STUNTING STATUS AND DEVELOPMENT OF CHILDREN UNDER 5 YEARS OLD IN PADAMARA COMMUNITY HEALTH SERVICE CENTRE IN INDONESIA

Ema Wahyu Ningrum, Tin Utami

Harapan Bangsa Institute of Health Sciences, Purwokerto
Corresponding author email address: em4wahyuningrum@gmail.com

ABSTRACT

The prevalence of stunting has increased from 35.6% in 2010 to 37.2% in 2013. Children who suffer from stunting are at risk of delay in growth and development. The purpose of this study is to determine the relationship between stunting and development status of children under 5 years old. The research design was analytical survey with cross sectional approach. The number of sample were 60 children under 5 years old who selected through quota sampling technique. Microtoase stature meter, WHO anthro software and Denver sheet II were used to assess stunting and development status of children. Data was analysed using distribution frequency, chi square, fisher exact test, and Kolmogorov Smirnov. Result showed that there were no significant correlation between stunting and gross motor, fine motor, social and language development (p=0,649; p=1,000; p=1,000 and p=0.998 respectively). In conclusion, there is no relationship between stunting status and child development. However, mothers of children age less than 5 years old who suffers from stunting is suggested to pay attention to the developmental aspect of their children by taking regular screening and providing stimulation.

Keywords: stunting, child development, children under 5 years

ABSTRAK

Prevalensi stunting di Indonesia mengalami peningkatan. Anak-anak yang menderita stunting lebih berisiko mengalami gangguan tumbuh kembang. Tujuan penelitian ini adalah untuk mengetahui hubungan antara status stunting dan perkembangan balita. Desain dalam penelitian ini menggunakan survei analitik dengan pendekatan cross sectional. Jumlah sampel 60 balita yang dipilih melalui teknik quota sampling. Instrumen untuk status stunting menggunakan meteran mikrotoase kemudian dinilai dengan menggunakan perangkat lunak antro WHO sedangkan Denver lembar ke II digunakan untuk mendeteksi perkembangan. Analisis data menggunakan analisis uji chi square, uji fisher exact, dan Kolmogorov smirnov. Hasil penelitian menunjukkan bahwa tidak ada hubungan antara stunting dan perkembangan motorik kasar (p = 0,649), tidak ada korelasi antara stunting dengan perkembangan motorik halus (p = 1.000), tidak ada korelasi antara stunting dengan perkembangan sosial pribadi (p = 1,000), tidak ada hubungan antara stunting dan perkembangan bahasa (p = 0,998). Kesimpulannya, tidak ada hubungan antara status stunting dan perkembangan anak. Disarankan kepada ibu yang memiliki balita dengan status stunting perlu lebih memperhatikan perkembangan anak mereka dengan memberikan stimulasi perkembangan pada anak.

Kata kunci: stunting, perkembangan anak, balita

BACKGROUND

Indonesia health development in the 2015-2019 period focuses on four priority programs: decreased mother and infant mortality rate, decreased prevalence of stunting among children under 5 years, infectious disease control and non-communicable disease control. One of the national development priorities listed in the main target of the Short-term Development Plan 2015-2019 is decreased stunting among children under 5 years old by improving nutritional status. It was targeted that stunting prevalence (short and very short) among children under 2 years old decrease to 28% (Kemenkes RI, 2016).

According to World Health Organization (WHO) in 2010, stunting prevalence is defined as "high" if it reaches 30% to 39% and "very high" if it reaches ≥ 40%. The prevalence of stunting among children in Indonesia is considered as high as the number reached 30.7%. The prevalence has increased 1.6% in 2010-2013. The prevalence of stunting is higher than malnutrition (17.9%), lethargy (13.3%) and obesity (14%) (Riskesdas, 2013).

Stunting is a chronic malnutrition condition because nutritional intake could not meet the needs for a long period of time (Ernawati, 2013). On the Nutrition in the *First 1000 Days of the World's Mothers* (2012), it is stated that the incidence of stunting is influenced by the conditions in the first 1000 days in life or it started when the fetus is in the womb until 2 years old. It is called as a windows critical period because brain or intelligence grows rapidly during this time. As the consequence, inadequate nutritional intake (breastfeeding or complementary feeding) during the first 2 years of life can lead to stunting (Imtihanatun, 2012).

Stunting in children under 5 years needs special attention because it can delay physical and mental development on children. It is associated with an increased risk of morbidity and mortality and also impaired growth in motor and mental ability. A study found that children under 5 years old with stunting have a higher risk of decreased intellectual ability, productivity, and increased risk of future degenerative diseases (Kukuh, 2013). This is in line with a study by Hizni (2010) in North Coast Coastal Area Lemahwungkuk Subdistrict of Cirebon City which found that there is a relationship between stunting and fine motor, language and also gross motor development (Hizni, 2010)

Data showed that prevalence of stunting in Purbalingga regency in 2014 reached 20,2%. Based on nutrition surveillance data in 2015, Padamara community health service center has the highest incidence of nutritional status problem (Dinas Kesehatan Purbalingga, 2015). This study aimed to identify relationship between nutritional status and four dimensions of development (gross motor, fine motor, language and personal social) among children aged under 5 years old.

METHOD

The research design was descriptive analytic with cross sectional approach. The number of sample were 60 children age 12-59 months old who selected using purposive sampling technique. Microtoase and z-score were used to measure stunting status, while Denver II was used to detect development. The data was analysed using frequency distribution, chi square and alternative test Fisher Exact test and kolmogorov smirnov.

RESULTS

Table 1. Frequency Distribution of Characteristics of the Respondents

Ages	f	%
12-23 months	16	26,7
24-35 months	10	16,7
36-47 months	18	30,0
48-59 months	16	26,7
Total	**60**	**100**
Gender	**f**	**%**
Male	36	60,0
Female	24	40,0
Total	**30**	**100**
Birth Weight	**f**	**%**
Low Birth Weight	30	50
Normal Birth weight	30	50
Total	**60**	**100**
Nutrition Status	**f**	**%**
Normal	33	55
Stunting	27	45
Total	**30**	**100**

Table 1 shows that almost one third of respondents aged 36-47 months old (30%) and majority of them are male (60%). Half of the children were born as low birth weight babies (50%). Only 55% of children have normal height.

Table 2 shows that most children both with and without normal nutritional status (stunting) had normal gross motor development (93.9% and 88,9% respectively). Fisher Exact test shows p=0.649 which means that there is no significant relationship between stunting and gross motor development.

Table 2. Relationship between nutritional status and gross motor development

Gross Motoric	Nutritional status				p value
	Normal		Stunting		
	f	%	f	%	
Normal	31	93.9	24	88.9	0,649
Suspect	2	6.1	3	11.1	

Table 3. Relationship between nutritional status and fine motor development

Fine Motoric	Nutritional status				p value
	Normal		Stunting		
	f	%	f	%	
Normal	31	93.9	25	92.6	1,000
Suspect	2	6.1	2	7.4	

Table 3 shows that most children both with and without normal nutritional status (stunting) had normal fine motor development (93.9% and 92.6% respectively). Fisher Exact test show p=1.000 which means that there is no relationship between nutrition status and fine motor development.

Table 4. Relationship between nutritional status and personal social development

Personal social	Nutritional status				p value
	Normal		Stunting		
	f	%	f	%	
Normal	30	90.9	24	88.9	1.000
Suspect	3	9.1	2	7.4	
No chance	0	0	1	3.7	

Table 4 shows that most children both with and without normal nutritional status (stunting) had normal social development (90.9% and 88.9% respectively). Kolmogorov Smirnov test shows p=1,000 which means that there is no relationship between nutritional status and social personal development.

Table 5. Relationship between nutritional status and language development

Language	Nutritional status				p value
	Normal		Stunting		
	f	%	f	%	
Normal	31	93.9	24	88.9	1.000
Suspect	2	6.1	2	7.4	
No chance	0	0	1	3.7	

Table 5 shows that most children both with and without normal nutritional status (stunting) had normal language development (93.9% and 88.9% respectively). Kolmogorov Smirnov test shows p=0.998 which means that there is no relationship between nutritional status and language development.

DISCUSSION

Children with stunting experienced slow and short skeletal growth. This condition is often caused by unfulfillment of nutritional needs and chronic pain.

Result of this study shows that there is no significant correlation between stunting and personal social development (p> 0.05). This because family can give attention and support needed by their children to interact with the environment regardless of their nutritional status. When children could develop the personal social skills, it is expected that they could develop social adjustment as well. A study found that children who get adequate stimulation from the family or their environment are able to develop their personal social skills according to their age (Hizni, 2010).

This study shows that there is no significant relationship between stunting and fine motor development (p> 0.05). This is inconsistent with previous research by Hizni (2010) which found that children with developmental disorders are characterized by slow in maturation of nerve cells, motor movement, social response, and also lack of intelligence. As a result, the children have a need to learn. Various sensory stimulation such as hearing, seeing, feeling, kissing, and touching given during early life have been found to have major influence on brain growth and maturation. A study found that children who have severe stunting at first 2 years of life, at age 8 years old and 11 years old showed a lower cognitive test score than their counterpart.

This study shows that there is no significant relationship between stunting and language development (p> 0.05). Language development in children supports child's ability to understand, make opinions, and draw conclusions. Language development are including motor aspects of speech associated with the ability to produce certain sounds known as words, and also mental aspects of speech which related to the ability to gather meaning with those words.

This study also shows that there is no significant relationship between stunting and gross motor development (p> 0.05). One of gross motor development of children aged 14 months old is running around. However, among malnourished children, time to develop this gross motor skill will be delayed until the age of 18 months. This is a critical period because if children fail to accomplish the developmental task at this age, it would lead them to greater possibility to experience growth disorder in adulthood period. To reduce the possibility of delayed in children's development, stimulation is important. Previous researches have revealed that stimulation factor plays an important role in children growth. Children who get adequate stimulation would be developed in faster rate than those who don't or get less stimulation (Soetjiningsih, 2012).

Currently there is a comprehensive effort to maintain the growth of children since very early in the womb until the age of five years old. Stimulation according to the age of the children is needed. This research suggests the need to increase the role of mother in

children development, for example by doing close monitoring when disturbance or delay in the development is suspected.

CONCLUSION

Almost one third of respondents aged 36-47 months old (30%) and majority of them are male (60%). Half of the children were born as low birth weight babies (50%). Only 55% of children have normal height. There is no relationship between stunting and all developmental dimensions: gross motor, fine motor, personal social and language (p=0,649; p=1,000; p=1,000 and p=0.998 respectively).

REFERENCES

Dinas Kesehatan Kabupaten Purbalingga. (2015). *Profil Kesehatan Kabupaten Purbalingga*. Dinkes Purbalingga: Purbalingga.

Ernawati, Fitrah. (2013). Pengaruh Asupan Protein Ibu Hamil dan Panjang Badan bayi Lahir Terhadap Kejadian Stunting Pada Anak Usia 12 bulan di kabupaten Bogor (Effect of The Pregnant Women's Protein Intake and Their Baby Length a Birth To Incidence of Stunting Among Children Aged 12 Months In Bogor District). *Jurnal Penelitian Gizi dan makanan.* 36 (1), 1-11.

Hizni, A. (2010). Status Stunted dan hubungannya dengan perkembangan anak balita di wilayah Pesisir Pantai Utara Kecamatan Lemahwungkuk Kota Cirebon. *Jurnal Gizi Klinik Indonesia.* 6 (3), 131-137

Imtihanatun, N. (2014). Faktor Risiko Panjang lahir Bayi Pendek di Ruang Bersalin RSUD patut Patuh Patju Kabupaten Lombok Barat.*Jurnal Media Bina Ilmiah*. 8(1), 66-76.

Kemenkes RI. (2016). *Situasi balita Pendek*. Jakarta: Pusat data dan Informasi Kementerian Kesehatan RI.

Riset Kesehatan Dasar. (2013). http://depkes.go.id/downloads/riskesdas2013/Hasil%20Riskesdas%202013.pdf (diperoleh tanggal 10 April 2016)

Kukuh, Eka Kusuma. (2013). Faktor Risiko Kejadian Stunting pada Anak Usia 2-3 tahun (Studi di Kecamatan Semarang Timur). eprint Undip.

Kurniawati, LD., & Ika M. Pola Asuh Orang Tua Mempengaruhi Perkembangan Balita di Posyandu Arjuna RW IV Pos 3 Kelurahan Kemayoran Kecamatan Krembangan Surabaya. *Jurnal Ilmiah Kesehatan*. 7(12), 9-16

Rahayu, Leni Sri dan Mira Sofyaningsih. (2011). Pengaruh BBLR dan pemberian ASI eksklusif terhadap perubahan status stunting pada balita di kota dan kabupaten Tangerang provinsi Banten. *Prosiding Seminar Nasional "Peran Kesehatan Masyarakat dalam Pencapaian MDG's di Indonesia*. Universitas Muhammadiyah Prof Dr. Hamka

Soetjiningsih. (2012). *Tumbuh Kembang Anak*. Jakarta: EGC.