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The Influence of Maternal Age on Stunting Toddlers in Balung Lor Village, Balung District

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ABSTRACT

Stunted toddlers represent a chronic nutritional problem that is influenced by maternal conditions. The intra-uterine growth and development of the fetus, as well as the postnatal development of toodlers, are influenced by maternal factors. This study aims to analyze the effect of maternal age during pregnancy on the inscidence of stunting in toddlers. The design of this study is a comparative analytic method with a retrospective approach. The population is all mothers with stunted children aged 0-59 months, totalling 178 toddlers. A sample of 123 was taken using random sampling technique. Data were collected using observation sheets. The obtained data then were analyzed using chi square test. There was no effect of maternal age during pregnancy on the incidence of stunting in toddlers (p value = 0.649). Very short stunted in toddlers is observed among those whose mothers were in the category of healthy reproductive age (20-35 years). Maternal age during pregnancy is not the main factor causing stunting. So it is necessary to research other causal factors.

Keyword: Pregnant mother; Toddler; Stunting

ABSTRAK

Masalah balita Stunting menggambarkan masalah gizi kronis yang dipengaruhi oleh kondisi ibu/ calon ibu, salah satu faktor tidak langsung penyebab stunting adalah usia ibu saat hamil. Penelitian ini bertujuan untuk menganalisis Pengaruh Usia ibu hamil dengan kejadian balita stunting. Desain penelitian ini menggunakan metode analitik komparasi dengan pendekatan retrospektif. Populasinya adalah semua ibu yang memiliki anak balita usia 0-59 bulan dengan stunting sejumlah 178 Balita. Tehnik pengmbilan sambil menggunakan teknik random sampling dengan jumlah sampel 123 Balita. Pengumpulan data menggunakan lembar Observasi. Analisa data menggunakan chi square. Hasil penelitian didapatkan chi square = 0,649 sesuai dengan teori chi square hal ini dapat diartikan bahwa H0 diterima yang artinya Tidak Ada Pengaruh Usia Ibu Saat Hamil dengan kejadian Balita Stunting. Berdasarkan penelitian Kategori balita stunting tidak dipengaruhi oleh usia ibu saat hamil dan dari penelitian ini usia ibu saat hamil yang dominan yang memiliki balita stunting adalah usia 20-35 thn, hal ini tidak sesuai dengan teori yang mengatakan bahwa usia ini adalah usia yang di katakan siap secara fisik,psikologi dan social ekonomi sehingga sangat kecil kemungkinan memiliki balita stunting. Hal ini di karenakan selain melihat factor usia hamil masih ada factor lain penyebab balita stunting. Diharapkan penelitian ini dapat digunakan sebagai acuan untuk penelitian selanjutnya dan bisa dilakukan penelitian faktor penyebab yang lain seperti pola asuh ibu balita stunting

Kata Kunci: : Ibu hamil; Balita; Stunting

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Introduction:

The impaired growth and development experienced by children due to poor nutrition, repeated infections, and inadequate psychosocial stimulation is defined as stunting. Stunting in tooflers occurs in all countries. The incidence of stunting is especially high in developing countries. The global prevalence of stunted toddlers in 2022 was 22.3%, approximately 148 million children under 5 years old (WHO, 2023). The highest incidence of stunting occurred in Asia with 83.6 million. Southeast Asia is one part of Asia that has the second highest proportion of stunted toddlers after South Asia, 52 %.

Based on the results of the Indonesian nutritional status study (SSGI), in 2022 there were 21.6% of toddlers who were stunted, in East Java the incidence of stunting was 19.2%. The incidence of stunting in Jember is 34.9% (Kemenkes, 2023). Based on Community-Based Nutrition Recording and Reporting report in 2021, there are 5 health centers with the highest incidence, including Puskesmas Balung (31.7%), Puskesmas Rowotengah (27.85%), Puskesmas Jelbuk (27.55%), Puskesmas Bangsal (26.95%), and Puskesmas Kalisat (24.98%).

The age factor can influence the degree of stunting in toddlers. Pregnancy under the age of 20 can be said to be risky because based on body anatomy, the development of a woman's pelvis at that age is not yet perfect, which can cause difficulties during childbirth. At the age of 35 years, both in the first pregnancy and subsequent pregnancies, are classified as pregnancies at old age. Women who become pregnant at this age are generally more at risk of experiencing health problems during pregnancy (Sani et al., 2020). Maternal factors play an important role in the prenatal and postnatal periods. The mother's ability to facilitate intrauterine growth during pregnancy and support as well as the toddler years is influenced by the mother's physical and mental readiness. A mother who is mentally ready to get pregnant and care for her baby certainly has an impact on her ability to care for her pregnancy and baby. Physically, mothers of healthy reproductive age will give birth to healthy babies. However, the phenomenon that occurs in Balung District is that most mothers who have toddlers are in the healthy reproductive category.

The impacts of stunting are both short-term and long-term and include increased morbidity and mortality. The short-term impact is increased risk of infections and non-communicable diseases, increased susceptibility to accumulate fat mostly in the central region of the body. The long-term impacts are poor child development and learning capacity, lower fat oxidation, lower energy expenditure, insulin resistance and higher risk of developing diabetes, hypertension, dyslipidemia, reduced work capacity and negative maternal reproductive outcomes in adulthood. Furthermore, stunted children who experience rapid weight gain after 2 years have an increased risk of becoming overweight or obese later in life (Soliman et al., 2021).

Stunting is addressed through Specific Interventions and Sensitive Interventions targeting the first 1,000 days of a child's life until 6 years of age. Presidential Regulation No. 42 of 2013 states that the first 1000 days. Movement consists of specific nutrition interventions and sensitive nutrition interventions. Specific interventions are actions or activities that are specifically planned for the first 1000 days group. While sensitive interventions are various development activities outside the health sector. The target is the general public, not specifically for the first 1000 days. Targeting pregnant women to explore whether maternal age affects the incidence of stunting is not yet incorporated into a sensitive program. Even though according to Kurniawati, Sujiyatini, & Saputro (2022) it is stated that the age of pregnant women affects the incidence of stunting. The phenomenon that occurs in Balung Subdistrict is that the incidence of stunting is still high and some mothers are in the healthy reproductive category. By looking at the above phenomenon, the researcher wants to know whether "The age of the mother during pregnancy affects the incidence of stunting toddlers".

Methods:

This research used a quantitative approach. Based on the research objectives, the

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researchers used comparative analytic method with a retrospective approach. Researchers studied the effect of maternal age during pregnancy on the incidence of stunting in toddlers. Data collection techniques in this research used observation sheets. This study was conducted in February 2023 in Balung Lor Village, Balung Health Center, Jember Regency. The population of this study were all mothers with stunted toddlers, totalling 178 children. The sample was taken by random sampling technique and as many as 123 mothers were involved in this study. The ethical suitability test number is Reg.No:791/KEPK-Polkesma/2023. Assessment of the nutritional status of toddlers utilized Z-scores derived from height measurements taken at the midline. Data on stunting and maternal age during pregnancy were analysed using chi square test.

Results:

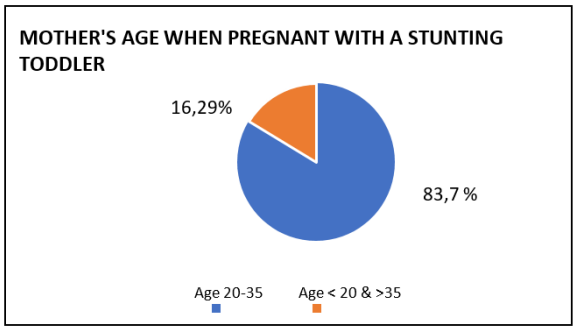

Figure 1. Respondents' maternal age

The diagram above describes the maternal age during pregnancy. The majority of respondents' maternal aged was 20-35, totalling 98 respondents.

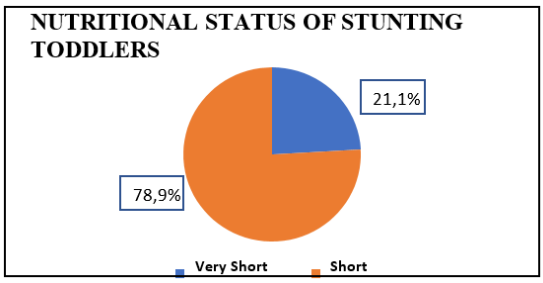

Figure 2. Nutritional status category among toddler

Based on the diagram above, among 123 stunted toddlers, there are 27 (21.1%) children with very short category and 96 (785) children with short category.

From the Chi Square analysis, it is found that $x2$ counts > $x2$ tables, namely p value 0.649 > 0.051. So, Ho is accepted. It can be concluded that there is no influence of the maternal age on the incidence of stunting in toddlers.

Table 1. Bivariate analysis of maternal age and incidence of stunting in toddlers

Age / Nutritional Status	<20 & >35		20 – 35		TOTAL	
	F	%	F	%	F	%
Short	21	80,6 %	75	76,5 %	96	78,9 %
Very Short	4	15,4 %	23	23,4 %	27	21,1%
Total	25	100	98	100%	123	100%

Discussion:

The results of the study found that ther is no effect of maternal age with the stunting in toddlers in Balung Lor village (p value=<0.05). This result is not in accordance with research (Santosa et al., 2022) which found the occurrence of stunting was influenced by the age of the mother during pregnancy. The likelihood of stunting occurring among pregnant women in the unhealthy reproductive age category, namely those aged <20 years and >35 years, is 3.56 times higher compared to women in the healthy reproductive age category (Kurniawati et al., 2022).

Age of 20–35 years is a healthy reproductive age. This age is the optimal period for a woman to undergo pregnancy and childbirth, both psychologically and physically. Pregnant at the age of 20-35, the psychological condition is stable so that with psychological stability, the mother understands and is aware of her pregnancy. This stability fosters attentive

nutritional habits, leading to optimal intake and normal weight gain, vital for healthy fetal development. And physically, at the age of 20-35, the fertility level is very high and the quality of the egg cells is very good. Apart from that, the work of the hormones estrogen and progesterone is stable so that the endometrium is perfect, causing the formation of a perfect placenta. So when the function of the placenta is perfect it will cause normal fetal growth and development (Sani et al., 2020). Meanwhile, among mother with maternal age < 20 & > 35 years, there were 25 (20.3%) mothers with stunted toddlers.

Pregnancy occurring in mothers younger than 20 or older than 35 carries inherent risks. Below the age of 20, the pelvic development may not be optimal, potentially leading to childbirth complications due to anatomical immaturity. Additionally, apart from physical concerns, pregnancy in this age group can also impact the psychological well-being of the woman involved. Women who become pregnant under the age of 20 often receive negative stigma from their peers or the surrounding environment, especially if the pregnancy is unplanned. Meanwhile, late pregnancy, namely when the maternal age is over 35 years old, is indeed riskier, both for the pregnant woman herself and her fetus. Getting pregnant at the age of 35 years, both for the first pregnancy and subsequent pregnancies, including pregnancies at old age. Women who become pregnant at this age are generally more at risk of experiencing health problems during pregnancy (Sani et al., 2020).

Stunting can be caused by intrauterine growth. Impaired growth during the intra-uterine period impacts the baby's birth weight and organ maturity. Low birth weight (LBW) is due to impaired intra-uterine fetal growth (Jain, 2022). LBW infants are mostly delivered by mothers younger than 20 years of age (Barreto *et al.*, 2020). Psychological problems experienced by young pregnant women. Youth is a period of fun, making friends and learning. Young pregnant women must take on the responsibility of being a mother and wife. This responsibility becomes a dilemma and mothers tend to experience depression during the perinatal period. Young pregnant women are likely to cause postpartum depression in urban and rural areas. (Putri *et al.*, 2023).

The mental health of pregnant women influences intrauterine fetal growth. The fetal head circumference growth restriction is associated with maternal mental health during pregnancy (Handayani, Widiyanto, Atmojo, & Setyorini, 2020). Inhibition of fetal head growth indicates disturbed brain growth, including alterations in brain biochemical components (Wu et al., 2020). Disturbed brain growth has an impact on the growth and development of the baby. Depression during pregnancy are unable to care for the pregnancy. Pregnant women lack nutrition, self-care, ANC. This condition has an impact on the welfare of the mother and fetus Depression in the post partum period also has an impact on child rearing patterns. So that depression in the perinatal period can be one of the disorders of child growth and development (Dunn et al., 2022). Toddlers in the very short stunting category in this study were mostly (79.7%) conceived by mothers with healthy reproductive age. These results are in accordance with research (Santosa *et al.*, 2022) who found no association between maternal age and stunting. This condition can occur because the exact cause of stunting is not yet known. Stunting is caused by many factors including: nutritional status, exclusive breastfeeding, complementary feeding, vaccination status, infectious illnesses, and low birth weight. (Sari and Sartika, 2021).

Maternal nutritional status affects the availability of nutrients for fetal growth. Preconception nutritional status has an influence on the incidence of stunting (Nguyen et al., 2021).(Fitriani, Achmad Setya, & Nurdiana, 2020). Poor nutritional status during preconception has an impact on low nutrient stores. Low nutrient reserves cannot meet the needs during pregnancy. Fetal growth is not optimal if there is not enough nutrition. Maternal nutritional status during pregnancy plays an important role in facilitating fetal growth.

The level of education has an influence on the problems that exist in oneself, because from education a person will gain knowledge which will then shape attitudes in terms of decision making. The level of knowledge is closely related

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to the level of formal education, the higher the formal education, the easier it is to understand the information received. (Yamin, Suryani, Rahayu, & Juniarti, 2022). Parents' education level is very important in fulfilling family nutrition to prevent stunting children. An important factor in the high incidence of stunting is mothers' misperceptions about their children's growth and development. Mothers and families think that their children's shortness is not a problem. They perceive their children to be short due to genetic influences. This includes their perception that young children are often sick.

This is in line with research by Indrasari (2012) which states that mothers of at-risk age (less than 20 years) have a 4.2 times greater risk of experiencing LBW. The incidence of LBW and premature birth in adolescents is often associated as a manifestation of Intrauterine Growth Restriction (IUGR) which is caused by immaturity of the reproductive organs and nutritional status before pregnancy. Pregnancy under the age of 20 or teenage pregnancy can be said to be risky because based on body anatomy, the development of a woman's pelvis at that age is not yet perfect, which can cause difficulties during childbirth. A mother who is too young (< 20 years) is still in the process of growing so that her physical development is not yet complete, including her reproductive organs (Ida, 2010). At this age, blood circulation to the cervix and uterus is still not perfect so it can disrupt the process of distributing nutrients from the mother to the fetus she is carrying (Manuaba, 2012). Not only physically, pregnancy under the age of 20 can also affect the psychology of the woman who undergoes it. Women who become pregnant under the age of 20 often receive negative stigma from their peers or the environment around them, especially if the pregnancy is unplanned. Economic problems are also often an obstacle for women who become pregnant at a very young age because they are generally not yet established and do not have the education or abilities that enable them to get a job. So, psychological immaturity causes parenting patterns that are not optimal, causing birth to be stunted.

In this study, the age that had a greater influence on the incidence of stunting was the 20-35 age group, namely (79.7%). Stunting is caused by many unrelated factors. According to theory, the age group that is vulnerable to stunting is are those below 20 years and those above 35 years old during pregnancy. Regarding the nutritional status of pregnant women, most of the stunted toddlers have good nutrition. This can be seen from the fundal height of mothers of stunted toddlers during pregnancy, mothers with the fundal height more than 28 cm are as many as 90.2%. Furthermore, this is supported by the birth weights of stunted toddlers, with the majority weighing over 2500 grams, accounting for 87%. This could potentially be attributed to other factors contributing to stunting, such as the mother's level of education and employment status. The research findings reveal that primary and junior high school education were more prevalent, comprising 74 cases, equivalent to 60.2%. This indicates that the average education level of parents of stunted toddlers tends to fall within the middle to lower range.

Conclusions:

From the results of the study of the effect of maternal age with the stunting in toddlers in Balung Lor village, Balung Health Center working area, it can be concluded that children who experienced stunting in this study were born to mothers who were of reproductive age during pregnancy. Healthy reproductive age is an age that allows mothers physically, psychologically and socially to conceive, give birth and care for their babies well without growth and development disorders or stunting. Inconsistent research results with the theory can occur because stunting is caused by many factors. From the results of this study, the age of pregnant women does not have a big influence on the degree of stunting in toddlers, so further research is needed to examine maternal factors in stunting toddlers.

The limitations of this study are that the research variables used are too homogeneous so that the results of the study are less than optimal to determine the causal factors of stunting toddlers and the respondents used are only mothers who have stunted children so that there are no comparative factors in this study.

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