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Hubungan Karakteristik Balita, Sosial Ekonomi, dan Ketahanan Pangan Rumah Tangga dengan Stunting di Kampung 1001 Malam Surabaya, Surabaya

The Relationship Between Characteristics of Toddlers, Socio-Economic, and Household Food Security with Stunting in Kampung 1001 Malam Surabaya, Surabaya

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ABSTRAK

Latar Belakang*: Stunting merupakan kondisi defisiensi nutrisi secara kronis yang didefinisikan dengan tinggi badan tidak sesuai dengan usia. Kondisi ini dipengaruhi oleh berbagai faktor seperti asupan makanan, penyakit infeksi, kondisi ketahanan pangan, pola asuh orang tua, ekonomi dan kondisi kesehatan lingkungan.*
Tujuan: *penelitian ini bertujuan untuk menganalisis hubungan antara karakteristik balita, kondisi status sosial ekonomi dan ketahanan pangan dengan kondisi status gizi stunting pada balita usia 12 – 59 bulan di Kampung 1001 Malam Surabaya, Surabaya.*
Metode: *Jenis penelitian ini adalah kuantitatif dengan desain penelitian cross sectional. Sampel pada penelitian ini adalah sebesar 35 balita dengan teknik pengambilan sampel adalah total sampel. Variabel bebas pada penelitian ini adalah karakteristik balita, sosial ekonomi dan ketahanan pangan rumah tangga, sedangkan untuk variabel terikat adalah kondisi stunting di Kampung 1001 Malam Surabaya. Teknik pengumpulan data menggunakan teknik data sekunder untuk berat dan tinggi badan lahir balita , untuk data primer yaitu pendidikan ibu, pekerjaan ibu, pendapatan keluarga, dan ketahanan pangan. Analisis data menggunakan chi square dan spearman Rho. Confidence interval yang digunakan pada penelitian ini adalah 95%.*
Hasil: *Hasil menunjukkan 57,1% balita berjenis kelamin perempuan, 77,1% berusia diatas 24 bulan, 8,6% memiliki riwayat berat badan lahir rendah, 28,6% memiliki riwayat panjang badan kurang, 62,9% ibu memiliki pendidikan rendah, 94,2% berkerja sebagai ibu rumah tangga, 57,1% memiliki pendapatan berkisar >Rp. 500.000 – Rp. 1.000.000, 80% memiliki kondisi tidak tahan pangan dan 40% balita mengalami kondisi stunting. Analisis uji menunjukkan tidak ada hubungan antara karakteristik balita (berat badan lahir (p=0,704) dan panjang lahir (p=0,729), status sosial ekonomi (pendidikan ibu(p=0,116), pekerjaan ibu(p=0,338), dan pendapatan keluarga (p=0,540; rs=-0,107) dan ketahanan pangan (p=0,863) dengan kondisi stunting pada balita.*
Kesimpulan*: kesimpulan pada penelitian ini adalah karakteristik balita, status sosial ekonomi dan ketahanan pangan bukan menjadi faktor utama penyebab stunting.*

Kata kunci: *Berat lahir, Panjang lahir, Status sosial ekonomi, Ketahanan pangan, Stunting*

ABSTRACT

Background: Stunting is a chronic nutritional deficiency condition defined by low-height for age. This condition is caused by various factors such as food intake,

infectious diseases, food security conditions, parenting patterns, economy and environmental health conditions.

Objective: The purpose of this study was to determine the relationship between the characteristics of toddlers, socioeconomic and household food security with stunting nutritional status in toddlers aged 12 – 59 months in Kampung 1001 Malam Surabaya, Surabaya.

Methods: This research was a quantitative with a cross sectional study design. The sample in this study was amounted to 35 children under five with sampling technique was total sampling. The independent variables in this studi were the characteristics of children under five, socioeconomic, and household food security, while the dependent variabel is stunting condition. Data collection method used secondary data for birth weight and height of toddlers, for primary data such as maternal education, mother's occupation, family income, and household food security. Data analysis using chi square and Rho spearman. Confidence interval for this study is 95%.

Results: The results showed that 57.1% of children were female, 77.1% aged over 24 months, 8.6% had a history of low birth weight, 28.6% had a history of underweight, 62.9% of mothers had low education, 94.2% work as housewives, 57.1% have an income of >Rp. 500,000 – Rp. 1,000,000, 80% have food insecure and 40% of children under five are stunted. Analysis of the test showed that there was no relationship between the characteristics of toddlres (birth weight (p=0.704) and birth length (p=0.729), socioeconomic (mother's education (p=0.116), mother's occupation (p=0.338), and family income. (p=0.540; rs=-0.107) and food security (p=0.863) with stunting in toddlers.

Conclusion: In conclusion, characteristics of toodlers, socio-economic and household food security are not risk factor of stunting.

Keywords: Birthweight, Birthlength, Socio-economic status, Food security, Stunting

INTRODUCTION

Stunting is a chronic nutritional deficiency condition characterized by age-inappropriate height. Toddlers with stunted nutritional status are more likely to develop infectious and degenerative diseases as adults (Kemenkes RI, 2018). According to Riskesdas data from 2018, the prevalence of *stunting* in children under the age of five was 30,8 %, with 32,81 % of children under the age of five experiencing *stunting* in East Java. Height indicators based on Permenkes No. 2 of 2020 to determine the categories of very short (-3SD), short (-3SD to -2SD), normal (-2SD to +3SD), and high (>+3SD).

Kampung 1001 Malam Surabaya Surabaya is a village in Surabaya City's Krembangan sub-district, Dupak Village. Kampung 1001 Malam Surabaya Surabaya is a densely populated village in Morokrembangan, Surabaya, located beneath the Dupak toll road and on the outskirts of the Kalianak River. Furthermore, the majority of the Kampung 1001 Malam Surabaya Surabaya societies works as buskers, beggars, and scavengers. It is known as Kampung 1001 Malam Surabaya because the access conditions to the village are difficult and dark, resulting in no discernible difference between day and night in the village. Inadequate sanitation conditions can increase the risk of low birth weight babies (Sohibien, G.P.D. and Yuhan, R.J., 2019). *Stunting* can also be caused by a low birth weight.

Low birth weight (LBW) is a condition in which the baby's birth weight is less than 2.500 grams (WHO, 2004). This condition is also a manifestation of conditions such as premature birth or birth before 37 weeks, as well as fetal growth restriction or *intrauterine growth restriction* (IUGR) (WHO, 2004). Low birth weight babies account for nearly 15–20 percent of all births worldwide, or more than 20 million births each year. Low to middle income countries account for more than 95 percent of the world's low birth weight babies. The estimated prevalence of LBW is 6% in East Asia and the Pacific, 13% in Sub-Saharan Africa, and more than 28% in South Asia (WHO, 2014). According to Riskesdas (2018), birth length is classified into two categories: less than 48 cm (<48 cm) and birth length of 48–52 cm.

A baby's birth weight can influence his or her growth and development as an adult. So that mothers who maintain a healthy lifestyle and consumption during pregnancy can give birth to healthy babies; on the other hand, if the mother does not maintain a healthy lifestyle and has a deficiency condition, this can increase the risk of babies being born with low birth weight (Hartiningrum I., and Fitriyah N., 2018). Low birth weight is linked to an increased risk of mortality and morbidity both in the womb and after birth. Low birth weight babies experience growth retardation, slowed cognitive development, and an increase in chronic disease

(WHO, 2004). The mother's occupation, education, history of maternal diseases such as hypertension or other infectious diseases, and the condition of multiple pregnancies can all be risk factors for LBW (Susanti, Y., et.al., 2018). Other factors that can affect the baby's birth weight condition include mothers who are taller than ≤155 cm, mothers who have complications during pregnancy, gestational hypertension, irregular or incomplete *antenatal-care* ANC) visits, and low maternal education (Mulu, et al., 2020).

Birth length is a term used to describe the baby's growth while in the womb. If the fetus is deficient in energy and protein, it can increase the risk of stunted growth (Supariasa et al., 2012). One of the primary causes of children's nutritional status under the age of five is socioeconomic status. The education of one's mother, for example, demonstrates one's social standing. Mother's education is one of the factors that can influence toddlers' nutritional status; this is related to the mother's ability to select foods that meet the needs of toddlers (Ni'mah & Muniroh, 2015; Yuneta et al., 2019). According to Surabaya research, mothers with low education have a 3,313 times greater risk of their toddler being stunted. According to this study, children under the age of five who live in low-income households are five times more likely to be stunted. Because the amount of income will be related to households' ability to meet their food needs. If the needs are not met, the child's intake is insufficient, putting the child at risk of stunting (Septikasari, et.al., 2017; Nurmalasari, et.al., 2020).

One of the indirect causes of nutritional status is food security. The household is said to be food insecure if the expenditure on food is high but the intake is insufficient, whereas the family is said to be food insecure if the expenditure on food is low but the intake is adequate. Factors such as the number of family members, family income, the type of work done by the head of the family, and family education can all have an impact on the condition of family food security (Sundari and Nachrowi, 2016).

The purpose of this research was to see if there was a link between the characteristics of children under the age of five, socioeconomic status, and household food security, and nutritional status conditions (*stunting*) in children aged 12–59 months in Surabaya's Kampung 1001 Malam Surabaya area. Benefit of this research is to know the relationship between the characteristic of children under five, socio-economic and food security with stunting conditions in Kampung 1001 Malam Surabaya.

METHODS

This research is a quantitative analytic study using a cross sectional research design. A Cross sectional study design is used to measures the outcome and the exposures at the same time. The participant of this study are fair choosen based on the criteria inclusion and exclusion (Setia, 2016). This research uses secondary data, such as birth weight and length, as well as primary data collected through questionnaires, such as maternal education, mother's occupation, monthly family income, and food security. The population of this research consists of toddlers aged 12–59 months living in Kampung 1001 Malam Surabaya, Krembangan District, Surabaya City. The total sampling method was used to select 35 toddlers with inclusion criteria, namely toddlers who are willing to participate in the research and toddlers who live in the 1001 Malam village area. The independent variables in this studi were the characteristics of children under five, socioeconomic, and household food security, while the dependent variabel is stunting condition. Data analysis used in this research are univariate analysis and multivariate analysis. Univariate analysis was carried on the characteristics of children under five, socioeconomic, and household food security, while the multivariate used for the independent and dependent variables. Confidence interval for this study is 95%. The *Chi square* test in the *software Statistical Package for the Social Sciences* (SPSS) is used in this research. This research has obtained a research ethics permit from the Research Ethics Commission of the Faculty of Dentistry, Airlangga University with certificate number 416/HRECC.FODM/VII/2021.

RESULT

Characteristic of Toddlers

This research's sample consisted of 35 children under the age of five, with the characteristics listed in Table 1 below. According to Table 1, 57,1 % of the children under the age of five who participated in the study were female, while 42,9 % were male. Toddlers were 77,1 % older than 24 months and 22,9 % younger than 4 months. 8,6 % of children under the age of five had a history of being underweight, while 91,4 % had a history of being normal weight. While 28,6 % had a history of shorter body length, 71,4 % had a history of normal body length. As many as 40% of children under the age of five are stunted, while 60 % have normal nutritional status.

Table 1. Toddler Characteristics

Characteristics	n	%
Gender		
Female	20	57,1
Male	15	42,9
Toddler Age		
≤ 24 months	8	22,9
> 24 months	27	77,1
Birthweight		
Low birth weight (<2500 g)	3	8,6
Normal (≥ 2500 g)	32	91,4

Characteristics	n	%
Birthlenght		
Short birth lenght(<48 cm)	10	28,6
Normal (≥48 cm)	25	71,4
Nutritional status		
Stunting(<-2SD)	14	40
Normal (≥-2SD)	21	60

Socio-economic Status

In this research, socioeconomic status variables were examined through the mother's most recent education, occupation, and monthly family income. According to Table 2, 62,9 % of mothers have a low education or have completed less than 9 years of compulsory education, while 37,1 % of mothers have a higher education or have completed at least 9 years of compulsory education. 94,2 % of mothers under the age of five worked as housewives, 2,9% as employees, and 2,9% as buskers. Family income per month is Rp50.000–Rp250.000 for 2,9%, >Rp250.000–Rp500.000 for 11,4%, >Rp500.000 – Rp1.000.000 for 57,1%, and >Rp1.000.000 for 28.6%.

Tabel 2. Socio-economic Status

Category	n	%
Maternals Education		
High (Min. 9 years)	13	37,1
Low (< 9 years)	22	62,9
Maternals Job		
Housewife	33	94,2
Employee	1	2,9
Busker	1	2,9
Family's income		
Rp50.000 – Rp250.000	1	2,9
>Rp250.000 – Rp500.000,	4	11,4
>Rp500.000 – Rp1.000.000	20	57,1
> Rp1.000.000	10	28,6

Household Food Security Condition

The household food insecurity access scale (HFIAS) questionnaire and scoring method are used in this research to assess household food security. If the HFIAS value is 0 - 1, there is food insecurity; if the HFIAS value is 2 - 27, there is food insecurity. Table 3 shows that 80 % of research respondents households are food insecurity, while 20 % are food resistant.

Tabel 3. Household Food Security

Characteristics	n	%
Food security condition		
Food security	7	20
Food insecurity	28	80

Relationship Between Birthweight, Birthlenght, Maternals Education, Maternals Job, Household Income, and Food Security with Stunting Condition of Toodlers

The chi square and spearman rho tests were used in this research. The chi square test was used to compare birth weight, birth length, mother's education, mother's occupation, and food security. Meanwhile, the monthly family income is tested using the Spearman Rho test. Table 4 shows that there is no correlation between toddler birth weight and stunting conditions (p=0,324), toddler birth length (p=0,445), mother's education (p=0.116), mother's occupation (p=0,338), family income per month (p=0,540; rs=-0,107), and family food security (p = 0,863) and stunting conditions in Kampung 1001 Malam Surabaya Surabaya.

The findings revealed that the number of female children under the age of five was higher than the number of male children under the age of five, with 20 children (57,1 %) for girls and 15 children (42,9 %) for boys. Gender is an important factor in determining the nutritional status of children under the age of five. Male toddlers had a 2,8 times greater risk of *stunting* than female toddlers, according to research conducted by Aswaf, et.al (2015) on toddlers aged 5–59 months. Another research found that male toddlers are more likely to be stunted than female toddlers. This is due to male toddlers' faster motor development. As a result, it necessitates more energy; if this phase is not fulfilled, the risk of *stunting* increases (Setyawati, 2018). Furthermore, 22,9 % are under the age of 24 months, while 77,1 % are over the age of 24 months

According to Riskesdas data (2018), the prevalence of children with low birth weight in Indonesia is 6,2 %, with East Java having a prevalence of 6,6 %. According to the findings of this research, 8,6 % of children under the age of five had a history of low birth weight conditions, while 91,4 % had a history of normal birth weight, which was higher than the prevalence of low birth weight in Indonesia and East Java. Low birth weight, or

Tabel 4. Relationship between Independent and Dependent Variables

Independent Variables	Dependent Variables	rs	p-value
Birthweight		-	0,324
Birthlength		-	0,445
Maternals education	Stunting condition of toddlers	-	0,116
Maternals job		-	0,338
Household income		-0,107	0,540
Food Security		-	0,863

LBW, can be caused by a variety of factors. According to Srimiyati and Ajul (2021), the determinant of low birth weight, namely maternal gestational age less than 37 weeks or premature, has a 2,53 times greater risk of giving birth to babies with low birth weight than normal gestational age (above 38 weeks to 40 weeks). Another determinant of low birth weight babies is the condition of multiple pregnancies; mothers with multiple pregnancy conditions have a 2,37 times greater chance of giving birth to babies in low birth weight conditions than single pregnancies, and pregnancy conditions that experience complications have a 4,89 times greater chance of giving birth to babies in low birth weight conditions. According to another research, babies with low birth weights can be caused by anemia during pregnancy, because anemia during pregnancy can have a negative impact on both the mother and the fetus (Novianti & Aisyiah, 2018). Premature birth, mothers with a secondary school education, mothers who live alone during pregnancy, mothers who do not take iron supplementation according to recommendations, and mothers with Hb levels of <11 g/dl in the first trimester are all risk factors for low-birth-weight children under five, according to research in Ghana (Adam, et.al.,2019). According to the findings of Riskesdas (2018), the prevalence of children under the age of five with a history of body length less than 48 cm is 22,6 %, while the prevalence in East Java is 17,4 %. According to the findings of this research, 8,6 % of children under the age of five had a history of low birth length, while 91,4 % had normal birth length conditions.

The findings revealed that 40 % of children under the age of five in the 1001 Malam Village area had stunting nutritional status, or < -2SD, while 60% had normal nutritional status. When compared to the prevalence of stunting in Indonesia (30,8 %) according to Riskesdas data in 2018, and the prevalence of stunting in East Java (32,8 %), the prevalence of stunting in Kampung 1001 Malam Surabaya is higher. *Stunting* is a chronic malnutrition condition characterized by excessive body length or height for one's age (Kemenkes RI, 2018). Stunting conditions can be caused by a variety of factors. According to research conducted in Southern Ethiopia, the cause of *stunting* was the condition of the gender of children under the age of five (male), feeding before the age of six months, and infectious diseases such as diarrhea, which could increase the risk of stunting (Aswaf, et. al., 2015).

According to UNICEF (2018), there are three causes that can affect nutritional status: basic causes such as inability to access services, economic conditions and human resources that do not meet, and socio-cultural, economic, and political conditions. The following are indirect causes, such as unsanitary household conditions, poor parenting conditions, and insufficient housing, environment, and access to health services. The final cause is a direct cause, which is food consumption and the presence of infectious diseases.

According to the chi square test results, there is no link between a history of low birth weight in toddlers or LBW and stunting conditions in toddlers aged 12-59 months in Kampung 1001 Malam Surabaya. This is due to the fact that there are stunted toddlers who have a history of normal birth weight. This finding contrasts with the findings of a study conducted in Hulu Sungai Utara Regency, which found that toddlers with a history of low birth weight had a 5.87 times greater risk of *stunting* than children with normal birth weight (Rahayu, et.al., 2015).

The findings of this research are consistent with Rahmadi's (2017) findings that there is no relationship between birth weight and nutritional status in children under the age of five. Similar research conducted in Pemalang Regency found no link between a history of birth weight and stunting in infants aged 13–36 months (Hidayati, 2021). Other studies have also found no link between birth weight and tuning conditions in toddlers aged 6–23 months (Amaliah, Sari, & Suryaputri, 2016). This demonstrates that other factors, such as inadequate breastfeeding and complementary feeding given when the baby is less than 6 months old, can have an impact on *stunting* conditions. Giving MP ASI too soon can cause digestive problems, making babies vulnerable to infectious diseases like diarrhea (Rahayu, et.al, 2011). Other research indicates that babies who are not exclusively breastfed have a twofold increased risk of *stunting* (Wahdah, 2015). Furthermore, economic conditions and educational levels can have an impact on childhood *stunting*. Toddlers from middle to lower-income families are at risk of stunting; this is related to a family's ability to meet food needs in terms of both quality and quantity. Furthermore, parental education can have an impact on child *stunting*; for parents with a higher level of education, it will be easier to absorb and implement the information obtained, as well as raise health awareness (Rahayu, et.al., 2015).

The results of this research revealed that there was no link between a history of birth length under five and stunting conditions. This finding was consistent with the findings of a study conducted in Padie Regency, which found no link between a history of birth length and stunting conditions in toddlers aged 24-60 months (Dosantos, 2007). Husnah and Dimiati, 2020). A similar study found no link between a history of birth length and stunting in children under the age of two in Surabaya's Ampel Village area (Tsaralatifah, 2020). Another research found that a history of birth length is not a risk factor for stunting in toddlers aged 6–24 months in Bogor (Rukmana, Briawan, & Ekayanti, 2016). However, other findings in research conducted by Rahmadi (2017) revealed a link between a toddler's history of birth length and *stunting* conditions in toddlers aged 12-59 months in Lampung Province, with toddlers

with a history of birth length less than 48 cm having a risk of experiencing *stunting* that was 1,56 times greater than that of toddlers with a history of normal birth length. Similar research found a link between a history of birth length and stunting conditions in children aged 13–36 months. This is due to the fact that at that age, toddlers have not experienced maximum growth due to a variety of factors, one of which is a lack of food intake (Hidayati, 2021). Research conducted in Pati Regency found that body length was a risk factor for stunting in toddlers aged 12-36 months (Anugraheni & Kartasurya, 2012).

Stunting conditions are not only caused by a long history of low birth weight, but there are other risk factors that can affect stunting conditions in toddlers. According to Widyaningsih, Kusnandar, and Anantanyu (2018), the risk factors for stunting are eating patterns, birth length, and food diversity, with the latter being the most influential. Toddlers who do not consume a variety of foods are 3,213 times more likely to suffer from stunting. Another factor that can contribute to toddler stunting is the mother's lack of knowledge and frequent visits to the posyandu (Tralatifah, 2020). According to Mediani (2020), the most common causes of stunting in Indonesia are low birth weight, premature birth, short parental conditions, parental education, a large number of family members, infections, and exclusive breastfeeding.

The chi square test results show that there is no relationship between mother's education and toddler stunting. This is due to the fact that in this study, mothers with a higher education had children under the age of five who were stunted. According to Laksono and Megatsari's (2020) research, mothers of toddlers with a junior high school education level (SMP) have a 2,075 times greater risk of their toddler experiencing stunting when compared to mothers with a college education level, while mothers with a high school education level /equivalent have a 3,157 times greater than those who have a college education level. The research of Ni'mah and Muniroh (2015) shows that there is no relationship between the mother's education level and the stunting condition of toddlers. This is due to the fact that other factors, such as parenting and economic circumstances, have a greater influence. Although mother's education is one of the factors that can influence the incidence of stunting in toddlers, this does not imply that mothers with low levels of education are too lazy to access information about their children's nutritional needs (Septikasari, 2018; Septikasari, et.al., 2017). Mother's work is the next category. The chi square test results show that there is no relationship between the mother's occupation and the stunting condition of children under the age of five (p = 0,338). This result is in line with research conducted by Liswati (2016), which state that there is no relationship between mother's work and the nutritional status of children under the age of five,

because other factors, such as maternal parenting, have a greater influence. The monthly family income is followed by the spearman rho test results, which show that there is no relationship between family income and stunting conditions. This is because low-income families still pay attention to their children's dietary intake to ensure that it is adequate (Sampouw, 2021).

Family food security was determined using a household food insecurity access scale questionnaire with two categories, namely food security (score 0-1) and food insecurity (2 – 27). According to the findings of this research, there is no link between family food security and stunting conditions in children under the age of five (p = 0,863). A research conducted in Yogyakarta with a sample of toddlers aged 6-23 months revealed that there was a relationship between household food security conditions and stunting. Families experiencing food insecurity are 2,62 times more likely to have stunted children under the age of five (Masrin, et.al., 2014). According to the findings of a similar study, families who are food insecure have a 6,9 times greater risk of their toddler being stunted (Aritonang, et.al., 2020).

CONCLUSIONS

According to the research findings, it can be concluded that there is no relationship between toddler characteristics (birth weight and length), socioeconomic status (mother's education, occupation, and household income), and household food security with stunting conditions for toddlers aged 12-59 months in the Kampung 1001 Malam Surabaya Surabaya area. However, because the prevalence of low birth weight in Kampung 1001 Malam Surabaya is higher than in Indonesia and East Java, the contribution of health services and cadres is required to reduce the incidence of LBW. Furthermore, the factors that cause stunting are caused by more than just a long history and birth weight, economic conditions, food security, and maternal education, so additional supporting variables are required in future research. The Strenght of this research is study about nutrition in this area is still rare, while the weakness of this reasearch is the variable that used in this study is the direct caused of nutritional problems not the direct causes. So further study are needed so that the results are more significant.

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