychosocial stimulation was associated with the incidence of stunting (p= 0.031; 95% CI) as shown in Table 2. Psychosocial stimulation is psychosocial stimulation given by families to children under-fives. Measurement of psychosocial stimulation using the HOME questionnaire totaling 55 statements which are divided into 8 aspects including learning sti-

mulation, language stimulation, physical environment, warmth and acceptance, academic stimulation, modeling, variation of stimulation to children, and positive punishment (Totssika and Syva, 2004).

The process of growth and development is a major and important process for children. In development there are mental changes that take place gradually over time, from simple abilities to more advanced abilities such as intelligence, attitudes, and behavior (Susanto, 2011).

The first years of a child's life are an important time for physical growth and development, the development of intelligence, motor skills, social and emotional, so that the success of growth and development in the first years also determines the future and the quality of human resources in the future. A study in the field of neurology as conducted

by Dr. Benyamin S. Bloom, an education expert from the University of Chicago, United States, suggests that the growth of brain tissue cells in children aged 0-4 years reaches 50% and by the time children are eight years old, brain development has reached 80%. This means that if at that age the child's brain does not get maximum stimulation, then all the child's development, both physically and mentally, will not be optimal (Permono, 2013).

The human brain has the ability to record, absorb, store, produce, and reconstruct information. This ability is not spontaneous but is influenced by the stimulation received. Stimulation in the first years of a child's life greatly affects the child's intelligence, if the stimulation is not received in the first years, it will be difficult to improve in later life. Children who do not get psychosocial stimulation, such as being rarely touched or invited to play, may experience intellectual disturbances and various behavioral disorders such as loss of self-confidence, very fearfulness, not being independent, and vice versa, children can become too aggressive (Susanto, 2011).

Stunting will have an impact on the quality of human resources because body organs including the brain cannot grow and develop optimally (Bappenas, 2018). Disorders of the brain function to see, hear, think, and do movements will have an impact on children's cognitive abilities (Ajayi et al., 2017). Lack of cognitive and learning abilities will reduce productivity as adults, and reduce the quality of human resources for the next generation (Sumartini, 2020).

Stunting has psychosocial impacts starting from cognitive, motor, language, personality, emotional, moral, spiritual, and social aspects (Primasari, Y. & Keliat, 2020). Providing psychosocial stimulation will improve children's cognitive ($\beta = 0.512$), where an increase in one unit of psychosocial stimu-

lation will increase cognitive development by 0.512 points (Hastuti et al., 2010). Other studies also show that there is a relationship between stimulation and the development of children under-fives aged 12-36 months ($p = 0.027$). Correct stimulation will improve the fine and gross motor development of children under-fives (Ulfah et al., 2018).

Other studies also show that there is a relationship between stimulation and the development of children aged 4-5 years ($p < 0.001$), the lack of stimulation during the children under five years will cause delays and disruption in child development (Sumiyati and Yuliani, 2016). Another study also showed that there was a relationship between stunting and motor development of children aged 6-23 months ($p = 0.002$). The motor development of stunting children under-fives is still lacking when compared to non-stunting children under-fives (Pantaleon et al., 2016).

Other studies also show that there are differences in gross motoric development, fine motor skills, language, and social personalities in stunted and non-stunting children ($p < 0.05$). The low motor skills of stunting children under-fives are a result of the obstruction of the muscle maturity process, so that the mechanical ability of the muscles is reduced. Long-term nutritional deficiencies, especially fat and protein, will inhibit the formation and maturation of otor tissue, so that stunted children are slower to master motor movements compared to children who are not stunted (Hanani and Syauqy, 2016).

Providing adequate psychosocial stimulation has great benefits for children under five growth and development. Psychosocial stimulation from infancy can increase mother-baby interaction through the skin-to-skin process, and can also increase the baby's immune system and normalize metabolism (Masrul, 2019). Stunting does not only have a physical impact but also has an impact on children's psychosocial development, so the

role of parents in providing psychosocial stimulation is needed.

Table 1 shows that 42% of mothers under five care for their children while working. Working mothers of children under-fives do not affect the provision of psychosocial stimulation that their children receive. There is no difference between psychosocial stimulation given to children under five in families of working and non-working mothers ($p=0.712$). Working mothers can still take care of psychosocial stimulation well, because the quality of the mother-child interaction is more important than the quantity. The success of providing psychosocial stimulation is not the amount of time spent with children under-fives, but how the quality of the use of time itself (Latifa et al., 2010).

Study in Honduras on children under-fives aged 36-59 months shows that psychosocial stimulation is associated with early childhood development (ECD). Psychosocial stimulation is important for mothers, fathers, or families to carry out to increase ECD (Urke et al., 2018). Study in Libya shows that fathers' interactions either directly or indirectly or through social media are associated with stunting (El Taguri et al., 2009). Performing psychosocial stimulation of children under-fives and children is not only the mother's job, but the father and other family members also play a role.

REFERENCE

- Ajayi OR, Matthews GB, Taylor M, Kvalsvig JD, Davidson, L, Kauchali S, Mellins C (2017). Structural equation modeling of the effects of family, preschool, and stunting on the cognitive development of school children. *Frontiers in Nutrition*, 4: 1–12. doi: <https://doi.org/10.3389/fnut.2017.00017>
- Taguri EA, Betilmal I, Mahmud SM, Ahmed AM, Goulet O, Galan P & Hercberg S (2009). Risk factors for stunting among under-fives in Libya. *Public Health Nutr*, 12(8): 141–1149. doi: <https://doi.org/10.1017/S1368980008003716>
- Guide I (2010). Interpretation guide. *Nutrition Landcape Information System*, 1–51. doi: <https://doi.org/10.1159/000362780>. Interpretation
- Hanani R & Syauqy A (2016). Perbedaan perkembangan motorik kasar.
- Hastuti D, Alfiasari A & Chandriyani C (2010). Nilai anak, stimulasi psikososial, dan perkembangan pangan di kabupaten Banjarnegara, Jawa Tengah. *Jurnal Ilmu Keluarga & Konsumen*, 3(1): 27–34. doi: [10.24156/jikk.2010.3.1.27](https://doi.org/10.24156/jikk.2010.3.1.27)
- Kementerian Republik Indonesia (2016). Infodatin: situasi balita pendek.
- Kementrian PPN/ BAPPENAS (2018). Strategi nasional.
- Latifa E, Hastuti D & Latifah M (2010). Pengaruh pemberian asi dan stimulasi psikososial terhadap perkembangan sosial-emosi anak balita pada keluarga ibu bekerja dan tidak bekerja. *Jurnal Ilmu Keluarga Dan Konsumen*, 3(1): 35–45. doi: <https://doi.org/10.24156/jikk.2010.3.1.35>
- Masrul (2019). Gambaran pola asuh psikososial anak stunting dan anak normal di wilayah lokus stunting kabupaten pasaman dan pasaman barat sumatera barat. *Jurnal Kesehatan Andalas*, 8(1): 112–116. doi: <https://doi.org/10.25077/jka.v8i1.978>
- Ministry of Health Republik Indonesia (2018). Laporan nasional riset kesehatan dasar 2018. 582.
- Pantaleon MG, Hadi H & Gamayanti IL (2016). Stunting berhubungan dengan perkembangan motorik anak di Kecamatan Sedayu, Bantul, Yogyakarta. *Jurnal Gizi Dan Dietetik Indonesia (Indonesian Journal of Nutrition and Dietetics)*, 3(1): 10–21. doi: [10.21927/ijnd.2015.3\(1\).10-21](https://doi.org/10.21927/ijnd.2015.3(1).10-21)

- Permono H (2013). Peran orang tua dalam optimalisasi tumbuh kembang anak untuk membangun karakter jujur. 34–47. <https://doi.org/10.31227/osf.io/zdt-3g>
- Primasari Y & Keliat B (2020). Praktik pengasuhan sebagai upaya pencegahan - dampak stunting pada perkembangan psikososial kanak-kanak. 3(3): 263–272.
- Rianti E (2017). Risiko stunting pada pasien diabetes mellitus. *Jurnal Kesehatan*, 8(3): 455. doi: <https://doi.org/10.266-30/jk.v8i3.674>
- Sumartini E (2020). Studi literatur: dampak stunting terhadap kemampuan kognitif anak. *Prosiding Seminar Nasional Kesehatan “Peran Tenaga Kesehatan Dalam Menurunkan Kejadian Stunting” Tahun 2020*, 127–134.
- Sumiyati, Yuliani DR (2016). Hubungan stimulasi dengan perkembangan anak usia 4-5 tahun di desa Karang Tengah. *Link*, 12(1): 34–38. <http://ejournal.poltekkessmg.ac.id/ojs/index.php/link>
- Susanto A (2011). Perkembangan anak usia dini: pengantar dalam berbagai aspeknya. Kencana. <https://books.google.co.id/books?id=oqRPDwAAQBAJ>
- Totssika V, Syva K (2004). The home observation for measurement of the environment revisited. *Child and Adolescent Mental Health*, 9(1): 25–35. doi: https://doi.org/10.1007/978-3-319-13942-5_21
- Ulfah E, Rahayuningsih SE, Herman H, Susiarno H, Gurnida DA, Gamayani U, Sukanda H, Studi P, Kebidanan M, Ilmu D, Anak K, Orthopaedi D, Traumatologi D, Obstetri Dan Ginekologi D, Neurologi D & Epidemiologi D (2018). Artikel penelitian global medical and health communication asuhan nutrisi dan stimulasi dengan status pertumbuhan dan perkembangan balita usia 12-36. doi: <https://doi.org/10.29313/g-mhc.v6i1.2323>
- Urke HB, Contreras M & Matanda DJ (2018). The influence of maternal and household resources, and parental psychosocial child stimulation on early childhood development: A cross-sectional study of children 36–59 months in Honduras. *Int J Environ Res and Public Health*, 15(5): 926. doi: <https://doi.org/10.3390/ijerph15050926>



INDEX COPERNICUS
INTERNATIONAL



Certificate of Attendance

This is to certify that

Lia Agustin, SST., MPH

Hereby recognized for participation as

Oral Presentation

**The 7th International Conference on Public Health
Childhood Stunting, Wasting, and Obesity as Critical Global
Health Issues: Forging Cross-Sectoral Solutions**

Surakarta, Indonesia, November 18-19, 2020

Rector, Universitas Sebelas Maret

Chair of the Conference



Prof. Dr. Jamal Wiwoho., S.H., M.Hum

Prof. Bhisma Murti, dr, MPH, MSc, PhD

330/III/ICPH/IX/2020

ORIGINAL CERTIFICATE INDICATED BY QR CODE