BUKTI KORESPONDENSI

ARTIKEL JURNAL ILMIAH NASIONAL

Judul artikel : Stunting and Development of Behavior

Jurnal : **International Journal of Public Health Science**

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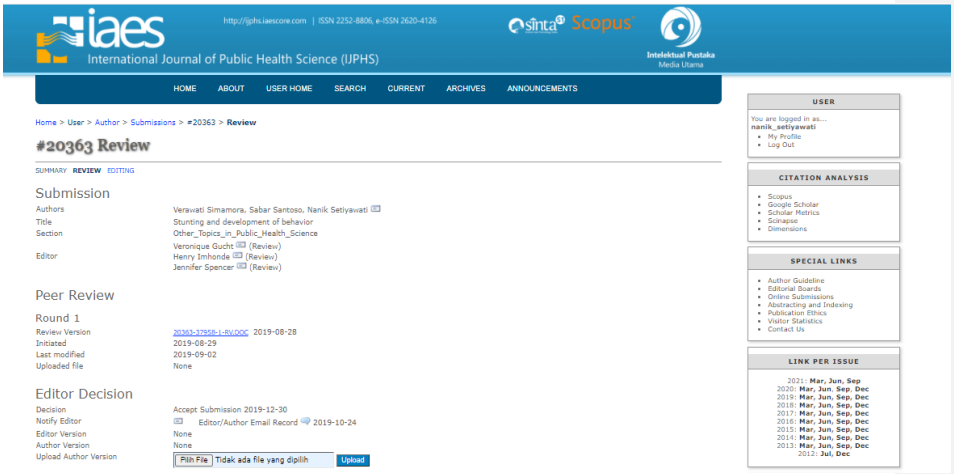
No	Perihal	Tanggal
1	Bukti Pengiriman artikel	2 September 2019
2	Bukti konfirmasi review dan hasil review pertama	24 Oktober 2019
3	Bukti revisi hasil review pertama dan revisi artikel	6 November 2019
4	Bukti konfirmasi review dan hasil review kedua	4 Desember 2019
5	Bukti konfirmasi hasil review kedua dan bukti revisi hasil review kedua	5 Desember 2019
6	Bukti Konfirmasi Review ketiga	10 Desember 2019
7	Bukti konfirmasi hasil review kedua dan bukti revisi hasil review kedua	10 Desember 2019

1. BUKTI PENGIRIMAN ARTIKEL (2 SEPTEMBER 2019)



iaes
http://ijphs.iaescore.com | ISSN 2252-8806, e-ISSN 2620-4126
International Journal of Public Health Science (IJPHS)
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#20363 Review

SUMMARY REVIEW EDITING

Submission

Authors	Verawati Simamora, Sabar Santoso, Nanik Setiyawati
Title	Stunting and development of behavior
Section	Other_Topics_in_Public_Health_Science
Editor	Veronique Gucht (Review) Henry Imhonde (Review) Jennifer Spencer (Review)

Peer Review

Round 1

Review Version	20363-37958-1-RV.DOC 2019-08-28
Initiated	2019-08-29
Last modified	2019-09-02
Uploaded file	None

Editor Decision

Decision	Accept Submission 2019-12-30
Notify Editor	Editor/Author Email Record 2019-10-24
Editor Version	None
Author Version	None
Upload Author Version	Pilih File Tidak ada file yang dipilih Upload

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2017: Mar, Jun, Sep, Dec
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2015: Mar, Jun, Sep, Dec
2014: Mar, Jun, Sep, Dec
2013: Mar, Jun, Sep, Dec
2012: Jul, Dec

Relationship Of *Stunting* With Development Of Behavior In The Working Area Of Sentolo I Health CenterKulonProgo District

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ABSTRAC

Background: Development is an increase in ability in terms of structure and more complex body functions. Development has a regular pattern and can be predicted which is the result of the maturation process. *Stunting*toddlers can be known when a toddler is long or tall, then compared to normal standards and results**Objective:** To find out the relationship between the incidence of *stunting and the development of toddlers 24-59 months in the work area of Sentolo I Public Health Center*, KulonProgo Regency. Knowing the relationship of characteristics with the development of toddlers 24-59 months in the work area of Sentolo I Public Health Center, KulonProgo Regency.

Methods: The type of research carried out is a type of observational analytic (non-experimental) research. The study design used was a retrospective cohort (historical cohort). The research was conducted in May 2019. The population of this study was all under-fives under the Sentolo Health Center I. work area The samples used in this study were 130 respondents consisting of 65 exposed groups and 65 unexposed groups. The analysis used in this study used Chi-square.To detect developments using Denver II

Results: The results of the bivariate analysis showed that there was a relationship between *Stunting* and the development of toddlers 24-59 months with p=0.003. There was no relationship between sex and number of siblings with the development of children under five p=0.808. There is a significant relationship between the level of knowledge of mothers and toddler development p=0.859. There is a relationship between the level of education of mothers with development p=0.003. There is a relationship between family income and the development of $p=0.001$, but there is no relationship between the work of mothers and children under five years p=0.001.

Conclusion: There is a relationship between *stunting* and developing toddlers 24-59 months in the working area of Sentolo I Public Health Center, KulonProgo Regency.

Keywords:*Stunting*, development, toddlers.

INTRODUCTION

There are three health problems that become Government programs, namely TB, Stunting and Immunization. *Stunting* is stunted growth (Growing Short).[1]*Stunting* occurs due to failure during child development because health conditions and nutritional intake are not optimal. *Stunting* is often associated with socio-economic conditions, presenting several diseases and nutritional intake that lack quality and excess.[2] Stunting is a place where the tall body is shorter than the height body of others in general (as appropriate). Children experience greater growth to become adults who are less educated, poor, unhealthy and vulnerable to non-communicable diseases.[3]

Stunting is a condition in which a person's height is shorter than other people's height in general (as appropriate). *Stunting* occurs because the lack of nutritional intake received by the fetus / infant malnourished occurs since the baby is in the womb and at the beginning of the child's birth. According to Minister of Health Decree number 1995 / KEMKES / SK / XII / 2010 concerning anthropometric standards Ranking of nutritional status of children in accordance with the Body Length Index according to Age (PB / U) or Body Height by Age (TB / U) .Stunting toddlers can be known if a toddler has measured his length or height, then compared to the standard and the results are below normal. Short toddlers are toddlers with nutritional status based on length or height according to age when compared to the standard WHO-MGRS (Multicentre Growth Reference study) in 2015, the z-score is less than -2SD.[4]

The *stunting* prevalence in Indonesia in 2013 was 37% but in 2018 it fell to 30.8% where the WHO limit was <20% so *stunting* was included in the health problems in Indonesia. This means that not optimal growth is experienced by around 8.9 million children in Indonesia or 1 in 3 children in Indonesia experiencing *stunting* where children who are stunted on average occur under the age of 5 years. The prevalence of short-term babies in DIY in 2015 was 14.86%, down in 2016 to 11% and again increasing in 2017 to 13.86% .[5]

Development (development) is an increase in ability in terms of structure and function of the body that is more complex. Development has a regular pattern and can be predicted which is the result of the maturation process. The term development refers to the function of an organ or individual while growth (Growth) is a major change in terms of number and size at the level of organ cells and individuals or can be said to be a physical impact.[6] in the first year.

In 2010 the disruption of child growth and development in Indonesia reached 35%. This figure exceeds the World Health Organization (WHO) limit of 30% .[7]

According to WHO 2013, stunting can affect motor, cognitive, personal, social and language development which are short-term consequences for toddler development so that if not resolved can lead to long-term consequences namely health, development and economic problems.[8]

The purpose of this study was to find out the stunting relationship with the development of toddlers 24-59 months. Knowing the relationship of characteristics to toddler development included toddler sex, number of siblings, level of mother's knowledge, maternal education level, maternal occupation and family income on toddler development.

The benefits of this study are to provide benefits and add insight into *Stunting* Relationship with the development of toddlers 24-59 months. For Sentolo I Health Centers The results of this study were used as input for Puskesmas in *stunting* and development services for toddlers. For midwives and child health practitioners (KIA) it is hoped that the results of the research can be input and information to prevent abnormal development. For the next researcher, it is expected to be able to add information for the basis and reference of research by further research that will conduct research related to the development of toddlers.

RESEARCH METHOD

The type of research carried out is a type of observational analytic (non-experimental) research. The study design used was a retrospective cohort (historical cohort). The design was chosen because it is a good design in assessing the relationship between risk factors and their effects.[9] The population of this study were all toddlers in 2017 in the work area of Sentolo I Health Center in KulonProgo Regency with 1,572 toddlers. The sampling technique was done by purposive sampling, by making inclusion and exclusion criteria.[10]Sampel in this study For toddlers exposed to *stunting* samples needed 65 toddlers and non-*stunting* toddlers 65 toddlers so that the total sample was 130 toddlers Independent variables in this study were events *stunting*. In this study the dependent variable is the development of toddlers. This research has received the Ethics Eligibility from the Health Research Ethics Commission (KEPK) Health Polytechnic of the Ministry of Health Yogyakarta on May 21, 2019 with No.e_KEPK / POLTEKESYO / 0081 / V / 2019.

RESULTS AND ANALYSIS

1. Characteristics of Subjects

Based on the results of the study, the characteristics of the research respondents can be seen in the table.

Table 1. Data on *stunting* frequency distribution for toddlers' development 24-59 months

Variable	f	%
Stunting event		
Stunting	65	50
Not stunting	65	50
Total	130	100
Development		
Abnormal	43	33,1
normal	87	66,9
Total	130	100
Child sex		
man	57	43,8
women	73	56,2
Total	130	100
Number of siblings		
There is no brother	33	25,4
There are brothers	97	74,6
Total	130	100
Mother's education level		
Elementary, Middle School / equivalent	56	43,1
High school / equivalent	71	54,6
PT / equivalent	3	2,3
Total	130	100

Work		
Does not work	91	70
Work	39	30
Total	130	100
Level of mother's knowledge		
Less	16	12,3
Enough	63	48,5
Well	51	39,2
Total	130	100
Family income		
Less than UMK	85	65,4
More similar to the UMK	45	34,6
Total	130	100

Table 1 shows data from 130 respondents, divided into two groups, namely 50% of groups exposed and 50% of groups not exposed. Female sex 56.2% more than male sex 43.8%. In the number of siblings there were 74.6% having siblings and 25.4% toddlers who did not have relatives. At the level of maternal education there are more mothers with high school education levels of 54.6% while for mothers with elementary, junior high school level 43.1% and mothers with tertiary education level of 2.3%. At work 70% of mothers do not work and 30% are working mothers. For the level of knowledge of 48.5% of mothers with sufficient knowledge, 39.2% of mothers with good knowledge and 12.3% of mothers with less knowledge. On family income 65.4% of families have income below the MSE and 34.9% of families with income equal to above the MSE.

2. Relationship Characteristics with development

Characteristic relationship to the development of children under five is presented in the following table:

Table 2. Characteristic relationships with development

Independent variable	Development				*p-value*
	Abnormal		Normal		
	f	%	f	%	
Child sex					
man	20	46,5	37	42,5	0,808
women	23	53,5	50	57,5	
Total	43	100	87	100	
Number of siblings					
There is no brother	10	23,2	23	26,4	0,859
There are brothers	33	76,8	64	73,6	
Total	43	100	87	100	
Mother's education level					
Elementary, Middle					0,003
School / equivalent	27	62,8	29	33,3	
High school / equivalent	16	37,2	55	63,2	
PT / equivalent	0	0	3	3,5	
Total	43	100	87	100	
Work					
Does not work	31	72,1	60	68,9	0,871
Work	12	27,9	27	31,1	
Total	43	100	87	100	
Level of mother's					
knowledge	9	21	7	8	0,000
Less	27	62,8	36	41,4	
Enough	7	16,2	44	50,6	
Well					
Total	43	100	87	100	
Family income					
Less than UMK	37	86	48	55,2	0,001

More similar to the UMK	6	14	39	44,8
Total	43	100	47	100

Table 2 shows that there is no sex relationship with the development of toddlers *p-value* 0.808. The table shows that there is no relationship between the number of siblings and the development of children under five years *p-value* 0.859. At the maternal education level there is a relationship with the development of children under five *p-value* 0.003. In the mother's work there is no relationship between the work of the mother and the development of the toddler *p-value* 0.871. At the level of maternal knowledge there is a relationship between the level of knowledge of mothers with the development of toddlers *p-value* 0,000. In family income there is a relationship between family income and the development of children under five p-value 0.001.

c. *Stunting* relationship with toddler development.

Stunting relations with the development of toddlers are presented in the following table:

Table 3. Data Analysis of *Stunting* Relationships with the Development of Toddlers 24-59 Months

Independent variable	Development.				*p-value*	RR	95% CI	
	AbNormal		Normal				L	U
	f	%	f	%				
Stunting event					0.003	2,308	1,328	4,010
Stunting	30	69,7	35	40,2				
Not *stunting*	13	30,3	52	59,8				

Based on table 3 shows that of 65 *stunting* toddlers there were 69.7% of toddlers who had developmental problems and 40.2% had normal development, while 65 under-fives were not stunting who had developmental disorders as much as 30.3% and 59.8% of toddlers not experiencing development problems. The chi-square test results are *p-value* 0.003 which means there is a relationship between *stunting* and the development of toddlers 24-59 months.

CONCLUSION

Toddlers are short (stunted) and very short (severely stunted) are toddlers with body length (PB / U) or height (TB / U) according to their age compared to the standard WHO-MGRS (Multicentre Growth Reference Study) 2006. Whereas the definition of *stunting* according to the Ministry of Health (Kemenkes) are toddlers with a score of z-score less than -2SD / standard deviation (stunted) and less than - 3SD (severely stunted) .[11] One indicator of the nutritional status of a baby born is the body length at birth besides weight at birth. The length of a baby is considered normal between 48 - 52 cm. So the birth length <48 cm is classified as a short baby. But if we want to link body length to birth with the risk of getting non-communicable diseases later in life, WHO recommends a limit value <50 cm.[12]

This research was conducted in May at several posyandu in the Sentolo I Health Center in KulonProgo Regency by looking at the MCH handbook and direct development checks using Denver II and mother's knowledge about development. The results of this study indicate that there is a stunting relationship with the development of toddlers 24-59 months with *p-value* 0.003. In this study it was found that *stunting* toddlers 69.7% experienced developmental disorders.

Stunting affects the development of toddlers because it has long-term effects on health performance. In this study it was found that there was a *stunting* relationship to the development of toddlers, namely with a *p-value* of 0.003 <0.005. This study is in accordance with the research conducted by Hanani 2016 in Jangli Semarang Village. The results showed that the *Stunting* had an effect on gross motoric development, fine motoric, language and social personal children. Data collected included data on subject characteristics, maternal characteristics, nutritional status, and child development. Nutritional status was measured by comparing height with age, and data on child development was measured by questionnaire Development Pre-Screening (KPSP). [13]

Children under 5 years in developing countries are exposed to various risks, including poverty, malnutrition, poor health, and an unstimulating home environment, which affects their cognitive, motor and social-emotional development. There are several national statistics on the development of children in developing countries. We therefore identified two factors with data available throughout the world - the prevalence of early childhood stunting

and the number of people living in absolute poverty - to be used as indicators of poor development. Show that both indicators are closely related to poor cognitive and educational performance in children and use them to estimate that more than 200 million children under 5 years do not fulfill their development potential. Children who are severely malnourished tend to perform poorly in school and then to low income, high fertility, and provide poor care for their children, thus contributing to intergenerational poverty transmission.[14]

Increase in height over 2 years is significantly related to changes in mental age, and the value of movement and hearing and the scale of speech subscale. Height increase in the first year is predicted to change in mental age, and hearing and speaking in the second year. Some of the effects of supplementation on development are divided by linear growth. Therefore, nutrition might explain part of the relationship between growth and development. However, supplementation also has an effect on development that is not dependent on growth. The benefits of supplementation on development and the extent to which they are shared with growth vary between subscales.[15]

Toddler sex and number of siblings are several family factors and customs in the family that influence development, gender and number of siblings are biological factors that can influence development but in this study we get results that gender and number of siblings are not related to development with *p-value* 0.808> 0.005 and 0.859> 0.005. The results of this study are not in accordance with Soetjahningsih's theory that family factors and customs that affect development include gender and number of siblings. Children of male sex are often sick compared to women but it is not known exactly what causes them. The number of children that have a lot of influence on the development of toddlers with sufficient socio-economic conditions will result in a lack of love and attention to children while in the economy it will also result in a lack of primary needs such as food, clothing and housing not met.[16]

The mother's level of education and mother's knowledge influence development because mothers with good knowledge know more about how to stimulate or stimulate toddlers so that their development is in accordance with their age. In this study found the results that maternal education has an effect on development with *p-value* 0.003 and maternal knowledge influences development with p-value 0.001. This is in accordance with the study (Hastuti, 2010) that mother's knowledge and mother's level of education is an important role in stimulating the potential of children. Parenting tasks are generally left to the mother based on the knowledge she has. One of the factors that influence knowledge is the education level of the mother. If mothers have high knowledge, they will be more active in seeking information to improve skills in childcare.[17]

Mother's work affects the development of children under five because working mothers are expected to be better able to meet the needs of toddlers from the economy. In this study there was no relationship between working mothers and the development of children with *p-value* 0.871> 0.005. This research is not in accordance with the Soetjaningsih Theory of the Family who works will support the development of toddlers because parents will provide all the needs of children both primary and secondary. According to Act No. 13 of 2013, employees who work 7 hours per day for 6 days of work, so that working mothers still have time to provide stimulation, love and affection, the quality of parent interaction to children.[16 18]

Family income influences the development of toddlers because it is expected that families who earn more than UMK are expected to be able to meet the nutritional needs of children under five, so that good toddler nutrition does not affect the development of toddlers. In this study it was found that there was a relationship between family income and the development of toddlers with *p-value* 0.001. This study is in accordance with Ozkan's research which states that socio-economic has a large influence on the development of children up to the age of five years, in this study the abnormal results of the denver test showed a high number, one of which was due to low parental education in which these factors would be related with low household income.[19]

Stunting in children under five is a consequence of several factors often associated with poverty including nutrition, health, sanitation and the environment. There are five main factors causing *stunting*, namely poverty, social and culture, increased exposure to infectious diseases, food insecurity and public access to health services. Factors related to chronic nutritional status in children under five are not the same between urban and rural areas, so the response efforts must be adjusted to the factors that influence. Stunting is a major nutritional problem that will have an impact on social and economic life in society. Stunting toddlers tend to have difficulty achieving optimal growth and development potential both physically and psychomotor.[20]suggestionthe benefits of this research areFor Sentolo I Health Centers The results of this study are expected to be used as input for Puskesmas in *stunting* and development services for children under five so as to reduce *stunting* and developmental problems in the Sentolo I Health Center in KulonProgo Regency. For Midwives and Child Mother Health Practitioners (MCH) The results of this study are expected to be used as information material in making activities in an effort to improve the nutritional status of infants and encourage the implementation of prevention efforts or eliminate the possibility of developing developmental problems in infants. For Researchers Next Expand the research area so that the results obtained can be generalized. Add to other characteristics that might affect the development of toddlers.

ACKNOWLEDGEMENTS

For Sentolo I Health Centers The results of this study are expected to be used as input for Puskesmas in *stunting* and development services for children under five so as to reduce *stunting* and developmental problems in the Sentolo I Health Center in KulonProgo Regency. For Midwives and Child Mother Health Practitioners (MCH) The results of this study are expected to be used as information material in making activities in an effort to improve the nutritional status of infants and encourage the implementation of prevention efforts or eliminate the possibility of developing developmental problems in infants. For Researchers Next Expand the research area so that the results obtained can be generalized. Add to other characteristics that might affect the development of toddlers.

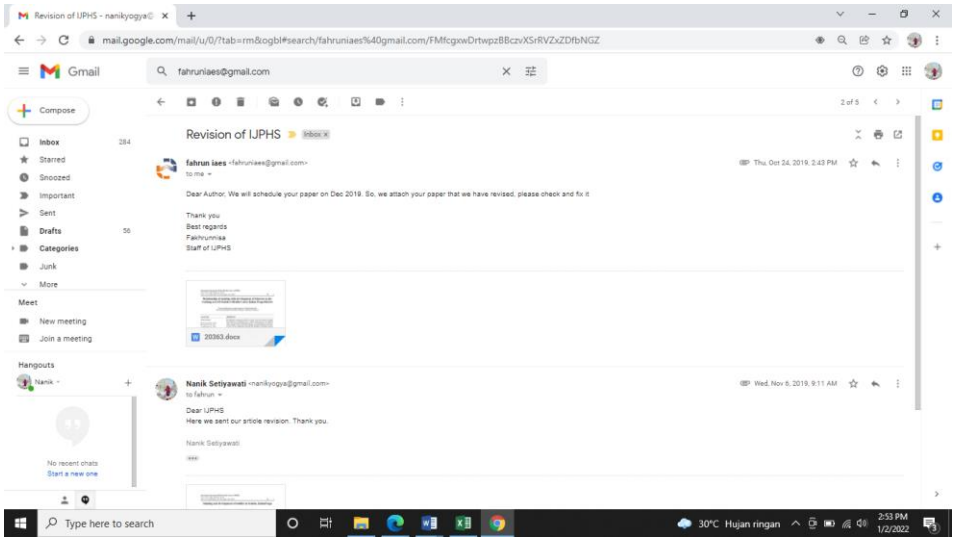
REFERENCESS

1. KementrianKesehatanRepublik Indonesia. Atasi 3 MasalahKesehatan. 2018. Diaksespadatanggal3 November 2018 pukul 18.00 WIB. Dari http://www.depkes.go.id/article/view/18030700005/rakerkesnas-2018-kemenkes-percepat-atasi-3-masalah-kesehatan.html.
2. Unicef. RingkasanKajianGiziibudananak. 2012. Diaksespadatanggal 28 Oktober 2018 pukul 14.00 WIB. Dari https://www.unicef.org/indonesia/id/A6_-_B_Ringkasan_Kajian_Gizi.pdf
3. Who. 2014. Global Nutrision Target 2025. Stunting Policy Brief. Geneva. Diaksespadatanggal 5 November 2018 pukul 16.00 WIB. Dari https:/www.who.int/nutrition/topics/globaltargets_stunting_policybrief.pdf
4. KementrianKesehatanRepublik Indonesia. InfodatinSituasiBalitaPendek. Jakarta; 2016. Diaksespadatanggal 28 Oktober 2018 pukul 14.00 WIB. Darihttp://www.depkes.go.id/resources/download/pusdatin/infodatin/situasi-balita-pendek-2016.pdf.
5. ProfilKesehatan Yogyakarta. Data InformasiProfilKesehatan Yogyakarta 2017. Diaksespadatanggal 28 Oktober 2018 pukul 14.00 WIB. Dari http://www.depkes.go.id/resources/download/profil/PROFILKES_PROVINSI_2017/14_DIY_2017.pdf.
6. Who. 2011. WHO child Growth Standars. Geneva. Word Heath Organinazation.Apps.who.ints/iris/bitstream/10665/43413/1/924154693X_eng.pdf. Diaksespadatanggal 1 November 2018 pukul 19.45 WIB.
7. KementrianKesehatan Indonesia. Data InformasiProfilKesehatan Indonesia 2017. KementrianKesehatan Indonesia; Jakarta 2018. Diaksespadapadatanggal 28 Oktober 2018 pukul 19.00 WIB. Dari http://www.depkes.go.id/resources/download/pusdatin/profil-kesehatan/Profil-Kesehatan-Indonesia-tahun-2017.pdf.
8. Who. 2013. Childhood *Stunting*: Challenges and opportunities. Diaksespadatanggal 4 Desember 2018 pukul 20.00 WIB. Dari https://apps.who.int/iris/bitstream/handle/10665/107026/WHO_NMH_NHD_GRS_14.1_eng.pdf;jsessionid=89D07C3A25C0DBE9A1E8405BBF5DFB6F?sequence=1
9. NotoatmodjoSoekidjo. MetodologiPenelitianKesehatan. Jakarta: RinekaCipta. 2014.
10. Sugiono. StatistikauntukPenelitian. Bandung: Alfabeta. 2017
11. BalitaBangkes.Pendek (Stunting) di Indonesia, MasalahdanSolusinya. 2015. Di aksespadatanggal 22 November 2018. Dari dihttp://www.tnp2k.go.id/images/uploads/downloads/Buku%20Ringkasan%20Stunting.pdf.

12. Unicef India. Stunting reflects chronic undernutrition during the most critical periods of growth and developmet in early life. Di aksespadatanggal 16 februari 2019 pukul 14.20 WIB. Dari Http://unicef.in/whatwedo/10/stunting.
13. Hanani. *Stunting*berpengaruhterhadapPerkembanganmotorikkasar, motorikhalus, bahasadan personal sosialanak. Kelurahanjanglisemarang. 2016Diaksespadatanggal 20 Oktober 2018 pukul 19.00 WIB. Dari https://media.neliti.com/media/publications/92844-ID-perbedaan perkembangan-motorik-kasar-mot.pdf.
14. Grantham all. Developmental potential in the fi rst 5 years for children in developing countries.2007. Diaksespadatanggal 2 agustus 2019 dari https://reader.elsevier.com/reader/sd/pii/S0140673607600324?token=30966874011A596FF452834098FEFA4D350FA5EE9C9FD7835CD0883C17950E91B0B14FBEC15E04CEEA21E11244B82C10
15. Powell All. Relationships between physical growth, mental development and nutritional supplementation in stunted children: the Jamaican study. 1995. Diakses pada tanggal 2 Agustus 2019 dari https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1651-2227.1995.tb13479.x
16. Soetjahningsih. IG,N,GdeRanuh. TumbuhKembangAnak. EGC; 2016.
17. Hastuti D 2010. NilaiAnak, StimulasiPsikososial, danPerkembanganKognitifAnakUsia 2-5 TahunpadaKeluargaRawanPangan di KabupatenBanjarnegara, Jawa Tengah, JurnalIlmuKesehatandanKonseling. 3(1): 27-34. (28 Oktober 2018) journal.ipb.ac.id.
18. Undang-UndangRepublik Indonesia No.13 Tahun 2013. Diaksespadatanggal 13 Juli 2019. Dari http://www.kemenperin.go.id/kompetensi/UU_13_2003.pdf
19. Ozkan, M., Senel, S., Arslan, E. A. &Karacan, C. D. The socioeconomic and biological risk factors for developmental delay in early childhood. European journal of pediatrics. 2012;171(12): 1815-1821. Diaksespadatanggal 4 maret 2019 pukul 19.50 WIB
20. Aridiyah et at. 2015. *Faktor-faktor yang MempengaruhiKejadian Stunting padaAnakBalita di Wilayah PedesaandanPerkotaan (The Factors Affecting Stunting on Toddlers in Rural and Urban Areas.* e-JurnalPustakaKesehatan. 3(1). 163-170.Diaksespadatanggal 21 April 2019 pukul 21.00

2. BUKTI KONFIRMASI REVIEW DAN HASIL REVIEW PERTAMA

(24 OKTOBER 2019)



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The following message is being delivered on behalf of International Journal of Public Health Science (IJPHS).

Dear Prof/Dr/Mr/Mrs: Nanik Setiyawati,

We have reached a decision regarding your submission entitled "Relationship of Stunting With Development Of Behavior In The Working Area Of Sentolo I Health Center KulonProgo District" to International Journal of Public Health Science (IJPHS), an OPEN ACCESS journal.

Our decision is to ACCEPT with revisions
- Adhere our template carefully
- extend the paper with 5 up to date journal papers

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A high quality paper MUST has:
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(2) the proposed solution(s)/method(s)/approach(es)/framework(s)/algorithm(s) ....
(3) results achieved. It describes clearly what has been done before on the problem, and what is new.

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- Content of updated abstract

Relationship of stunting with development of behavior in the working area Of Sentolo I Health Center Kulon Progo District

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Article Info

Article history:

Received Aug 28, 2019
Revised Nov 20, 2018
Accepted Jan 11, 2019

Keywords:

Development
Stunting
Toddlers

ABSTRACT

Development is an increase in ability in terms of structure and more complex body functions. Development has a regular pattern and can be predicted which is the result of the maturation process. *Stunting*toddlers can be known when a toddler is long or tall, then compared to normal standards and results. To find out the relationship between the incidence of stunting and the development of toddlers 24-59 months in the work area of Sentolo I Public Health Center, KulonProgo Regency. Knowing the relationship of characteristics with the development of toddlers 24-59 months in the work area of Sentolo I Public Health Center, KulonProgo Regency. The type of research carried out is a type of observational analytic (non-experimental) research. The study design used was a retrospective cohort (historical cohort). The research was conducted in May 2019. The population of this study was all under-fives under the Sentolo Health Center I. work area The samples used in this study were 130 respondents consisting of 65 exposed groups and 65 unexposed groups. The analysis used in this study used Chi-square.To detect developments using Denver II**.** The results of the bivariate analysis showed that there was a relationship between *Stunting* and the development of toddlers 24-59 months with *p*=0.003. There was no relationship between sex and number of siblings with the development of children under five *p*=0.808. There is a significant relationship between the level of knowledge of mothers and toddler development *p*=0.859. There is a relationship between the level of education of mothers with development *p*=0.003. There is a relationship between family income and the development of *p=0*.001, but there is no relationship between the work of mothers and children under five years *p*=0.001. There is a relationship between *stunting* and developing toddlers 24-59 months in the working area of Sentolo I Public Health Center, KulonProgo Regency.

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1. INTRODUCTION

There are three health problems that become Government programs, namely TB, Stunting and Immunization. Stunting is stunted growth (Growing Short) [1]. Stunting occurs due to failure during child development because health conditions and nutritional intake are not optimal. Stunting is often associated with socio-economic conditions, presenting several diseases and nutritional intake that lack quality and excess [2]. Stunting is a place where the tall body is shorter than the height body of others in general
(as appropriate). Children experience greater growth to become adults who are less educated, poor, unhealthy and vulnerable to non-communicable diseases [3].

Stunting is a condition in which a person's height is shorter than other people's height in general (as appropriate). Stunting occurs because the lack of nutritional intake received by the fetus/infant malnourished occurs since the baby is in the womb and at the beginning of the child's birth. According to Minister of Health Decree number 1995/KEMKES/SK/XII/2010 concerning anthropometric standards Ranking of nutritional status of children in accordance with the Body Length Index according to Age (PB/U) or Body Height by Age (TB/U) .Stunting toddlers can be known if a toddler has measured his length or height, then compared to the standard and the results are below normal. Short toddlers are toddlers with nutritional status based on length or height according to age when compared to the standard WHO-MGRS (Multicentre Growth Reference study) in 2015, the z-score is less than-2SD [4].

The stunting prevalence in Indonesia in 2013 was 37% but in 2018 it fell to 30.8% where the WHO limit was <20% so stunting was included in the health problems in Indonesia. This means that not optimal growth is experienced by around 8.9 million children in Indonesia or 1 in 3 children in Indonesia experiencing stunting where children who are stunted on average occur under the age of 5 years. The prevalence of short-term babies in DIY in 2015 was 14.86%, down in 2016 to 11% and again increasing in 2017 to 13.86% [5].

Development (development) is an increase in ability in terms of structure and function of the body that is more complex. Development has a regular pattern and can be predicted which is the result of the maturation process. The term development refers to the function of an organ or individual while growth (Growth) is a major change in terms of number and size at the level of organ cells and individuals or can be said to be a physical impact [6]. In the first year. In 2010 the disruption of child growth and development in Indonesia reached 35%. This figure exceeds the World Health Organization (WHO) limit of 30% [7].

According to WHO 2013, stunting can affect motor, cognitive, personal, social and language development which are short-term consequences for toddler development so that if not resolved can lead to long-term consequences namely health, development and economic problems [8]. The purpose of this study was to find out the stunting relationship with the development of toddlers 24-59 months. Knowing the relationship of characteristics to toddler development included toddler sex, number of siblings, level of mother's knowledge, maternal education level, maternal occupation and family income on toddler development.

The benefits of this study are to provide benefits and add insight into Stunting Relationship with the development of toddlers 24-59 months. For Sentolo I Health Centers The results of this study were

used as input for Puskesmas in stunting and development services for toddlers. For midwives and child health practitioners (KIA) it is hoped that the results of the research can be input and information to prevent abnormal development. For the next researcher, it is expected to be able to add information for the basis and reference of research by further research that will conduct research related to the development of toddlers.

2. RESEARCH METHOD

The type of research carried out is a type of observational analytic (non-experimental) research. The study design used was a retrospective cohort (historical cohort). The design was chosen because it is a good design in assessing the relationship between risk factors and their effects [9]. The population of this study were all toddlers in 2017 in the work area of Sentolo I Health Center in KulonProgo Regency with 1,572 toddlers. The sampling technique was done by purposive sampling, by making inclusion and exclusion criteria [10]. Sampel in this study For toddlers exposed to stunting samples needed 65 toddlers and non-stunting toddlers 65 toddlers so that the total sample was 130 toddlers Independent variables in this study were events stunting. In this study the dependent variable is the development of toddlers. This research has received the Ethics Eligibility from the Health Research Ethics Commission (KEPK) Health Polytechnic of the Ministry of Health Yogyakarta on May 21, 2019 with No.e_KEPK/POLTEKESYO/0081/V/2019.

3. RESULTS AND DISCUSSIONS

3.1. Characteristics of subjects

The characteristics of the research respondents can be seen in Table 1

Table 1. Data on *stunting* frequency distribution for toddlers' development 24-59 months

Variable	f	%
Stunting event		
Stunting	65	50
Not stunting	65	50
Total	130	100
Development		
Abnormal	43	33.1
normal	87	66.9
Total	130	100

Child sex		
man	57	43.8
women	73	56.2
Total	130	100
Number of siblings		
There is no brother	33	25.4
There are brothers	97	74.6
Total	130	100
Mother's education level		
Elementary, Middle School/equivalent	56	43.1
High school/equivalent	71	54.6
PT/equivalent	3	2.3
Total	130	100
Work		
Does not work	91	70
Work	39	30
Total	130	100
Level of mother's knowledge		
Less	16	12.3
Enough	63	48.5
Well	51	39.2
Total	130	100
Family income		
Less than UMK	85	65.4
More similar to the UMK	45	34.6
Total	130	100

Table 1 shows data from 130 respondents, divided into two groups, namely 50% of groups exposed and 50% of groups not exposed. Female sex 56.2% more than male sex 43.8%. In the number of siblings there were 74.6% having siblings and 25.4% toddlers who did not have relatives. At the level of maternal education there are more mothers with high school education levels of 54.6% while for mothers with elementary, junior high school level 43.1% and mothers with tertiary education level of 2.3%. At work 70% of mothers do not work and 30% are working mothers. For the level of knowledge of 48.5% of mothers with sufficient knowledge, 39.2% of mothers with good knowledge and 12.3% of mothers with

less knowledge. On family income 65.4% of families have income below the MSE and 34.9% of families with income equal to above the MSE.

3.2. Relationship characteristics with development

Characteristic relationship to the development of children under five is presented in Table 2

Table 2. Characteristic relationships with development

Independent variable	Development				*p-value*
	Abnormal		Normal		
	f	%	f	%	
Child sex					
man	20	46.5	37	42.5	
women	23	53.5	50	57.5	0.808
Total	43	100	87	100	
Number of siblings					
There is no brother	10	23.2	23	26.4	
There are brothers	33	76.8	64	73.6	0.859
Total	43	100	87	100	
Mother's education level					
Elementary, Middle School/equivalent	27	62.8	29	33.3	
High school/equivalent	16	37.2	55	63.2	0.003
PT/equivalent	0	0	3	3,5	
Total	43	100	87	100	
Work					
Does not work	31	72.1	60	68.9	
Work	12	27.9	27	31.1	0.871
Total	43	100	87	100	
Level of mother's knowledge					
Less	9	21	7	8	
Enough	27	62.8	36	41.4	0.000
Well	7	16.2	44	50.6	
Total	43	100	87	100	

Family income					
Less than UMK	37	86	48	55.2	
More similar to the UMK	6	14	39	44.8	0.001
Total	43	100	47	100	

Table 2 shows that there is no sex relationship with the development of toddlers p-value 0.808. The Table 2 shows that there is no relationship between the number of siblings and the development of children under five years p-value 0.859. At the maternal education level there is a relationship with the development of children under five p-value 0.003. In the mother's work there is no relationship between the work of the mother and the development of the toddler p-value 0.871. At the level of maternal knowledge there is a relationship between the level of knowledge of mothers with the development of toddlers p-value 0.000. In family income there is a relationship between family income and the development of children under five p-value 0.001.

3.3. Stunting relationship with toddler development

Stunting relations with the development of toddlers are presented in Table 3

Table 3. Data analysis of stunting relationships with the development of toddlers 24-59 months

Independent variable	Development.				*p-value*	RR	95% CI	
	AbNormal		Normal				L	U
	f	%	f	%				
Stunting event								
Stunting	30	69.7	35	40.2	0.003	2.308	1.328	4.010
Not *stunting*	13	30.3	52	59.8				

Based on Table 3 shows that of 65 *stunting* toddlers there were 69.7% of toddlers who had developmental problems and 40.2% had normal development, while 65 under-fives were not stunting who had developmental disorders as much as 30.3% and 59.8% of toddlers not experiencing development problems. The chi-square test results are *p-value* 0.003 which means there is a relationship between *stunting* and the development of toddlers 24-59 months.

4. CONCLUSION

Toddlers are short (stunted) and very short (severely stunted) are toddlers with body length (PB/U) or height (TB/U) according to their age compared to the standard WHO-MGRS (Multicentre Growth Reference Study) 2006. Whereas the definition of stunting according to the Ministry of Health (Kemenkes) are toddlers with a score of z-score less than-2SD/standard deviation (stunted) and less than-3SD (severely stunted) [11]. One indicator of the nutritional status of a baby born is the body length at birth besides weight at birth. The length of a baby is considered normal between 48-52 cm. So the birth length<48 cm is classified as a short baby. But if we want to link body length to birth with the risk of getting non-communicable diseases later in life, WHO recommends a limit value<50 cm [12].

This research was conducted in May at several posyandu in the Sentolo I Health Center in KulonProgo Regency by looking at the MCH handbook and direct development checks using Denver II and mother's knowledge about development. The results of this study indicate that there is a stunting relationship with the development of toddlers 24-59 months with p-value 0.003. In this study it was found that stunting toddlers 69.7% experienced developmental disorders.

Stunting affects the development of toddlers because it has long-term effects on health performance. In this study it was found that there was a stunting relationship to the development of toddlers, namely with a p-value of 0.003<0.005. This study is in accordance with the research conducted by Hanani 2016 in Jangli Semarang Village. The results showed that the Stunting had an effect on gross motoric development, fine motoric, language and social personal children. Data collected included data on subject characteristics, maternal characteristics, nutritional status, and child development. Nutritional status was measured by comparing height with age, and data on child development was measured by questionnaire Development Pre-Screening (KPSP) [13].

Children under 5 years in developing countries are exposed to various risks, including poverty, malnutrition, poor health, and an unstimulating home environment, which affects their cognitive, motor and social-emotional development. There are several national statistics on the development of children in developing countries. We therefore identified two factors with data available throughout the world-the prevalence of early childhood stunting and the number of people living in absolute poverty-to be used as indicators of poor development. Show that both indicators are closely related to poor cognitive and educational performance in children and use them to estimate that more than 200 million children under 5 years do not fulfill their development potential. Children who are severely malnourished tend to perform poorly in school and then to low income, high fertility, and provide poor care for their children, thus contributing to intergenerational poverty transmission [14].

Increase in height over 2 years is significantly related to changes in mental age, and the value of movement and hearing and the scale of speech subscale. Height increase in the first year is predicted to change in mental age, and hearing and speaking in the second year. Some of the effects of supplementation on development are divided by linear growth. Therefore, nutrition might explain part of the relationship between growth and development. However, supplementation also has an effect on

development that is not dependent on growth. The benefits of supplementation on development and the extent to which they are shared with growth vary between subscales [15].

Toddler sex and number of siblings are several family factors and customs in the family that influence development, gender and number of siblings are biological factors that can influence development but in this study we get results that gender and number of siblings are not related to development with p-value 0.808>0.005 and 0.859>0.005. The results of this study are not in accordance with Soetjahningsih's theory that family factors and customs that affect development include gender and number of siblings. Children of male sex are often sick compared to women but it is not known exactly what causes them. The number of children that have a lot of influence on the development of toddlers with sufficient socio-economic conditions will result in a lack of love and attention to children while in the economy it will also result in a lack of primary needs such as food, clothing and housing not met [16].

The mother's level of education and mother's knowledge influence development because mothers with good knowledge know more about how to stimulate or stimulate toddlers so that their development is in accordance with their age. In this study found the results that maternal education has an effect on development with p-value 0.003 and maternal knowledge influences development with p-value 0.001. This is in accordance with the study (Hastuti, 2010) that mother's knowledge and mother's level of education is an important role in stimulating the potential of children. Parenting tasks are generally left to the mother based on the knowledge she has. One of the factors that influence knowledge is the education level of the mother. If mothers have high knowledge, they will be more active in seeking information to improve skills in childcare [17].

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Mother's work affects the development of children under five because working mothers are expected to be better able to meet the needs of toddlers from the economy. In this study there was no relationship between working mothers and the development of children with p-value 0.871>0.005. This research is not in accordance with the Soetjaningsih Theory of the Family who works will support the development of toddlers because parents will provide all the needs of children both primary and secondary. According to Act No. 13 of 2013, employees who work 7 hours per day for 6 days of work, so that working mothers still have time to provide stimulation, love and affection, the quality of parent interaction to children [16, 18].

Family income influences the development of toddlers because it is expected that families who earn more than UMK are expected to be able to meet the nutritional needs of children under five, so that good toddler nutrition does not affect the development of toddlers. In this study it was found that there was a relationship between family income and the development of toddlers with p-value 0.001. This study is in accordance with Ozkan's research which states that socio-economic has a large influence on the development of children up to the age of five years, in this study the abnormal results of the denver test showed a high number, one of which was due to low parental education in which these factors would be related with low household income [19].

Stunting in children under five is a consequence of several factors often associated with poverty including nutrition, health, sanitation and the environment. There are five main factors causing stunting,

namely poverty, social and culture, increased exposure to infectious diseases, food insecurity and public access to health services. Factors related to chronic nutritional status in children under five are not the same between urban and rural areas, so the response efforts must be adjusted to the factors that influence.

Stunting is a major nutritional problem that will have an impact on social and economic life in society. Stunting toddlers tend to have difficulty achieving optimal growth and development potential both physically and psychomotor [20]. Suggestionthe benefits of this research areFor Sentolo I Health Centers The results of this study are expected to be used as input for Puskesmas in stunting and development services for children under five so as to reduce stunting and developmental problems in the Sentolo I Health Center in Kulon Progo Regency. For Midwives and Child Mother Health Practitioners (MCH) The results of this study are expected to be used as information material in making activities in an effort to improve the nutritional status of infants and encourage the implementation of prevention efforts or eliminate the possibility of developing developmental problems in infants. For Researchers Next Expand the research area so that the results obtained can be generalized. Add to other characteristics that might affect the development of toddlers.

ACKNOWLEDGEMENTS

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REFERENCES

[1] KementrianKesehatanRepublik Indonesia. Atasi 3 MasalahKesehatan. 2018. Diaksespadatanggal3 November 2018 pukul 18.00 WIB. Dari http://www.depkes.go.id/article/view/18030700005/rakerkesnas-2018-kemenkes-percepat-atasi-3-masalah-kesehatan.html.

[2] Unicef. RingkasanKajianGiziibudananak. 2012. Diaksespadatanggal 28 Oktober 2018 pukul 14.00 WIB. Dari https://www.unicef.org/indonesia/id/A6_-_B_Ringkasan_Kajian_Gizi.pdf

[3] Who. 2014. Global Nutrision Target 2025. Stunting Policy Brief. Geneva. Diaksespadatanggal 5 November 2018 pukul 16.00 WIB. Dari https:/www.who.int/nutrition/topics/globaltargets_stunting_policybrief.pdf

[4] KementrianKesehatanRepublik Indonesia. InfodatinSituasiBalitaPendek. Jakarta; 2016. Diaksespadatanggal 28 Oktober 2018 pukul 14.00 WIB. Darihttp://www.depkes.go.id/resources/download/pusdatin/infodatin/situasi-balita-pendek-2016.pdf.

[5] ProfilKesehatan Yogyakarta. Data InformasiProfilKesehatan Yogyakarta 2017. Diaksespadatanggal 28 Oktober 2018 pukul 14.00 WIB. Dari http://www.depkes.go.id/resources/download/profil/PROFILKES_PROVINSI_2017/14_DIY_2017.pdf.

[6] Who. 2011. WHO child Growth Standars. Geneva. Word Heath Organinazation.Apps.who.ints/iris/bitstream/10665/43413/1/924154693X_eng.pdf. Diaksespadatanggal 1 November 2018 pukul 19.45 WIB.
[7] KementrianKesehatan Indonesia. Data InformasiProfilKesehatan Indonesia 2017. KementrianKesehatan Indonesia; Jakarta 2018. Diaksespadapadatanggal 28 Oktober 2018 pukul 19.00 WIB. Dari http://www.depkes.go.id/resources/download/pusdatin/profil-kesehatan/Profil-Kesehatan-Indonesia-tahun-2017.pdf.
[8] Who. 2013. Childhood Stunting: Challenges and opportunities. Diaksespadatanggal 4 Desember 2018 pukul 20.00 WIB. Dari https://apps.who.int/iris/bitstream/handle/10665/107026/WHO_NMH_NHD_GRS_14.1_eng.pdf;jsessionid=89D07C3A25C0DBE9A1E8405BBF5DFB6F?sequence=1
[9] NotoatmodjoSoekidjo. MetodologiPenelitianKesehatan. Jakarta: RinekaCipta. 2014.
[10] Sugiono. StatistikauntukPenelitian. Bandung: Alfabeta. 2017
[11] BalitaBangkes.Pendek (Stunting) di Indonesia, MasalahdanSolusinya. 2015. Di aksespadatanggal 22 November 2018. Dari dihttp://www.tnp2k.go.id/images/uploads/downloads/Buku%20Ringkasan%20Stunting.pdf.
[12] Unicef India. Stunting reflects chronic undernutrition during the most critical periods of growth and developmet in early life. Di aksespadatanggal 16 februari 2019 pukul 14.20 WIB. Dari Http://unicef.in/whatwedo/10/stunting.
[13] Hanani. StuntingberpengaruhterhadapPerkembanganmotorikkasar, motorikhalus, bahasadan personal sosialanak. Kelurahanjanglisemarang. 2016Diaksespadatanggal 20 Oktober 2018 pukul 19.00 WIB. Dari https://media.neliti.com/media/publications/92844-ID-perbedaan perkembangan-motorik-kasar-mot.pdf.
[14] Grantham all. Developmental potential in the fi rst 5 years for children in developing countries.2007. Diaksespadatanggal 2 agustus 2019 dari https://reader.elsevier.com/reader/sd/pii/S0140673607600324?token=30966874011A596FF452834098FEFA4D350FA5EE9C9FD7835CD0883C17950E91B0B14FBEC15E04CEEA21E11244B82C10
[15] Powell All. Relationships between physical growth, mental development and nutritional supplementation in stunted children: the Jamaican study. 1995. Diakses pada tanggal 2 Agustus 2019 dari https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1651-2227.1995.tb13479.x
[16] Soetjahningsih. IG,N,GdeRanuh. TumbuhKembangAnak. EGC; 2016.
[17] Hastuti D 2010. NilaiAnak, StimulasiPsikososial, danPerkembanganKognitifAnakUsia 2-5 TahunpadaKeluargaRawanPangan di KabupatenBanjarnegara, Jawa Tengah, JurnalIlmuKesehatandanKonseling. 3(1): 27-34. (28 Oktober 2018) journal.ipb.ac.id.
[18] Undang-UndangRepublik Indonesia No.13 Tahun 2013. Diaksespadatanggal 13 Juli 2019. Dari http://www.kemenperin.go.id/kompetensi/UU_13_2003.pdf
[19] Ozkan, M., Senel, S., Arslan, E. A. &Karacan, C. D. The socioeconomic and biological risk factors for developmental delay in early childhood. European journal of pediatrics. 2012;171(12): 1815-1821. Diaksespadatanggal 4 maret 2019 pukul 19.50 WIB
[20] Aridiyah et at. 2015. Faktor-faktor yang MempengaruhiKejadian Stunting padaAnakBalita di Wilayah PedesaandanPerkotaan (The Factors Affecting Stunting on Toddlers in Rural and Urban Areas. e-JurnalPustakaKesehatan. 3(1). 163-170.Diaksespadatanggal 21 April 2019 pukul 21.00

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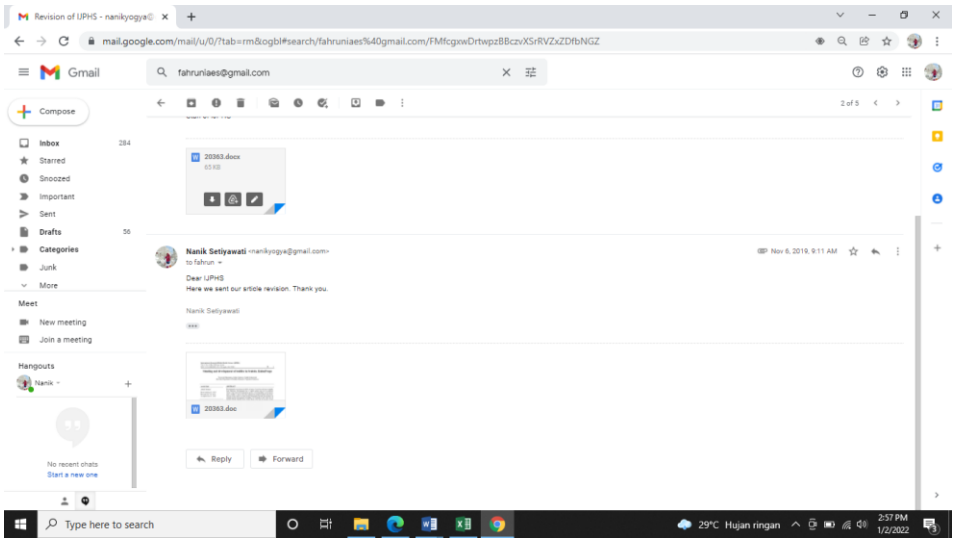
3. BUKTI REVISI HASIL REVIEW PERTAMA (6 NOVEMBER 2019)



Stunting and development of toddler in Sentolo, KulonProgo

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Article Info

Article history:

ReceivedAug 28, 2019

Revised Nov 20, 2018

Accepted Jan 11, 2019

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Development

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5. INTRODUCTION

There are three health problems that become Government programs, namely TB, Stunting and Immunization. Stunting is stunted growth (Growing Short) [1].Stunting occurs due to failure during child development because health conditions and nutritional intake are not optimal. Stunting is often associated with socio-economic conditions, presenting several diseases and nutritional intake that lack quality and excess [2]. Stunting is a place where the tall body is shorter than the height body of others in general
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Stunting is a condition in which a person's height is shorter than other people's height in general (as appropriate). Stunting occurs because the lack of nutritional intake received by the fetus/infant malnourished occurs since the baby is in the womb and at the beginning of the child's birth. According to Minister of Health Decree number 1995/KEMKES/SK/XII/2010 concerning anthropometric standards Ranking of nutritional status of children in accordance with the Body Length Index according to Age (PB/U) or Body Height by Age (TB/U) .Stunting toddlers can be known if a toddler has measured his length or height, then compared to the standard and the results are below normal. Short toddlers are toddlers with nutritional status based on length or height according to age when compared to the standard WHO-MGRS (Multicentre Growth Reference study) in 2015, the z-score is less than-2SD [4].

The stunting prevalence in Indonesia in 2013 was 37% but in 2018 it fell to 30.8% where the WHO limit was <20% so stunting was included in the health problems in Indonesia. This means that not optimal growth is experienced by around 8.9 million children in Indonesia or 1 in 3 children in Indonesia experiencing stunting where children who are stunted on average occur under the age of 5 years. The prevalence of short-term babies in DIY in 2015 was 14.86%, down in 2016 to 11% and again increasing in 2017 to 13.86% [5].

Development (development) is an increase in ability in terms of structure and function of the body that is more complex. Development has a regular pattern and can be predicted which is the result of the maturation process. The term development refers to the function of an organ or individual while growth (Growth) is a major change in terms of number and size at the level of organ cells and individuals or can be said to be a physical impact [6]. In the first year. In 2010 the disruption of child growth and development in Indonesia reached 35%. This figure exceeds the World Health Organization (WHO) limit of 30% [7].

According to WHO 2013, stunting can affect motor, cognitive, personal, social and language development which are short-term consequences for toddler development so that if not resolved can lead to long-term consequences namely health, development and economic problems [8].The purpose of this study was to find out the stunting relationship with the development of toddlers 24-59 months. Knowing the relationship of characteristics to toddler development included toddler sex, number of siblings, level of mother's knowledge, maternal education level, maternal occupation and family income on toddler development.

The benefits of this study are to provide benefits and add insight into Stunting Relationship with the development of toddlers 24-59 months. For Sentolo I Health Centers The results of this study were used as input for Puskesmas in stunting and development services for toddlers. For midwives and child health practitioners (KIA) it is hoped that the results of the research can be input and information to prevent abnormal development. For the next researcher, it is expected to be able to add information for the basis and reference of research by further research that will conduct research related to the development of toddlers.

6. RESEARCH METHOD

The type of research carried out is a type of observational analytic (non-experimental) research. The study design used was a retrospective cohort (historical cohort). The design was chosen because it is a good design in assessing the relationship between risk factors and their effects [9]. The population of this study were all toddlers in 2017 in the work area of Sentolo I Health Center in KulonProgo Regency with 1,572 toddlers. The sampling technique was done by purposive sampling, by making inclusion and exclusion criteria [10].Sampel in this study For toddlers exposed to stunting samples needed 65 toddlers and non-stunting toddlers 65 toddlers so that the total sample was 130 toddlers Independent variables in this study were events stunting. In this study the dependent variable is the development of toddlers. This research has received the Ethics Eligibility from the Health Research Ethics Commission (KEPK) Health Polytechnic of the Ministry of Health Yogyakarta on May 21, 2019 with No.e_KEPK/POLTEKESYO/0081/V/2019.

7. RESULTS AND DISCUSSIONS

3.1.Characteristics of subjects

The characteristics of the research respondents can be seen in Table 1

Table 1. Data on *stunting* frequency distribution for toddlers' development 24-59 months

Variable	f	%
Stunting event		
Stunting	65	50
Not stunting	65	50
Total	130	100
Development		
Abnormal	43	33.1

normal	87	66.9
Total	130	100
Child sex		
man	57	43.8
women	73	56.2
Total	130	100
Number of siblings		
There is no brother	33	25.4
There are brothers	97	74.6
Total	130	100
Mother's education level		
Elementary, Middle School/equivalent	56	43.1
High school/equivalent	71	54.6
PT/equivalent	3	2.3
Total	130	100
Work		
Does not work	91	70
Work	39	30
Total	130	100
Level of mother's knowledge		
Less	16	12.3
Enough	63	48.5
Well	51	39.2
Total	130	100
Family income		
Less than UMK	85	65.4
More similar to the UMK	45	34.6
Total	130	100

Table 1 shows data from 130 respondents, divided into two groups, namely 50% of groups exposed and 50% of groups not exposed. Female sex 56.2% more than male sex 43.8%. In the number of siblings there were 74.6% having siblings and 25.4% toddlers who did not have relatives. At the level of maternal education there are more mothers with high school education levels of 54.6% while for mothers with elementary, junior high school level 43.1% and mothers with tertiary education level of 2.3%. At work

70% of mothers do not work and 30% are working mothers. For the level of knowledge of 48.5% of mothers with sufficient knowledge, 39.2% of mothers with good knowledge and 12.3% of mothers with less knowledge. On family income 65.4% of families have income below the MSE and 34.9% of families with income equal to above the MSE.

3.2.Relationship characteristics with development

Characteristic relationship to the development of children under five is presented in Table 2

Table 2. Characteristic relationships with development

Independent variable	Development				*p-value*
	Abnormal		Normal		
	f	%	f	%	
Child sex					
man	20	46.5	37	42.5	
women	23	53.5	50	57.5	0.808
Total	43	100	87	100	
Number of siblings					
There is no brother	10	23.2	23	26.4	
There are brothers	33	76.8	64	73.6	0.859
Total	43	100	87	100	
Mother's education level					
Elementary, Middle School/equivalent	27	62.8	29	33.3	
High school/equivalent	16	37.2	55	63.2	
PT/equivalent	0	0	3	3,5	0.003
Total	43	100	87	100	
Work					
Does not work	31	72.1	60	68.9	
Work	12	27.9	27	31.1	0.871
Total	43	100	87	100	
Level of mother's knowledge					
Less	9	21	7	8	
Enough	27	62.8	36	41.4	0.000
Well	7	16.2	44	50.6	

Total	43	100	87	100	
Family income					
Less than UMK	37	86	48	55.2	
More similar to the UMK	6	14	39	44.8	0.001
Total	43	100	47	100	

Table 2 shows that there is no sex relationship with the development of toddlers p-value 0.808. The Table 2 shows that there is no relationship between the number of siblings and the development of children under five years p-value 0.859. At the maternal education level there is a relationship with the development of children under five p-value 0.003. In the mother's work there is no relationship between the work of the mother and the development of the toddler p-value 0.871. At the level of maternal knowledge there is a relationship between the level of knowledge of mothers with the development of toddlers p-value 0.000. In family income there is a relationship between family income and the development of children under five p-value 0.001.

3.3.Stunting relationship with toddler development

Stuntingrelations with the development of toddlers are presented in Table 3

Table 3. Data analysis of stunting relationships with the development of toddlers 24-59 months

Independent variable	Development.				*p-value*	RR	95% CI	
	AbNormal		Normal				L	U
	f	%	f	%				
Stunting event								
Stunting	30	69.7	35	40.2	0.003	2.308	1.328	4.010
Not *stunting*	13	30.3	52	59.8				

Based on Table 3 shows that of 65 *stunting* toddlers there were 69.7% of toddlers who had developmental problems and 40.2% had normal development, while 65 under-fives were not stunting who had developmental disorders as much as 30.3% and 59.8% of toddlers not experiencing development

problems. The chi-square test results are *p-value* 0.003 which means there is a relationship between *stunting* and the development of toddlers 24-59 months.

8. CONCLUSION

Toddlers are short (stunted) and very short (severely stunted) are toddlers with body length (PB/U) or height (TB/U) according to their age compared to the standard WHO-MGRS (Multicentre Growth Reference Study) 2006. Whereas the definition of stunting according to the Ministry of Health (Kemenkes) are toddlers with a score of z-score less than-2SD/standard deviation (stunted) and less than-3SD (severely stunted) [11]. One indicator of the nutritional status of a baby born is the body length at birth besides weight at birth. The length of a baby is considered normal between 48-52 cm. So the birth length<48 cm is classified as a short baby. But if we want to link body length to birth with the risk of getting non-communicable diseases later in life, WHO recommends a limit value<50 cm [12].

This research was conducted in May at several posyandu in the Sentolo I Health Center in KulonProgo Regency by looking at the MCH handbook and direct development checks using Denver II and mother's knowledge about development. The results of this study indicate that there is a stunting relationship with the development of toddlers 24-59 months with p-value 0.003. In this study it was found that stunting toddlers 69.7% experienced developmental disorders.

Stunting affects the development of toddlers because it has long-term effects on health performance. In this study it was found that there was a stunting relationship to the development of toddlers, namely with a p-value of 0.003<0.005. This study is in accordance with the research conducted by Hanani 2016 in Jangli Semarang Village. The results showed that the Stunting had an effect on gross motoric development, fine motoric, language and social personal children. Data collected included data on subject characteristics, maternal characteristics, nutritional status, and child development. Nutritional status was measured by comparing height with age, and data on child development was measured by questionnaire Development Pre-Screening (KPSP) [13].

Children under 5 years in developing countries are exposed to various risks, including poverty, malnutrition, poor health, and an unstimulating home environment, which affects their cognitive, motor and social-emotional development. There are several national statistics on the development of children in developing countries. We therefore identified two factors with data available throughout the world-the prevalence of early childhood stunting and the number of people living in absolute poverty-to be used as indicators of poor development. Show that both indicators are closely related to poor cognitive and educational performance in children and use them to estimate that more than 200 million children under 5 years do not fulfill their development potential. Children who are severely malnourished tend to perform poorly in school and then to low income, high fertility, and provide poor care for their children, thus contributing to intergenerational poverty transmission [14].

Increase in height over 2 years is significantly related to changes in mental age, and the value of movement and hearing and the scale of speech subscale. Height increase in the first year is predicted to change in mental age, and hearing and speaking in the second year. Some of the effects of supplementation on development are divided by linear growth. Therefore, nutrition might explain part of

the relationship between growth and development. However, supplementation also has an effect on development that is not dependent on growth. The benefits of supplementation on development and the extent to which they are shared with growth vary between subscales [15].

Toddler sex and number of siblings are several family factors and customs in the family that influence development, gender and number of siblings are biological factors that can influence development but in this study we get results that gender and number of siblings are not related to development with p-value 0.808>0.005 and 0.859>0.005. The results of this study are not in accordance with Soetjahningsih's theory that family factors and customs that affect development include gender and number of siblings. Children of male sex are often sick compared to women but it is not known exactly what causes them.
The number of children that have a lot of influence on the development of toddlers with sufficient socio-economic conditions will result in a lack of love and attention to children while in the economy it will also result in a lack of primary needs such as food, clothing and housing not met [16].

The mother's level of education and mother's knowledge influence development because mothers with good knowledge know more about how to stimulate or stimulate toddlers so that their development is in accordance with their age. In this study found the results that maternal education has an effect on development with p-value 0.003 and maternal knowledge influences development with p-value 0.001.
This is in accordance with the study ((that mother's knowledge and mother's level of education is an important role in stimulating the potential of children. Parenting tasks are generally left to the mother based on the knowledge she has. One of the factors that influence knowledge is the education level of the mother. If mothers have high knowledge, they will be more active in seeking information to improve skills in childcare [17].

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Mother's work affects the development of children under five because working mothers are expected to be better able to meet the needs of toddlers from the economy. In this study there was no relationship between working mothers and the development of children with p-value 0.871>0.005. This research is not in accordance with the Soetjaningsih Theory of the Family who works will support the development of toddlers because parents will provide all the needs of children both primary and secondary. According to Act No. 13 of 2013, employees who work 7 hours per day for 6 days of work, so that working mothers still have time to provide stimulation, love and affection, the quality of parent interaction to children [16,18].

Family income influences the development of toddlers because it is expected that families who earn more than UMK are expected to be able to meet the nutritional needs of children under five, so that good toddler nutrition does not affect the development of toddlers. In this study it was found that there was
a relationship between family income and the development of toddlers with p-value 0.001. This study is in accordance with Ozkan's research which states that socio-economic has a large influence on the development of children up to the age of five years, in this study the abnormal results of the denver test showed a high number, one of which was due to low parental education in which these factors would be related with low household income [19].

Stunting in children under five is a consequence of several factors often associated with poverty including nutrition, health, sanitation and the environment. There are five main factors causing stunting, namely poverty, social and culture, increased exposure to infectious diseases, food insecurity and public access to health services. Factors related to chronic nutritional status in children under five are not the same between urban and rural areas, so the response efforts must be adjusted to the factors that influence.

Stunting is a major nutritional problem that will have an impact on social and economic life in society. Stunting toddlers tend to have difficulty achieving optimal growth and development potential both physically and psychomotor [20]. Stunting children impairment rate increased with age reaching 21% in three years children [21]. Given that nearly 40% of children under age five suffer from loss of developmental potential - for which stunting is likely one of the key risk factors - reductions in stunting could have tremendous implications for child development [22]. Suggestion the benefits of this research are For Sentolo I Health Centers The results of this study are expected to be used as input for Puskesmas in stunting and development services for children under five so as to reduce stunting and developmental problems in the Sentolo I Health Center in KulonProgo Regency. For Midwives and Child Mother Health Practitioners (MCH) The results of this study are expected to be used as information material in making activities in an effort to improve the nutritional status of infants and encourage the implementation of prevention efforts or eliminate the possibility of developing developmental problems in infants. For Researchers Next Expand the research area so that the results obtained can be generalized. Add to other characteristics that might affect the development of toddlers.

ACKNOWLEDGEMENTS

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REFERENCES

[21] Ministry of Health Indonesia. Atasi 3 masalah kesehatan. 2018. Available from: http://www.depkes.go.id/article/view/18030700005/rakerkesnas-2018-kemenkes-percepat-atasi-3-masalah-kesehatan.html.

[22] Unicef. Ringkasan kajian gizi ibu dan anak. 2012. Available from: https://www.unicef.org/indonesia/id/A6_-_B_Ringkasan_Kajian_Gizi.pdf

[23] WHO. 2014. Global Nutrision Target 2025. Stunting policy brief. Geneva. Available from: https:/www.who.int/nutrition/topics/globaltargets_stunting_policybrief.pdf

[24] Ministry of Health Indonesia. Infodatin situasi balita pendek. Jakarta; 2016. Available from: http://www.depkes.go.id/resources/download/pusdatin/infodatin/situasi-balita-pendek-2016.pdf.
[25] Profil Kesehatan Yogyakarta. Data InformasiProfilKesehatan Yogyakarta2017. Available from: http://www.depkes.go.id/resources/download/profil/PROFILKES_PROVINSI_2017/14_DIY_2017.pdf.
[26] WHO. 2011. WHO child growth standards. Geneva. Word Health Organinazation.Apps.who.ints/iris/bitstream/10665/43413/1/924154693X_eng.pdf.
[27] Ministry of Health Indonesia. Data informasi profil kesehatan Indonesia 2017. Kementrian Kesehatan Indonesia; Jakarta 2018. Available from: http://www.depkes.go.id/resources/download/pusdatin/profil-kesehatan/Profil-Kesehatan-Indonesia-tahun-2017.pdf.
[28] WHO. 2013. Childhood Stunting: Challenges and opportunities. Available from: https://apps.who.int/iris/bitstream/handle/10665/107026/WHO_NMH_NHD_GRS_14.1_eng.pdf;jsessionid=89D07C3A25C0DBE9A1E8405BBF5DFB6F?sequence=1
[29] Notoatmodjo Soekidjo. metodologi penelitian kesehatan. Jakarta: RinekaCipta. 2014.
[30] Sugiono. Statistika untuk penelitian. Bandung: Alfabeta. 2017
[31] Balita Bangkes. Pendek (Stunting) di Indonesia, MasalahdanSolusinya.2015. Available from: http://www.tnp2k.go.id/images/uploads/downloads/Buku%20Ringkasan%20Stunting.pdf.
[32] Unicef India. Stunting reflects chronic undernutrition during the most critical periods of growth and developmet in early life. Available from: Http://unicef.in/whatwedo/10/stunting.
[33] Hanani. Stunting berpengaruh terhadap perkembangan motorik kasar, motorikhalus, bahasadan personal sosialanak. Kelurahanjanglisemarang. Available from: https://media.neliti.com/media/publications/92844-ID-perbedaan perkembangan-motorik-kasar-mot.pdf.
[34] Grantham all. Developmental potential in the first 5 years for children in developing countries.2007. Available from: https://reader.elsevier.com/reader/sd/pii/S0140673607600324?token=30966874011A596FF452834098FEFA4D350FA5EE9C9FD7835CD0883C17950E91B0B14FBEC15E04CEEA21E11244B82C10
[35] Powell All. Relationships between physical growth, mental development and nutritional supplementation in stunted children: the Jamaican study. 1995. Available from: https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1651-2227.1995.tb13479.x
[36] Soetjahningsih. IG,N,GdeRanuh. TumbuhKembangAnak. EGC; 2016.
[37] Hastuti D 2010. Nilai anak, stimulasi psikososial, dan perkembangan kognitif anak usia 2-5 tahun pada keluarga rawan pangan di kabupaten Banjarnegara, Jawa Tengah, Jurnal Ilmu Kesehatan dan Konseling. 3(1): 27-34. (28 Oktober 2018) journal.ipb.ac.id. Available from: http://journal.ipb.ac.id/index.php/jikk/article/view/5181
[38] Undang-Undang Republik Indonesia No.13 Tahun 2013. Available from: http://www.kemenperin.go.id/kompetensi/UU_13_2003.pdf
[39] Ozkan, M., Senel, S., Arslan, E. A. &Karacan, C. D. The socioeconomic and biological risk factors for developmental delay in early childhood. European journal of pediatrics.;171(12): 1815-1821. 2012. Available from: https://www.researchgate.net/profile/Saliha_Senel/publication/230863775_The_socioeconomic_and_biological_risk_factors_for_developmental_delay_in_early_childhood/links/54dfb21f0cf29666378be502.pdf
[40] Aridiyah et at. 2015. The factors affecting stunting on toddlers in rural and urban areas. e-Jurnal Pustaka Kesehatan. 3(1). 163-170.
[41] Bove I, Miranda T, Campoy C, Uauy R. Napol M. Stunting, overweight and child development go hand as key problems of early infancy: Uruguayan case. Early Human Development-03639(5) Elsevier. 2012. Available from: https://www.sciencedirect.com/science/article/pii/S0378378212000965
[42] Perkins J,Rockli K, Krishna A, McGovern, Aguayo VM, Subramanian SV. Understanding the asoociation between stunting and shild development in low-and middle income countries: next steps for research and intervention. Social Science and Medicine, 193, 101-109. 2017. Available from: https://pureadmin.qub.ac.uk/ws/portalfiles/portal/136420753/Stunting_SSM.pdf

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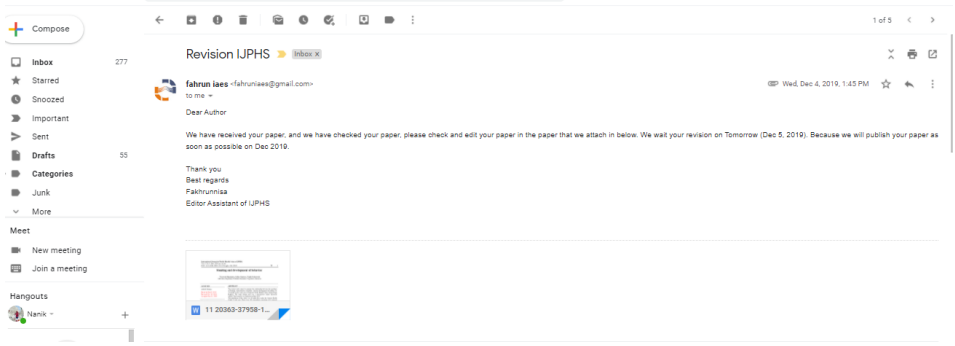
4. BUKTI KONFIRMASI REVIEW DAN HASIL REVIEW KEDUA

(4 DESEMBER 2019)



Stunting and development of behavior

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Article Info

Article history:

Received Jun 9, 2018
Revised Nov 20, 2018
Accepted Jan 11, 2019

Keywords:

Development
Stunting
Toddlers

ABSTRACT

The current study aimed to examine the relationship between the incidence of Stunting, characteristics of mother with the development of toddlers 24-59 months in the work area of Sentolo I Public Health Center, Kulon Progo Regency. The study design used was a retrospective cohort (historical cohort). The research was conducted in May 2019. The population of this study was all under-fives under the Sentolo Health Center I work area. There were 130 respondents consisting of 65 exposed groups and 65 unexposed groups participated in this study. The analysis used in this study used Chi-square. Developments was detected using Denver II. The results of the bivariate analysis showed that there was a relationship between Stunting and the development of toddlers 24-59 months (p=0.003). There was no relationship between sex and number of siblings with the development of children under five (p=0.808). There is a significant relationship between the level of knowledge of mothers and toddler development (p=0.859). There is a relationship between the level of education of mothers with development (p=0.003). There is a relationship between family income and the development of (p=0.001), but there is no relationship between the work of mothers and children under five years (p=0.001). There is a relationship between Stunting and developing toddlers 24-59 months in the working area of Sentolo I Public Health Center, Kulon Progo Regency.

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9. INTRODUCTION

There are three health problems that become Government programs, namely TB, Stunting and Immunization. Stunting is stunted growth (Growing Short) [1]. Stunting occurs due to failure during child development because health conditions and nutritional intake are not optimal. Stunting is often

associated with socio-economic conditions, presenting several diseases and nutritional intake that lack quality and excess [2]. Stunting is a place where the tall body is shorter than the height body of others in general
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Development is an increase in ability in terms of structure and function of the body that is more complex. Development has a regular pattern and can be predicted which is the result of the maturation process. The term development refers to the function of an organ or individual while growth (Growth) is a major change in terms of number and size at the level of organ cells and individuals or can be said to be a physical impact [6] in the first year. In 2010 the disruption of child growth and development in Indonesia reached 35%. This figure exceeds the World Health Organization (WHO) limit of 30% [7].

According to WHO 2013, Stunting can affect motor, cognitive, personal, social and language development which are short-term consequences for toddler development so that if not resolved can lead to long-term consequences namely health, development and economic problems [8]. The purpose of this study was to find out the stunting relationship with the development of toddlers 24-59 months. Knowing the relationship of characteristics to toddler development included toddler sex, number of siblings, level of mother's knowledge, maternal education level, maternal occupation and family income on toddler development.

The benefits of this study are to provide benefits and add insight into Stunting Relationship with the development of toddlers 24-59 months. For Sentolo I Health Centers The results of this study were used as input for Puskesmas in Stunting and development services for toddlers. For midwives and child health practitioners (KIA) it is hoped that the results of the research can be input and information to prevent abnormal development. For the next researcher, it is expected to be able to add information for the basis and reference of research by further research that will conduct research related to the development of toddlers.

10. METHOD

The type of research carried out is a type of observational analytic (non-experimental) research. The study design used was a retrospective cohort (historical cohort). The design was chosen because it is a good design in assessing the relationship between risk factors and their effects [9]. The population of this study were all toddlers in 2017 in the work area of Sentolo I Health Center in KulonProgo Regency with 1,572 toddlers. The sampling technique was done by purposive sampling, by making inclusion and exclusion criteria [10]. The sample size was 130 toddlers. This research was approved by Health Research Ethics Commission (KEPK) Health Polytechnic of the Ministry of Health Yogyakarta on May 21, 2019 with No.e_KEPK /POLTEKESYO/0081/V/2019.

11. RESULTS AND DISCUSSION

Data is gathered from 130 respondents, divided into two groups, namely 50% of groups exposed and 50% of groups not exposed. Female sex 56.2% more than male sex 43.8%. In the number of siblings there were 74.6% having siblings and 25.4% toddlers who did not have relatives. At the level of maternal education there are more mothers with high school education levels of 54.6% while for mothers with elementary, junior high school level 43.1% and mothers with tertiary education level of 2.3%. At work 70% of mothers do not work and 30% are working mothers. For the level of knowledge of 48.5% of mothers with sufficient knowledge, 39.2% of mothers with good knowledge and 12.3% of mothers with less knowledge. Family income is majority low income (65.4%).

3.1. Relationship characteristics with development

Characteristic relationship to the development of children under five is presented in the following table. Table 1 shows that there is no sex relationship with the development of toddlers p-value 0.808. The table shows that there is no relationship between the number of siblings and the development of children under five years p-value 0.859. At the maternal education level there is a relationship with the development of children under five p-value 0.003. In the mother's work there is no relationship between the work of the mother and the development of the toddler p-value 0.871. At the level of maternal knowledge there is a relationship between the level of knowledge of mothers with the development of toddlers p-value 0,000. In family income there is a relationship between family income and the development of children under five p-value 0.001.

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There is no brother					
There are brothers	10	23.2	23	26.4	0.859
	33	76.8	64	73.6	
Total	43	100	87	100	
Mother's education level					
Elementary, Middle School / equivalent					
High school / equivalent					0.003
PT / equivalent					
	27	62.8	29	33.3	
	16	37.2	55	63.2	
	0	0	3	3.5	
Total	43	100	87	100	
Work					
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Work	31	72.1	60	68.9	0.871
	12	27.9	27	31.1	
Total	43	100	87	100	
Level of mother's knowledge					
Less					
Enough	9	21	7	8	0.000
Well					
	27	62.8	36	41.4	
	7	16.2	44	50.6	
Total	43	100	87	100	
Family income					
Less than UMK					
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Total	43	100	47	100	

3.2. Stunting relationship with toddler development

This research found that shows of 65 stunting toddlers there were 69.7% of toddlers who had developmental problems and 40.2% had normal development, while 65 under-fives were not Stunting who had developmental disorders as much as 30.3% and 59.8% of toddlers not experiencing development problems. The Chi-square test results are *p-value* 0.003 which means there is a relationship between Stunting and the development of toddlers 24-59 months.

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stunted) [11]. One indicator of the nutritional status of a baby born is the body length at birth besides weight at birth. The length of a baby is considered normal between 48-52 cm. So the birth length<48 cm is classified as a short baby. But if we want to link body length to birth with the risk of getting non-communicable diseases later in life, WHO recommends a limit value<50 cm [12].

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Children under 5 years in developing countries are exposed to various risks, including poverty, malnutrition, poor health, and an unstimulating home environment, which affects their cognitive, motor and social-emotional development. There are several national statistics on the development of children in developing countries. We therefore identified two factors with data available throughout the world the prevalence of early childhood Stunting and the number of people living in absolute poverty-to be used as indicators of poor development. Show that both indicators are closely related to poor cognitive and educational performance in children and use them to estimate that more than 200 million children under 5 years do not fulfill their development potential. Children who are severely malnourished tend to perform poorly in school and then to low income, high fertility, and provide poor care for their children, thus contributing to intergenerational poverty transmission [14].

Increase in height over 2 years is significantly related to changes in mental age, and the value of movement and hearing and the scale of speech subscale. Height increase in the first year is predicted to change in mental age, and hearing and speaking in the second year. Some of the effects of supplementation on development are divided by linear growth. Therefore, nutrition might explain part of the relationship between growth and development. However, supplementation also has an effect on development that is not dependent on growth. The benefits of supplementation on development and the extent to which they are shared with growth vary between subscales [15].

Toddler sex and number of siblings are several family factors and customs in the family that influence development, gender and number of siblings are biological factors that can influence development but in this study we get results that gender and number of siblings are not related to development with p-value 0.808>0.005 and 0.859>0.005. The results of this study are not in accordance with

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The number of children that have a lot of influence on the development of toddlers with sufficient socio-economic conditions will result in a lack of love and attention to children while in the economy it will also result in a lack of primary needs such as food, clothing and housing not met [16].

The mother's level of education and mother's knowledge influence development because mothers with good knowledge know more about how to stimulate or stimulate toddlers so that their development is in accordance with their age. In this study found the results that maternal education has an effect on development with p-value 0.003 and maternal knowledge influences development with p-value 0.001.
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Mother's work affects the development of children under five because working mothers are expected to be better able to meet the needs of toddlers from the economy. In this study there was no relationship between working mothers and the development of children with p-value 0.871>0.005. This research is not in accordance with the Soetjaningsih Theory of the Family who works will support the development of toddlers because parents will provide all the needs of children both primary and secondary. According to Act No. 13 of 2013, employees who work 7 hours per day for 6 days of work, so that working mothers still have time to provide stimulation, love and affection, the quality of parent interaction to children [16, 18]

Family income influences the development of toddlers because it is expected that families who earn more than UMK are expected to be able to meet the nutritional needs of children under five, so that good toddler nutrition does not affect the development of toddlers. In this study it was found that there was
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Stunting in children under five is a consequence of several factors often associated with poverty including nutrition, health, sanitation and the environment. There are five main factors causing Stunting, namely poverty, social and culture, increased exposure to infectious diseases, food insecurity and public access to health services. Factors related to chronic nutritional status in children under five are not the same between urban and rural areas, so the response efforts must be adjusted to the factors that influence.
Stunting is a major nutritional problem that will have an impact on social and economic life in society. Stunting toddlers tend to have difficulty achieving optimal growth and development potential both

physically and psychomotor [20] suggestion the benefits of this research are For Sentolo I Health Centers The results of this study are expected to be used as input for Puskesmas in Stunting and development services for children under five so as to reduce Stunting and developmental problems in the Sentolo I Health Center in KulonProgo Regency. For Midwives and Child Mother Health Practitioners (MCH) The results of this study are expected to be used as information material in making activities in an effort to improve the nutritional status of infants and encourage the implementation of prevention efforts or eliminate the possibility of developing developmental problems in infants. For Researchers Next Expand the research area so that the results obtained can be generalized. Add to other characteristics that might affect
the development of toddlers.

CONCLUSION

Write in about 1-2 paragraph s with no references

REFERENCES

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21. Kementrian Kesehatan Republik Indonesia. Atasi 3 MasalahKesehatan. 2018. Diakses pada tangga l3 November 2018 pukul 18.00 WIB. Dari http://www.depkes.go.id/article/view/18030700005/rakerkesnas-2018-kemenkes-percepat-atasi-3-masalah-kesehatan.html.
22. Unicef. RingkasanKajianGiziibudananak. 2012. Diaksespadatanggal 28 Oktober 2018 pukul 14.00 WIB. Dari https://www.unicef.org/indonesia/id/A6_-_B_Ringkasan_Kajian_Gizi.pdf
23. Who. 2014. Global Nutrision Target 2025. Stunting Policy Brief. Geneva. Diaksespadatanggal 5 November 2018 pukul 16.00 WIB. Dari https:/www.who.int/nutrition/topics/globaltargets_Stunting_policybrief.pdf
24. Kementrian Kesehatan Republik Indonesia. “Info datin Situasi Balita Pendek”. Jakarta; 2016. Diakses pada tanggal 28 Oktober 2018 pukul 14.00 WIB. Darihttp://www.depkes.go.id/resources/download/pusdatin/infodatin/situasi-balita-pendek-2016.pdf.
25. ProfilKesehatan Yogyakarta. Data Informasi Profil Kesehatan Yogyakarta 2017. Diakses pada tanggal 28 Oktober 2018 pukul 14.00 WIB. Dari http://www.depkes.go.id/resources/download/profil/PROFILKES_PROVINSI_2017/14_DIY_2017.pdf.
26. Who. 2011. WHO child Growth Standars. Geneva. Word Heath Organinazation.Apps.who.ints/iris/bitstream/10665/43413/1/924154693X_eng.pdf. Diaksespadatanggal 1 November 2018 pukul 19.45 WIB.
27. KementrianKesehatan Indonesia. Data InformasiProfilKesehatan Indonesia 2017. KementrianKesehatan Indonesia; Jakarta 2018. Diaksespadapadatanggal 28 Oktober 2018 pukul 19.00 WIB. Dari http://www.depkes.go.id/resources/download/pusdatin/profil-kesehatan/Profil-Kesehatan-Indonesia-tahun-2017.pdf.
28. Who. 2013. Childhood Stunting: Challenges and opportunities. Diaksespadatanggal 4 Desember 2018 pukul 20.00 WIB. Dari https://apps.who.int/iris/bitstream/handle/10665/107026/WHO_NMH_NHD_GRS_14.1_eng.pdf;jsessionid=89D07C3A25C0DBE9A1E8405BBF5DFB6F?sequence=1
29. Noto atmodjo Soekidjo. Metodologi Penelitian Kesehatan. Jakarta: Rineka Cipta. 2014.
30. Sugiono. “Statistika untuk Penelitian”. Bandung: Alfabeta. 2017
31. Balita Bangkes. “Pendek (Stunting) di Indonesia, Masalah dan Solusinya. 2015”. Di akses pada tanggal 22 November 2018. Dari dihttp://www.tnp2k.go.id/images/uploads/downloads/Buku%20Ringkasan%20Stunting.pdf.
32. Unicef India. Stunting reflects chronic undernutrition during the most critical periods of growth and developmet in early life. Di akses pada tanggal 16 februari 2019 pukul 14.20 WIB. Dari Http://unicef.in/whatwedo/10/Stunting.

33. Hanani. “Stunting berpengaruh terhadap Perkembangan motoric kasar, motoric halus, bahasa dan personal social anak”. Kelurahan jangli semarang. 2016 Diakses pada tanggal 20 Oktober 2018 pukul 19.00 WIB. Dari https://media.neliti.com/media/publications/92844-ID-perbedaan perkembangan-motorik-kasar-mot.pdf.
34. Grantham all. “Developmental potential in the fi rst 5 years for children in developing countries.2007”. Diakses pada tanggal 2 agustus 2019 dari https://reader.elsevier.com/reader/sd/pii/S0140673607600324?token=30966874011A596FF452834098FEFA4D350FA5EE9C9FD7835CD0883C17950E91B0B14FBEC15E04CEEA21E11244B82C10
35. Powell All. “Relationships between physical growth, mental development and nutritional supplementation in stunted children: the Jamaican study. 1995”. Diakses pada tanggal 2 Agustus 2019 dari https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1651-2227.1995.tb13479.x
36. Soetjahningsih. IG, N, GdeRanuh. “Tumbuh Kembang Anak”. EGC; 2016.
37. Hastuti D 2010. NilaiAnak, Stimulasi Psikososial, dan PerkembanganKognitifAnakUsia 2-5 Tahun pada Keluarga Rawan Pangan di Kabupaten Banjarnegara, Jawa Tengah, *Jurnal Ilmu Kesehatan dan Konseling*. 3(1): 27-34. (28 Oktober 2018) journal.ipb.ac.id.
38. Undang-Undang Republik Indonesia No.13 Tahun 2013. Diaksespadatanggal 13 Juli 2019. Dari http://www.kemenperin.go.id/kompetensi/UU_13_2003.pdf
39. Ozkan, M., Senel, S., Arslan, E. A. &Karacan, C. D. “The socioeconomic and biological risk factors for developmental delay in early childhood”. *European journal of pediatrics*. 2012;171(12): 1815-1821. Diakses pada tanggal 4 maret 2019 pukul 19.50 WIB
40. Aridiyah et at. 2015. “Faktor-faktor yang Mempengaruhi Kejadian Stunting pada Anak Balita di Wilayah Pedesaan dan Perkotaan (The Factors Affecting Stunting on Toddlers in Rural and Urban Areas)”. e-*Jurnal Pustaka Kesehatan*. 3(1). 163-170.Diakses pada tanggal 21 April 2019 pukul 21.00

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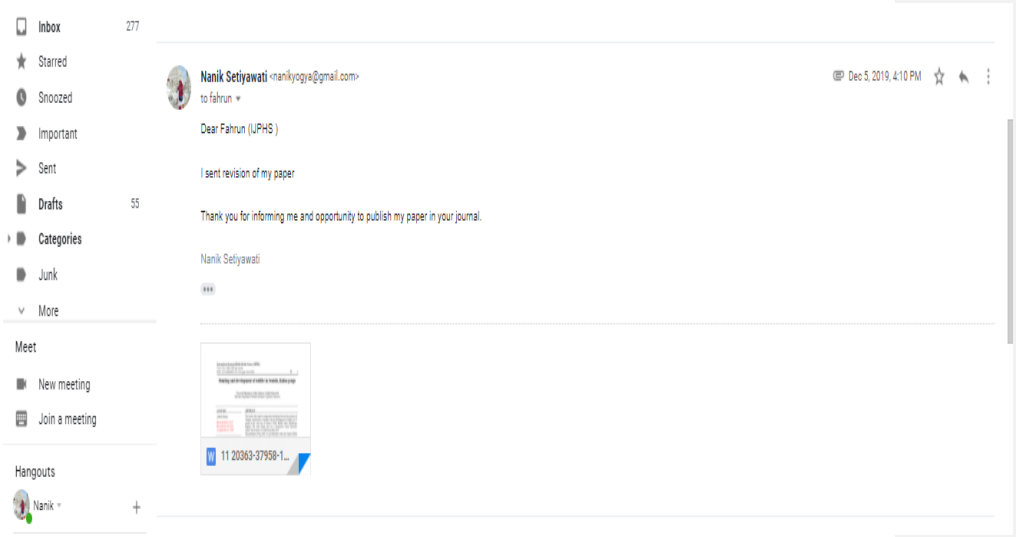

Stunting and development of toddler in Sentolo, Kulon progo

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Article Info

Article history:

Received Jun 9, 2018

Revised Nov 20, 2018

Accepted Jan 11, 2019

Keywords:

Development

Stunting

Toddlers

ABSTRACT

The current study aimed to examine the relationship between the incidence of Stunting, characteristics of mother with the development of toddlers 24-59 months in the work area of Sentolo I Public Health Center, KulonProgo Regency. The study design used was a retrospective cohort (historical cohort). The research was conducted in May 2019. The population of this study was all under-fives under the Sentolo Health Center I work area. There were 130 respondents consisting of 65 exposed groups and 65 unexposed groups participated in this study. The analysis used in this study used Chi-square.Developments wasdetected using Denver II. The results of the bivariate analysis showed that there was a relationship betweenStunting and the development of toddlers 24-59 months (p=0.003). There was no relationship between sex and number of siblings with the development of children under five (p=0.808). There is a significant relationship between the level of knowledge of mothers and toddler development (p=0.859). There is a relationship between the level of education of mothers with development (p=0.003). There is a relationship between family income and the development of (p=0.001), but there is no relationship between the work of mothers and children under five years (p=0.001).There is a relationship between Stunting and developing toddlers 24-59 months in the working area of Sentolo I Public Health Center, KulonProgo Regency.

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12. INTRODUCTION

There are three health problems that become Government programs, namely TB, Stunting and Immunization. Stunting is stunted growth (Growing Short) [1].Stunting occurs due to failure during child development because health conditions and nutritional intake are not optimal. Stunting is often associated with socio-economic conditions, presenting several diseases and nutritional intake that lack quality and excess [2].Stunting is a place where the tall body is shorter than the height body of others in general
(as appropriate). Children experience greater growth to become adults who are less educated, poor, unhealthy and vulnerable to non-communicable diseases [3].

Stunting is a condition in which a person's height is shorter than other people's height in general (as appropriate). Stunting occurs because the lack of nutritional intake received by the fetus/infant malnourished occurs since the baby is in the womb and at the beginning of the child's birth. According to Minister of Health Decree number 1995/KEMKES/SK/XII/2010 concerning anthropometric standards Ranking of nutritional status of children in accordance with the Body Length Index according to Age (PB/U) or Body Height by Age (TB/U) .Stunting toddlers can be known if a toddler has measured his length or height, then compared to the standard and the results are below normal. Short toddlers are toddlers with nutritional status based on length or height according to age when compared to the standard WHO-MGRS (Multicentre Growth Reference study) in 2015, the z-score is less than-2SD [4].

The Stunting prevalence in Indonesia in 2013 was 37% but in 2018 it fell to 30.8% where the WHO limit was <20% so Stunting was included in the health problems in Indonesia. This means that not optimal growth is experienced by around 8.9 million children in Indonesia or 1 in 3 children in Indonesia experiencing Stunting where children who are stunted on average occur under the age of 5 years. The prevalence of short-term babies in DIY in 2015 was 14.86%, down in 2016 to 11% and again increasing in 2017 to 13.86% [5].

Development is an increase in ability in terms of structure and function of the body that is more complex. Development has a regular pattern and can be predicted which is the result of the maturation process. The term development refers to the function of an organ or individual while growth (Growth) is a major change in terms of number and size at the level of organ cells and individuals or can be said to be a physical impact [6] in the first year. In 2010 the disruption of child growth and development in Indonesia reached 35%. This figure exceeds the World Health Organization (WHO) limit of 30%[7].

According to WHO 2013, Stunting can affect motor, cognitive, personal, social and language development which are short-term consequences for toddler development so that if not resolved can lead to long-term consequences namely health, development and economic problems [8].The purpose of this study was to find out the stunting relationship with the development of toddlers 24-59 months. Knowing the relationship of characteristics to toddler development included toddler sex, number of siblings, level of mother's knowledge, maternal education level, maternal occupation and family income on toddler development.

The benefits of this study are to provide benefits and add insight into Stunting Relationship with the development of toddlers 24-59 months. For Sentolo I Health Centers The results of this study were used as input for Puskesmas in Stunting and development services for toddlers. For midwives and child health practitioners (KIA) it is hoped that the results of the research can be input and information to prevent abnormal development. For the next researcher, it is expected to be able to add information for

the basis and reference of research by further research that will conduct research related to the development of toddlers.

13. METHOD

The type of research carried out is a type of observational analytic (non-experimental) research. The study design used was a retrospective cohort (historical cohort). The design was chosen because it is a good design in assessing the relationship between risk factors and their effects [9]. The population of this study were all toddlers in 2017 in the work area of Sentolo I Health Center in KulonProgo Regency with 1,572 toddlers. The sampling technique was done by purposive sampling, by making inclusion and exclusion criteria [10]. The sample size was 130 toddlers. This research was approved by Health Research Ethics Commission (KEPK) Health Polytechnic of the Ministry of Health Yogyakarta on May 21, 2019 with No.e_KEPK /POLTEKESYO/0081/V/2019.

14. RESULTS AND DISCUSSION

Data is gathered from 130 respondents, divided into two groups, namely 50% of groups exposed and 50% of groups not exposed. Female sex 56.2% more than male sex 43.8%. In the number of siblings there were 74.6% having siblings and 25.4% toddlers who did not have relatives. At the level of maternal education there are more mothers with high school education levels of 54.6% while for mothers with elementary, junior high school level 43.1% and mothers with tertiary education level of 2.3%. At work 70% of mothers do not work and 30% are working mothers. For the level of knowledge of 48.5% of mothers with sufficient knowledge, 39.2% of mothers with good knowledge and 12.3% of mothers with less knowledge. Family income is majority low income (65.4%).

3.1. Relationship characteristics with development

Characteristic relationship to the development of children under five is presented in the following table. Table 1 shows that there is no sex relationship with the development of toddlers p-value 0.808. The table shows that there is no relationship between the number of siblings and the development of children under five years p-value 0.859. At the maternal education level there is a relationship with the development of children under five p-value 0.003. In the mother's work there is no relationship between the work of the mother and the development of the toddler p-value 0.871. At the level of maternal knowledge there is a relationship between the level of knowledge of mothers with the development of toddlers p-value 0,000. In family income there is a relationship between family income and the development of children under five p-value 0.001.

Table 1. Characteristic relationships with development

Independent variable	Development		*p-value*
	Abnormal	Normal	

	f	%	f	%	
Child sex					
man					
women	20	46.5	37	42.5	0.808
	23	53.5	50	57.5	
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There is no brother					
There are brothers	10	23.2	23	26.4	0.859
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Stunting is a major nutritional problem that will have an impact on social and economic life in society. Stunting toddlers tend to have difficulty achieving optimal growth and development potential both physically and psychomotor [20] Stunting children impairment rate increased with age reaching 21% in three years children [21]. Given that nearly 40% of children under age five suffer from loss of developmental potential - for which stunting is likely one of the key risk factors - reductions in stunting could have tremendous implications for child development [22]. Suggestionthe benefits of this research areFor Sentolo I Health Centers The results of this study are expected to be used as input for Puskesmas in Stunting and development services for children under five so as to reduce Stunting and developmental problems in the Sentolo I Health Center in KulonProgo Regency. For Midwives and Child Mother Health Practitioners (MCH) The results of this study are expected to be used as information material in making activities in an effort to improve the nutritional status of infants and encourage the implementation of prevention efforts or eliminate the possibility of developing developmental problems in infants. For Researchers Next Expand the research area so that the results obtained can be generalized. Add to other characteristics that might affect the development of toddlers.

CONCLUSION

The conclusion of this study showed that there are no relationship between sex, number of sibling, mothers' work with development ogf toddler. There are relationship between the level of knowledge of mother, level of educational of mother, family income, stunting with development of toddlers. Stunting has 2,3 more risk to development of toddles 24-59 months in Sentolo, Kulon Progo

REFERENCES

1. Ministry of Health Indonesia. Atasi 3 masalah kesehatan. 2018. Available from: http://www.depkes.go.id/article/view/18030700005/rakerkesnas-2018-kemenkes-percepat-atasi-3-masalah-kesehatan.html.
2. Unicef. Ringkasan kajian gizi ibu dan anak. 2012. Available from: https://www.unicef.org/indonesia/id/A6_-_B_Ringkasan_Kajian_Gizi.pdf
3. WHO. 2014. Global Nutrision Target 2025. Stunting policy brief. Geneva. Available from: https:/www.who.int/nutrition/topics/globaltargets_stunting_policybrief.pdf
4. Ministry of Health Indonesia. Infodatin situasi balita pendek. Jakarta; 2016. Available from: http://www.depkes.go.id/resources/download/pusdatin/infodatin/situasi-balita-pendek-2016.pdf.
5. Profil Kesehatan Yogyakarta. Data InformasiProfilKesehatan Yogyakarta2017. Available from: http://www.depkes.go.id/resources/download/profil/PROFILKES_PROVINSI_2017/14_DIY_2017.pdf.
6. WHO. 2011. WHO child growth standards. Geneva. Word Health Organinazation.Apps.who.ints/iris/bitstream/10665/43413/1/924154693X_eng.pdf.

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7. Ministry of Health Indonesia. Data informasi profil kesehatan Indonesia 2017. Kementrian Kesehatan Indonesia; Jakarta 2018. Available from: http://www.depkes.go.id/resources/download/pusdatin/profil-kesehatan/Profil-Kesehatan-Indonesia-tahun-2017.pdf.
8. WHO. 2013. Childhood Stunting: Challenges and opportunities. Available from: https://apps.who.int/iris/bitstream/handle/10665/107026/WHO_NMH_NHD_GRS_14.1_eng.pdf;jsessionid=89D07C3A25C0DBE9A1E8405BBF5DFB6F?sequence=1
9. Notoatmodjo Soekidjo. metodologi penelitian kesehatan. Jakarta: RinekaCipta. 2014.
10. Sugiono. Statistika untuk penelitian. Bandung: Alfabeta. 2017
11. Balita Bangkes. Pendek (Stunting) di Indonesia, MasalahdanSolusinya.2015. Available from: http://www.tnp2k.go.id/images/uploads/downloads/Buku%20Ringkasan%20Stunting.pdf.
12. Unicef India. Stunting reflects chronic undernutrition during the most critical periods of growth and developmet in early life. Available from: Http://unicef.in/whatwedo/10/stunting.
13. Hanani. Stunting berpengaruh terhadap perkembangan motorik kasar, motorikhalus, bahasadan personal sosialanak. Kelurahanjanglisemarang. Available from: https://media.neliti.com/media/publications/92844-ID-perbedaan perkembangan-motorik-kasar-mot.pdf.
14. Grantham all. Developmental potential in the first 5 years for children in developing countries.2007. Available from: https://reader.elsevier.com/reader/sd/pii/S0140673607600324?token=30966874011A596FF452834098FEFA4D350FA5EE9C9FD7835CD0883C17950E91B0B14FBEC15E04CEEA21E11244B82C10
15. Powell All. Relationships between physical growth, mental development and nutritional supplementation in stunted children: the Jamaican study. 1995. Available from: https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1651-2227.1995.tb13479.x
16. Soetjahningsih. IG,N,GdeRanuh. TumbuhKembangAnak. EGC; 2016.
17. Hastuti D 2010. Nilai anak, stimulasi psikososial, dan perkembangan kognitif anak usia 2-5 tahun pada keluarga rawan pangan di kabupaten Banjarnegara, Jawa Tengah, Jurnal Ilmu Kesehatan dan Konseling. 3(1): 27-34. (28 Oktober 2018) journal.ipb.ac.id. Available from: http://journal.ipb.ac.id/index.php/jikk/article/view/5181
18. Undang-Undang Republik Indonesia No.13 Tahun 2013. Available from: http://www.kemenperin.go.id/kompetensi/UU_13_2003.pdf
19. Ozkan, M., Senel, S., Arslan, E. A. &Karacan, C. D. The socioeconomic and biological risk factors for developmental delay in early childhood. European journal of pediatrics.;171(12): 1815-1821. 2012. Available from: https://www.researchgate.net/profile/Saliha_Senel/publication/230863775_The_socioeconomic_and_biological_risk_factors_for_developmental_delay_in_early_childhood/links/54dfb21f0cf29666378be502.pdf
20. Aridiyah et at. 2015. The factors affecting stunting on toddlers in rural and urban areas. e-Jurnal Pustaka Kesehatan. 3(1). 163-170.
21. Bove I, Miranda T, Campoy C, Uauy R. Napol M. Stunting, overweight and child development go hand as key problems of early infancy: Uruguayan case. Early Human Development-03639(5) Elsevier. 2012. Available from: https://www.sciencedirect.com/science/article/pii/S0378378212000965
22. Perkins J,Rockli K, Krishna A, McGovern, Aguayo VM, Subramanian SV. Understanding the asoociation between stunting and shild development in low-and middle income countries: next steps for research and intervention. Social Science and Medicine, 193, 101-109. 2017. Available from: https://pureadmin.qub.ac.uk/ws/portalfiles/portal/136420753/Stunting_SSM.pdf

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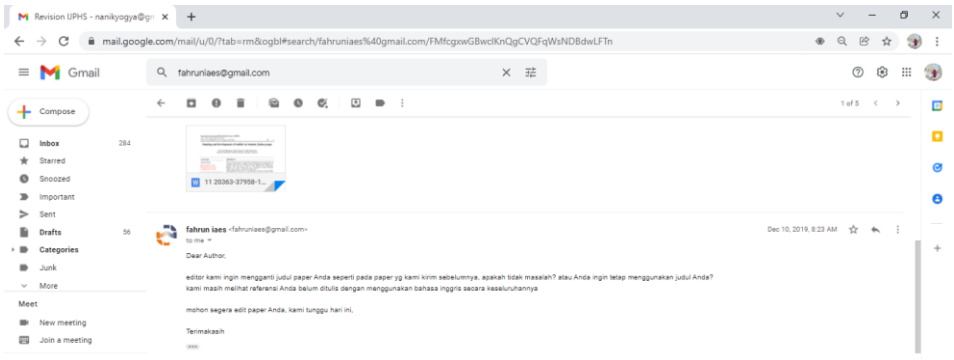

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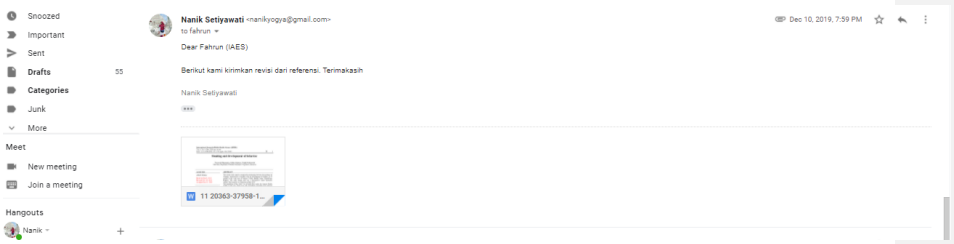

International Journal ofPublic Health Science (IJPHS)
Vol. 8, No. 4, Dec 2019, pp. xx~xx
ISSN: 2252-8806,DOI: 10.11591/ijphs.v8i4.20363

Stunting and development of behavior

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Article Info

Article history:

Received Jun 9, 2018
Revised Nov 20, 2018
Accepted Jan 11, 2019

Keywords:

Development
Stunting
Toddlers

ABSTRACT

The current study aimed to examine the relationship between the incidence of Stunting, characteristics of mother with the development of toddlers 24-59 months in the work area of Sentolo I Public Health Center, KulonProgo Regency. The study design used was a retrospective cohort (historical cohort). The research was conducted in May 2019. The population of this study was all under-fives under the Sentolo Health Center I work area. There were 130 respondents consisting of 65 exposed groups and 65 unexposed groups participated in this study. The analysis used in this study used Chi-square.Developments wasdetected using Denver II. The results of the bivariate analysis showed that there was a relationship betweenStunting and the development of toddlers 24-59 months (p=0.003). There was no relationship between sex and number of siblings with the development of children under five (p=0.808). There is a significant relationship between the level of knowledge of mothers and toddler development (p=0.859). There is a relationship between the level of education of mothers with development (p=0.003). There is a relationship between family income and the development of (p=0.001), but there is no relationship between the work of mothers and children under five years (p=0.001).There is a relationship between Stunting and developing toddlers 24-59 months in the working area of Sentolo I Public Health Center, KulonProgo Regency.

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1. INTRODUCTION

There are three health problems that become Government programs, namely TB, Stunting and Immunization. Stunting is stunted growth (Growing Short) [1].Stunting occurs due to failure during child development because health conditions and nutritional intake are not optimal. Stunting is often associated with socio-economic conditions, presenting several diseases and nutritional intake that lack quality and excess [2].Stunting is a place where the tall body is shorter than the height body of others in general (as appropriate). Children experience greater growth to become adults who are less educated, poor, unhealthy and vulnerable to non-communicable diseases [3].

Stunting is a condition in which a person's height is shorter than other people's height in general (as appropriate). Stunting occurs because the lack of nutritional intake received by the fetus/infant malnourished occurs since the baby is in the womb and at the beginning of the child's birth. According to Minister of Health Decree number 1995/KEMKES/SK/XII/2010 concerning anthropometric standards Ranking of nutritional status of children in accordance with the Body Length Index according to Age (PB/U) or Body Height by Age (TB/U) .Stunting toddlers can be known if a toddler has measured his length or height, then compared to the standard and the results are below normal. Short toddlers are toddlers with

nutritional status based on length or height according to age when compared to the standard WHO-MGRS (Multicentre Growth Reference study) in 2015, the z-score is less than-2SD [4].

The Stunting prevalence in Indonesia in 2013 was 37% but in 2018 it fell to 30.8% where the WHO limit was <20% so Stunting was included in the health problems in Indonesia. This means that not optimal growth is experienced by around 8.9 million children in Indonesia or 1 in 3 children in Indonesia experiencing Stunting where children who are stunted on average occur under the age of 5 years. The prevalence of short-term babies in DIY in 2015 was 14.86%, down in 2016 to 11% and again increasing in 2017 to 13.86% [5].

Development is an increase in ability in terms of structure and function of the body that is more complex. Development has a regular pattern and can be predicted which is the result of the maturation process. The term development refers to the function of an organ or individual while growth (Growth) is a major change in terms of number and size at the level of organ cells and individuals or can be said to be a physical impact [6] in the first year. In 2010 the disruption of child growth and development in Indonesia reached 35%. This figure exceeds the World Health Organization (WHO) limit of 30%[7].

According to WHO 2013, Stunting can affect motor, cognitive, personal, social and language development which are short-term consequences for toddler development so that if not resolved can lead to long-term consequences namely health, development and economic problems [8].The purpose of this study was to find out the stunting relationship with the development of toddlers 24-59 months. Knowing the relationship of characteristics to toddler development included toddler sex, number of siblings, level of mother's knowledge, maternal education level, maternal occupation and family income on toddler development.

The benefits of this study are to provide benefits and add insight into Stunting Relationship with the development of toddlers 24-59 months. For Sentolo I Health Centers The results of this study were used as input for Puskesmas in Stunting and development services for toddlers. For midwives and child health practitioners (KIA) it is hoped that the results of the research can be input and information to prevent abnormal development. For the next researcher, it is expected to be able to add information for the basis and reference of research by further research that will conduct research related to the development of toddlers.

2. METHOD

The type of research carried out is a type of observational analytic (non-experimental) research. The study design used was a retrospective cohort (historical cohort). The design was chosen because it is a good design in assessing the relationship between risk factors and their effects [9]. The population of this study were all toddlers in 2017 in the work area of Sentolo I Health Center in KulonProgo Regency with 1,572 toddlers. The sampling technique was done by purposive sampling, by making inclusion and exclusion criteria. The sample size was 130 toddlers. This research was approved by Health Research Ethics Commission (KEPK) Health Polytechnic of the Ministry of Health Yogyakarta on May 21, 2019 with No.e_KEPK /POLTEKESYO/0081/V/2019.

3. RESULTS AND DISCUSSION

Data is gathered from 130 respondents, divided into two groups, namely 50% of groups exposed and 50% of groups not exposed. Female sex 56.2% more than male sex 43.8%. In the number of siblings there were 74.6% having siblings and 25.4% toddlers who did not have relatives. At the level of maternal education there are more mothers with high school education levels of 54.6% while for mothers with elementary, junior high school level 43.1% and mothers with tertiary education level of 2.3%. At work 70% of mothers do not work and 30% are working mothers. For the level of knowledge of 48.5% of mothers with sufficient knowledge, 39.2% of mothers with good knowledge and 12.3% of mothers with less knowledge. Family income is majority low income (65.4%).

3.1. Relationship characteristics with development

Characteristic relationship to the development of children under five is presented in the following table. Table 1 shows that there is no sex relationship with the development of toddlers p-value 0.808. The table shows that there is no relationship between the number of siblings and the development of children under five years p-value 0.859. At the maternal education level there is a relationship with the development of children under five p-value 0.003. In the mother's work there is no relationship between the work of the mother and the development of the toddler p-value 0.871. At the level of maternal knowledge there is a relationship between the level of knowledge of mothers with the development of toddlers p-value 0,000.

In family income there is a relationship between family income and the development of children under five p-value 0.001.

Table 1. Characteristic relationships with development

Independent variable	Development				*p-value*
	Abnormal		Normal		
	f	%	f	%	
Child sex					
man	20	46.5	37	42.5	0.808
women	23	53.5	50	57.5	
Total	43	100	87	100	
Number of siblings					
There is no brother	10	23.2	23	26.4	0.859
There are brothers	33	76.8	64	73.6	
Total	43	100	87	100	
Mother's education level					
Elementary, Middle School / equivalent					0.003
High school / equivalent	27	62.8	29	33.3	
PT / equivalent	16	37.2	55	63.2	
	0	0	3	3.5	
Total	43	100	87	100	
Work					
Does not work	31	72.1	60	68.9	0.871
Work	12	27.9	27	31.1	
Total	43	100	87	100	
Level of mother's knowledge					
Less	9	21	7	8	0.000
Enough	27	62.8	36	41.4	
Well	7	16.2	44	50.6	
Total	43	100	87	100	
Family income					
Less than UMK	37	86	48	55.2	0.001
More similar to the UMK	6	14	39	44.8	
Total	43	100	47	100	

3.2. Stunting relationship with toddler development

This research found that shows of 65 stunting toddlers there were 69.7% of toddlers who had developmental problems and 40.2% had normal development, while 65 under-fives were not Stunting who had developmental disorders as much as 30.3% and 59.8% of toddlers not experiencing development problems. The Chi-square test results are *p-value* 0.003 which means there is a relationship between Stunting and the development of toddlers 24-59 months.

Toddlers are short (stunted) and very short (severely stunted) are toddlers with body length (PB/U) or height (TB/U) according to their age compared to the standard WHO-MGRS (Multicentre Growth Reference Study) 2006. Whereas the definition of Stunting according to the Ministry of Health (Kemenkes) are toddlers with a score of z-score less than-2SD/standard deviation (stunted) and less than-3SD (severely stunted) [10]. One indicator of the nutritional status of a baby born is the body length at birth besides weight at birth. The length of a baby is considered normal between 48-52 cm. So the birth length<48 cm is classified as a short baby. But if we want to link body length to birth with the risk of getting non-communicable diseases later in life, WHO recommends a limit value<50 cm [11].

This research was conducted in May at several posyandu in the Sentolo I Health Center in KulonProgo Regency by looking at the MCH handbook and direct development checks using Denver II and mother's knowledge about development. The results of this study indicate that there is a Stunting relationship with the development of toddlers 24-59 months with p-value 0.003. In this study it was found that Stunting toddlers 69.7% experienced developmental disorders.

Stunting affects the development of toddlers because it has long-term effects on health performance. In this study it was found that there was a Stunting relationship to the development of toddlers, namely with a p-value of 0.003<0.005. This study is in accordance with the research conducted by Hanani 2016 in Jangli Semarang Village. The results showed that the Stunting had an effect on gross motoric development, fine motoric, language and social personal children. Data collected included data on subject characteristics, maternal characteristics, nutritional status, and child development. Nutritional status was measured by comparing height with age, and data on child development was measured by questionnaire Development Pre-Screening (KPSP) [12].

Children under 5 years in developing countries are exposed to various risks, including poverty, malnutrition, poor health, and an unstimulating home environment, which affects their cognitive, motor and social-emotional development. There are several national statistics on the development of children in developing countries. We therefore identified two factors with data available throughout the world the prevalence of early childhood Stunting and the number of people living in absolute poverty-to be used as indicators of poor development. Show that both indicators are closely related to poor cognitive and educational performance in children and use them to estimate that more than 200 million children under 5 years do not fulfill their development potential. Children who are severely malnourished tend to perform poorly in school and then to low income, high fertility, and provide poor care for their children, thus contributing to intergenerational poverty transmission [13].

Increase in height over 2 years is significantly related to changes in mental age, and the value of movement and hearing and the scale of speech subscale. Height increase in the first year is predicted to change in mental age, and hearing and speaking in the second year. Some of the effects of supplementation on development are divided by linear growth. Therefore, nutrition might explain part of the relationship between growth and development. However, supplementation also has an effect on development that is not dependent on growth. The benefits of supplementation on development and the extent to which they are shared with growth vary between subscales [14].

Toddler sex and number of siblings are several family factors and customs in the family that influence development, gender and number of siblings are biological factors that can influence development but in this study we get results that gender and number of siblings are not related to development with p-value 0.808>0.005 and 0.859>0.005. The results of this study are not in accordance with Soetjahningsih's theory that family factors and customs that affect development include gender and number of siblings. Children of male sex are often sick compared to women but it is not known exactly what causes them. The number of children that have a lot of influence on the development of toddlers with sufficient socio-economic conditions will result in a lack of love and attention to children while in the economy it will also result in a lack of primary needs such as food, clothing and housing not met [15].

The mother's level of education and mother's knowledge influence development because mothers with good knowledge know more about how to stimulate or stimulate toddlers so that their development is in accordance with their age. In this study found the results that maternal education has an effect on development with p-value 0.003 and maternal knowledge influences development with p-value 0.001. This is in accordance with the study Hastuti, that mother's knowledge and mother's level of education is an important role in stimulating the potential of children. Parenting tasks are generally left to the mother based on the knowledge she has. One of the factors that influence knowledge is the education level of the mother. If mothers have high knowledge, they will be more active in seeking information to improve skills in childcare [16].

Mother's work affects the development of children under five because working mothers are expected to be better able to meet the needs of toddlers from the economy. In this study there was no relationship between working mothers and the development of children with p-value 0.871>0.005. This research is not in accordance with the Soetjaningsih Theory of the Family who works will support the development of toddlers because parents will provide all the needs of children both primary and secondary. According to Act No. 13 of 2013, employees who work 7 hours per day for 6 days of work, so that working mothers still have time to provide stimulation, love and affection, the quality of parent interaction to children [15, 17]

Family income influences the development of toddlers because it is expected that families who earn more than UMK are expected to be able to meet the nutritional needs of children under five, so that good toddler nutrition does not affect the development of toddlers. In this study it was found that there was a relationship between family income and the development of toddlers with p-value 0.001. This study is in accordance with Ozkan's research which states that socio-economic has a large influence on the development of children up to the age of five years, in this study the abnormal results of the denver test showed a high number, one of which was due to low parental education in which these factors would be related with low household income [18].

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REFERENCES

1. Ministry of Health Indonesia. Overcome health problem in three years. 2018. Available from: http://www.depkes.go.id/article/view/18030700005/rakerkesnas-2018-kemenkes-percepat-atasi-3-masalah-kesehatan.html.
2. Unicef. Mother and Child Nutrition. Ringkasan kajian. 2012. Available from: https://www.unicef.org/indonesia/id/A6_-_B_Ringkasan_Kajian_Gizi.pdf
3. WHO. 2014. Global Nutrision Target 2025. Stunting policy brief. Geneva. Available from: https:/www.who.int/nutrition/topics/globaltargets_stunting_policybrief.pdf.
4. Ministry of Health Indonesia. Infodatin Stunting toddler situation. Jakarta; 2016. Available from: http://www.depkes.go.id/resources/download/pusdatin/infodatin/situasi-balita-pendek-2016.pdf.
5. Yogyakarta's health profile. Information of Yogyakarta's profile. 2017. Available from: http://www.depkes.go.id/resources/download/profil/PROFILKES_PROVINSI_2017/14_DIY_2017.pdf.
6. WHO. 2011. WHO child growth standars. Geneva. Word Health Organinazation.Apps.who.ints/iris/bitstream/10665/43413/1/924154693X_eng.pdf.
7. Ministry of Health Indonesia. Information of Indonesia health profile 2017. Kementrian Kesehatan Indonesia; Jakarta 2018. Available from: http://www.depkes.go.id/resources/download/pusdatin/profil-kesehatan/Profil-Kesehatan-Indonesia-tahun-2017.pdf.
8. WHO. 2013. Childhood Stunting: Challenges and opportunities. Available from: https://apps.who.int/iris/bitstream/handle/10665/107026/WHO_NMH_NHD_GRS_14.1_eng.pdf;jsessionid=89D07C3A25C0DBE9A1E8405BBF5DFB6F?sequence=1
9. Notoatmodjo Soekidjo. Heath Research Methodology. Jakarta: Rineka Cipta. 2014.
10. The National Team for Accelerating Poverty Reduction. 100 priority districts for stunting intervensions. Available from: http://www.tnp2k.go.id/images/uploads/downloads/Buku%20Ringkasan%20Stunting.pdf.
11. Unicef India. Stunting reflects chronic undernutrition during the most critical periods of growth and developmet in early life. Available from: Http://unicef.in/whatwedo/10/stunting.
12. Hanani. The effects of stunting to the development of gross motor, fine motor skills, language and social personal of Jangli village Semarang. Available from: https://media.neliti.com/media/publications/92844-ID-perbedaan perkembangan-motorik-kasar-mot.pdf.
13. Grantham all. Developmental potential in the first 5 years for children in developing countries.2007. Available from: https://reader.elsevier.com/reader/sd/pii/S0140673607600324?token=30966874011A596FF452834098FEFA4D350FA5EE9C9FD7835CD0883C17950E91B0B14FBEC15E04CEEA21E11244B82C10
14. Powell All. Relationships between physical growth, mental development and nutritional supplementation in stunted children: the Jamaican study. 1995. Available from: https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1651-2227.1995.tb13479.x
15. Soetjahningsih. IG,N,Gde Ranuh. Child Development. EGC; 2016.
16. Hastuti D 2010. Child value, psychosocial stimulation, and cognitive development of children 2-5 years in food-insecure families in Banjarnegara, Central Java, Jurnal Ilmu Kesehatan dan Konseling. 3(1): 27-34. (28 Oktober 2018) journal.ipb.ac.id. Available from: http://journal.ipb.ac.id/index.php/jikk/article/view/5181

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revised

17. Republic of Indonesia Law Number 13 of 2013. Available from: http://www.kemenperin.go.id/kompetensi/UU_13_2003.pdf
18. Ozkan, M., Senel, S., Arslan, E. A. &Karacan, C. D. The socioeconomic and biological risk factors for developmental delay in early childhood. European journal of pediatrics.;171(12): 1815-1821. 2012. Available from: https://www.researchgate.net/profile/Saliha_Senel/publication/230863775_The_socioeconomic_and_biological_risk_factors_for_developmental_delay_in_early_childhood/links/54dfb21f0cf29666378be502.pdf
19. Aridiyah et at. 2015. The factors affecting stunting on toddlers in rural and urban areas. e-Jurnal Pustaka Kesehatan. 3(1). 163-170.
20. Bove I, Miranda T, Campoy C, Uauy R. Napol M. Stunting, overweight and child development go hand as key problems of early infancy: Uruguayan case. Early Human Development-03639(5) Elsevier. 2012. Available from: https://www.sciencedirect.com/science/article/pii/S0378378212000965
21. Perkins J,Rockli K, Krishna A, McGovern, Aguayo VM, Subramanian SV. Understanding the asoociation between stunting and shild development in low-and middle income countries: next steps for research and intervention. Social Science and Medicine, 193, 101-109. 2017. Available from: https://pureadmin.qub.ac.uk/ws/portalfiles/portal/136420753/Stunting_SSM.pdf