GLOBAL TEN PUBLIC HEALTH AND NURSING JOURNAL
Volume 3, No. 1, 2025, March, Page 25-29
ISSN: 2579-7913
DOI:https://doi.org/10.36568/gtphnj.v3i1.183

RESEARCH

Maternal Nutritional Status During Pregnancy, Maternal Age At Marriage, And The Risk Of Stunting In Children Aged 24–59 Months in The Batuan Public Health Center Area, Sumenep

Irine Christiany [1], Safrina Amalia [1], Dony Sulystiono [1]

[1] Department of Nursing, Poltekkes Kemenkes Surabaya, Surabaya, Indonesia

*Correspondence : irinesby64@gmail.com

ABSTRACT

Stunting is form failure growth consequence accumulation absence moderately long lasting nutrition starts from pregnancy until 24 months old , one of the problem nutritional problems suffered by toddlers that is stunting g which is condition short body or very short that occurs consequence lack nutrition and disease repetitive in long time in the fetus up to 2 years First life a child . Indicators used For identify stunting toddlers are based on Height index according to age (TB/A) according to WHO child growth standards with criteria stunting If z score TB/A < -2 Standard Deviation (SD) Period 0- 24 months is the defining period quality life so that called with period gold . This is a research analytic with approach cross sectional analysis with the chi square statistical test. The sampling technique sample that is use technique purposive sampling with amount sample of 62 respondents. Statistical test using the chi-square test with mark significant p = 0,1. Results research p value = 0.000 for variable nutritional status history Mother moment pregnant with risk the occurrence of stunting and p value = 0.000 for Maternal age with risk the occurrence of significant stunting that there is connection nutritional status history Mother moment pregnant and maternal age with risk the occurrence of stunting. Conclusion: There is connection between nutritional status Mother moment pregnant , Maternal age with risk the occurrence of stunting in toddlers age 24-59 months in The Batuan Public Health Center Area. It is expected health center more optimizing the counseling about importance married at the right age.

Keywords: Maternal Nutritional Status During Pregnancy, Maternal Age at Marriage, and Stunting

INTRODUCTION

Stunting is a form of growth failure (growth faltering) resulting from the accumulation of prolonged nutritional inadequacy, starting from pregnancy up to the age of 24 months. This condition is worsened by the lack of sufficient catch-up growth (Kusharisupeni, 2002; Hoffman et al., 2000). The indicator used to identify stunted children is height-for-age (H/A) according to the WHO Child Growth Standards, with stunting classified as a height-for-age Z-score < -2 Standard Deviations (SD) (Picauly & Toy, 2013; Mucha, 2013).

The 0–24 month period is considered a sensitive phase, as any adverse impacts during this time tend to be permanent and irreversible. Therefore, adequate nutrition is essential during this critical window (Mucha, 2012). The nutritional status of pregnant women is a crucial factor for fetal growth and development. Poor maternal nutrition early in life can lead to adverse outcomes later on, such as Intrauterine Growth Restriction (IUGR), Low Birth Weight (LBW), short stature, thinness, low immunity, and increased risk of mortality (Ministry of Health, Indonesia, 2015).

Nutritional problems occur throughout every life cycle stage—starting from the fetus, infant, child, adult, and into old age. The first two years of life are a critical period due to rapid growth and development during this stage (Ministry of Health, Indonesia, 2010). One of the nutritional problems faced by toddlers is stunting, which refers to a condition of short or very short stature caused by long-term nutritional deficiencies and repeated infections, from the fetal stage through the first two years of life (Black RE, 2008).

The nutritional status of pregnant women greatly influences fetal growth. If a mother's nutritional status is normal during pregnancy, she is more likely to deliver a healthy, full-term baby with normal birth weight. In other words, the quality of a newborn is highly dependent on the mother's nutritional condition during pregnancy (Lubis Z, 2003).

Out of 23,708,844 children under five in Indonesia, it is estimated that more than four

million are severely stunted. The prevalence of stunting in East Java reached 26.2% (Health Office, 2018). According to the 2013 Basic Health Research (Riskesdas), there are 100 districts in Indonesia with high stunting rates, 11 of which are in East Java, including Sumenep, Pamekasan, Sampang, Bangkalan, Probolinggo, Bondowoso, Jember, Malang, Trenggalek, Nganjuk, and Lamongan.

To support the stunting prevention program, the Sumenep District Government has issued several regulations, including Regent Regulation No. 14 of 2019 on Accelerating Stunting Prevention and Regent Decree No. 118/89/KEP/435.012/2019 on the Stunting Reduction Acceleration Team. These programs have yielded results: based on stunting prevalence data in Sumenep Regency, there was a decrease of 18.2%, from 52.5% in 2013 to 34.3% in 2018 (Sumenep District Government, 2019)

METHOD

This study is an analytical study using a cross-sectional method (relationship and association). The population consisted of 120 children aged 24–59 months, with a sample size of 45 children aged 24–59 months who met the inclusion criteria. This study used non-probability sampling with purposive sampling. The independent variables were the history of maternal nutritional status during pregnancy and the mother's age at marriage. The dependent variable was the risk of stunting in children aged 24–59 months.

Data collection involved weighing and measuring the height of pregnant women. Nutritional status was assessed based on anthropometric indices, including body weight and height expressed as Body Mass Index (BMI), and measurement of Mid-Upper Arm Circumference (MUAC). For the maternal age at marriage variable, interviews were conducted regarding age at marriage and age during pregnancy. Stunting was measured using the WHO Child Growth Standards curve based on Z-scores. The researcher then proceeded with data tabulation and analysis.

DISCUSSION

This study is an analytical study using a cross-sectional method (relationship and association). The population consisted of 120 children aged 24–59 months, with a sample size of 45 children aged 24–59 months who met the inclusion criteria. This study used non-probability sampling with purposive sampling. The independent variables were the history of maternal nutritional status during pregnancy and the mother's age at marriage. The dependent variable was the risk of stunting in children aged 24–59 months.

Data collection involved weighing and measuring the height of pregnant women. Nutritional status was assessed based on anthropometric indices, including body weight and height expressed as Body Mass Index (BMI), and measurement of Mid-Upper Arm Circumference (MUAC). For the maternal age at marriage variable, interviews were conducted regarding age at marriage and age during pregnancy. Stunting was measured using the WHO Child Growth Standards curve based on Z-scores. The researcher then proceeded with data tabulation and analysis.

1.General Data

Table 1 Distribution frequency Age Mother Now

No	Age	Frequency	%
1	17 years	2	4.4
2	18 years	4	8.9
3	19 years old	9	20.0
4	20 years	6	13.3
5	21 years	9	20.0
6	22 years	10	22.2
7	23 years	5	11.1
Total		45	100%

2. Special Data

Table 2 Distribution of maternal nutritional status during pregnancy and maternal age of marriage with risk the occurrence of stunting in toddlers in the work area Batuan Health Center

No	Variable		Frequency (f)	%
1	Maternal nutritional status during pregnancy	Not enough	8	17.8
		Good	18	40.0
		More	19	42.2
	Total		45	100
2.	Mother's age of marriage	Teenager young 12-18 Years	21	46.7
		Teenager mature >19 Years	24	53.3
	Total		45	100
	The risk of stunting in toddlers	Stunted	20	44.4
		Not stunted	25	55.6
	Total		**45**	**100**

Among the mothers in the study, 42.2% (19 individuals) were classified as overweight during pregnancy, 40.0% (18 individuals) had good nutritional status, and 17.8% (8 individuals) were underweight. Regarding maternal age at marriage, 53.3% (24 individuals) married in late adolescence (over 19 years), while 46.7% (21 individuals) married in early adolescence (12 to 18 years). As for the toddlers' stunting status, 55.6% (25 children) were not stunted, whereas 44.4% (20 children) were stunted.

Bivariate Analysis

Table 3 Distribution tabulation cross nutritional status Mother moment pregnant with The risk of stunting in toddlers in the work area health center rock

Nutritional status Mother moment pregnant	In toddlers				Total	%	Chi-Square	α
	Stunted		Not stunted				*Pvalue*	
	N	%	N	%				
Not enough	2	25	6	75	8	100	0,000	0.1
Good	18	100	0	0	18	100		
More	0	0	19	100	19	100		
Total	20	44.4	25	55.6	45	100		

Based on the table above, the research results from 45 participants showed that among children who were not stunted, 19 (100%) had mothers with overweight nutritional status during pregnancy. Among children who were stunted, 18 (100%) had mothers with good nutritional status during pregnancy. For children who were not stunted, 6 (75%) had mothers with poor nutritional status, while 2 (25%) of stunted children had mothers with poor nutritional status. There were no children who were not stunted with mothers of good nutritional status, nor were there any stunted children with mothers in the overweight category.

Based on the Chi-Square test analysis of maternal nutritional status during pregnancy and the risk of stunting in children, the significance value was P-value = 0.000 < 0.1, indicating a statistically significant relationship between maternal nutritional status during pregnancy and the risk of stunting in children. These findings are consistent with existing theory, which states that mothers with poor nutrition from the first to the last trimester are more likely to give birth to low birth weight (LBW) babies, who are at greater risk of becoming stunted (Kusharisupeni, 2002). Pregnant women with poor nutritional status are also three times more likely to develop anemia compared to those with good nutritional status (Marlapan S et al., 2013).

Table 4 Distribution tabulation cross age wedding Mother with The risk of stunting in toddlers in the work area health center rock

Age wedding Mother moment pregnant	In toddlers				Total	%	Chi-Square	α
	stunted		Not stunted					
	N	%	N	%			*Pvalue*	
Teenager young 12-18 years	0	0	21	100	21	100	0,000	0.1
Teenager Adults > 19 years old	20	83.3	4	16.7	24	100		
Total	20	44.4	25	55.6	45	100		

The study results from 45 participants showed that among children who were not stunted, all 21 (100%) had mothers who married in early adolescence (ages 12–18). Among children who were stunted, 20 (83.3%) had mothers who married after age 19, while 4 (16.7%) of non-stunted children had mothers who married after age 19. There were no stunted children whose mothers married between ages 12 and 18.

Based on the results of the Chi-Square test analyzing maternal age at marriage and the risk of stunting in children, a significance value of P-value = 0.000 < 0.1 was obtained, which indicates a significant relationship between maternal age at marriage and the risk of stunting in children. Women under the age of 20 are highly vulnerable to obstetric fistula, a condition that can occur as a result of early sexual activity. Early marriage is influenced by several factors, including cultural and social norms, economic status, and educational level. Cultural and social norms, including religious beliefs, play a major role in determining the age at which women are married. In some parts of Indonesia, there is a prevailing stigma against women who are not married by the age of 17, and it is common for girls to marry between the ages of 14 to 16, contributing to the high rate of early marriages (Qibtiyah, 2014).

Child marriage is closely associated with high fertility rates, short birth intervals, and unplanned pregnancies (USAID, 2006). This study shows that low educational attainment was a major factor behind the respondents' decision to marry early, as it influenced their parents' decision to marry them off at a young age. According to UNICEF (2006), several factors contribute to the occurrence of child marriage, including poverty, the belief that marriage can protect girls, family honor, social norms, religious laws that permit early marriage, and a weak legal system that fails to regulate minimum marriage age effectively. However, the main causes of early marriage are generally low economic status, low education level, and external pressures, such as parental pressure and environmental influence.

CONCLUSION

In the working area of Batuan Public Health Center (Puskesmas Batuan), most toddlers had mothers who were overweight during pregnancy, followed by mothers with normal nutritional status. This is likely because pregnant women tend to eat more, and their nutritional needs increase, leading to an increase in maternal nutritional status compared to pre-pregnancy levels. Regarding the maternal age at marriage, most mothers married between the ages of 17 and 25, which falls into late adolescence. This age is considered sufficiently mature for marriage; however, early adolescence is not ideal, as the younger the mother at marriage, the higher the risk of giving birth to a stunted child.

There is a relationship between maternal nutritional status during pregnancy and the risk of stunting in children aged 24–59 months in the Batuan Health Center area. Interestingly, this study found that toddlers whose mothers had good nutritional status during pregnancy were more at risk of stunting compared to those whose mothers had poor nutritional status.

There is also a relationship between maternal age at marriage and the risk of stunting in toddlers aged 24–59 months in the Batuan Health Center area. Toddlers whose mothers married in late adolescence were found to be more at risk of stunting compared to those whose mothers married during early adolescence.

BIBLIOGRAPHY

Black RE,2008 Allen LH, Bhutta ZA, Caulfield LE, de Onis M, Ezzati M, Mathers C, Rivera J; Maternal and Child Undernutrition Study Group. Lancet. 2008 Jan 19;371(9608):243-60. doi : 10.1016/S0140-6736(07)61690- 0. PMID : 18207566 Review.

Dinkes , (*2018*) *Health Profile of East Java Province 2017 Surabaya: East Java* Provincial Health Office .

Hoffman DJ, Sawaya AL, Verreschi I, Tucker KL, Roberts SB. 2000. *Why are nutritionally stunted children at increased risk of obesity? Studies of metabolic rate and fat oxidation in shantytown children from São Paulo, Brazil* . Am J Clin Nutrition, 72 : 702–7

Ministry of Health of the Republic of Indonesia. (2013) Report Basic Health Research (Riskesdas) 2013. Jakarta

Ministry of Health of the Republic of Indonesia. Health in Sustainable Development Goals (SDGs) Framework . Jakarta 2015.

Kusharisupeni . 2002. The role of *birth status against stunting in infants : A studies prospective* . Journal Medical Trisakti , 2002, 23: 73-80

Lubis, Z. 2003. Nutritional Status of Pregnant Women and Its Influence Regarding Babies Who Are Born . Introduction Philosophy of Science (PPS702) Postgraduate Program S3 IPB November 2003. Bogor.

Marlapan S, Wantouw B, Sambeka J. 2013. The relationship between nutritional status with the incidence of anemia in mothers pregnant in the Work Area Health Center Tuminting Subdistrict Tuminting Manado City. Ejournal of Nursing . 1(1): 1-7.

Mucha, 2012. *Implementing Nutrition-Sensitive Development: Reaching Consensus briefing paper* . www.bread.org/institute/papers/nutrition-sensitive-interventions.pdf. Accessed on January 6 , 2019

Qibtiyah M. Factors that Influence Early Marriage of Women. Journal Biometrics and Population . 2014;3(1):50-8

Sumenepkab.go.id. July 3, 2019. Sumenep Regency Government Sumenep Succeed Reduce the Number of Stunting Sufferers . https://sumenepkab.go.id/berita/baca/pemkab-sumenep-berhasil-turunkan-angka-penderita-stunting

UNICEF. (2006). Much Done More To Do. New York: UNICEF.

USAID. Preventing child marriage: protecting girls' health. [downloaded April 29, 2009]. Got it from :www. usaid.gov. 2006.