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ADOLESCENT MARRIAGES AND RISK OF STUNTING IN INDONESIA: BASED ON INDONESIAN FAMILY LIFE SURVEY (IFLS) 2014

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ABSTRACT

Introduction. The 2018 Basic Health Research Report recorded that 58.8% of women aged 10-19 years had been pregnant and 25.2% were pregnant. **Aims:** The study aimed to determine the relationship between adolescent marriage and the risk of stunting in Indonesia. **Method.** This research used Indonesian Family Life Survey (IFLS) 2014 data with a cross-sectional approach. The study sample was 4,809 children who met the inclusion criteria, such as biological children, live births, children aged 1-5 years in the 2014 IFLS, children living with biological parents, complete data on the child's length or height, data on the characteristics of the child, mother, and family, the child does not have a disease. Independent variable is the age of the mother at marriage. The dependent variable is the incidence of stunting. Bivariate analysis used the Chi-Square test and multivariate analysis used logistic regression. **Result.** The risk of stunting in children under five years in Indonesia in 2014 was 36.6%. The risk of stunting is higher in children under five years of married mothers in adolescence (42.4%) compared to mothers who are married at an old age (35%). Adolescent marriage is associated with the risk of stunting in children under five years, married adolescents have a 1.2 times risk of stunting compared to mothers who are married at an older age (p-value 0.046). **Conclusion.** Adolescent marriage increases the risk of stunting. Cross-sectoral integrated interventions are needed to implement the marriage age maturity program to prevent adolescent marriages to reduce the risk of stunting.

Keywords: Adolescent, growth disorders, marriage, pregnancy, under-five children

INTRODUCTION

Adolescent marriage is a very serious problem because it is risky for both mother and child (Fadlyana and Larasaty, 2016). In Indonesia, the number of adolescent marriages is quite high. The Demographic and Health Survey of Indonesia (DHSI) 2017 results found that 67% of Indonesia's territory included adolescent marriage emergencies. Adolescence marriage rates above 10% are evenly distributed in all provinces of Indonesia, while the distribution of adolescent marriage rates above 25% is found in 23 out of 34 provinces in Indonesia. The DHSI 2017 report also showed that 9.3% of women aged 15-19 years are married/living together, then 7% have given birth or are pregnant with their first child (National Population and Family, 2017). The 2018 Basic Health Research Report recorded that 58.8% of women aged 10-19 years had been pregnant and 25.2% were pregnant (National Institute of Health Research and Development, 2018). Adolescence marriage continues to occur even though there are restrictions on the age of marriage stipulated in the laws and regulations. Causes of high adolescent marriage are low education, rural areas, low marriage, and low socioeconomics (Mashiur, 2017).

The high prevalence of first marriage in adolescence has an impact on the high fertility rate. The younger the age at the first marriage, the longer the reproductive period, so the fertility rate also increases. Conversely, if the first marriage age is more mature then the shorter the

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reproductive period, it will decrease fertility rates. One of the efforts to reduce fertility rates is the Marriage Age Maturity program (Febriyanti and Dewi, 2017). Adolescent marriage has implications for both mother and child in various aspects, such as unwanted marriage, forced sexual intercourse, pregnancy at a very young age, an increased risk of transmission of HIV infection and other sexually transmitted diseases, as well as cervical cancer (Fadlyana and Larasaty, 2016). Adolescent marriage also has an impact outside of pregnancy. Young married mothers are at risk of giving birth to babies who have fetal growth disorders so they are born with BBLR. Low birth weight (LBW) children are at risk of growth disorders (Kusparlina, 2016). Children born with LBW will display the posture of children smaller and shorter and at risk of stunting (Bamisaye and Adepoju, 2018; Lestari, Hasanah, and Nugroho, 2018).

Stunting is a form of growth faltering of height due to accumulated nutritional insufficiency that lasts a long time from pregnancy to 24 months of age (Bloem et al., 2013). World Health Organization statistics report that the prevalence of stunting in the world is 26.7% (WHO, 2012). The prevalence of stunting in Indonesia is higher than the global figure. The 2018 Basic Health Research Report showed that the prevalence of stunting varied between provinces with a range of 17.6-42.6% and an average of 30.8% decrease compared to the 2013 Basic Health Research Report (37.2%) (National Institute of Health Research and Development, 2018). This figure shows the problem of stunting in Indonesia including serious and even severe problems in some provinces.

Age at first marriage is a characteristic of the mother which can directly or indirectly cause growth and development failure of the fetus and toddler (WHO, 2017). The results of various studies show a significant relationship between adolescent marriage and the incidence of stunting and pregnancy in adolescent (Sharma and Mishra, 2013; Prendergast and Humphrey, 2014;Larasati, Nindya and Arief, 2018). There are still limited research results that use national survey data to explain the mechanism of the relationship between adolescent marriage and the risk of stunting. This study aims to determine the relationship between adolescent marriage and stunting in Indonesia based on national survey data.

METHOD

The study used a cross-sectional design by utilizing IFLS (Indonesian Family Life Survey) data in 2014. The study population was all children under five in Indonesia who were born alive between 2010 and 2014. The research sample was children under five who met the inclusion criteria, such as biological children, live births, children aged 1-5 years in the 2014 IFLS, children living with biological parents, complete data on the child's length or height, data on the characteristics of the child, mother, and family, and the child does not have a disease. The exclusion criterion is if the child's Z-score HAZ is an outlier (<-5 SD and >+5 SD), and there is no data on the mother's age at marriage. The study sample size that met the inclusion criteria was 4,809 children under five.

The variables of this study were identified from the IFLS questionnaire. The age of the mother at marriage is defined as the age of the mother when she first has a partner and lives together, with classifications of less than 20 years (adolescence marriage) and 20 years or more (marriage is old enough). The risk of stunting was determined based on the Z-score of the HAZ index. The calculation of the Z-score HAZ index is grouped into normal length or height (Z-score≥-2) and stunting (Z-score <-2) (WHO, 2006).

The confounding variables were the characteristics of the family, children, and

mothers. Family characteristics consist of the number of children under five in the household (two groups are categorized: one toddler and more than one toddler); access to health facilities (two groups are categorized: easy and difficult); area of residence (two groups are categorized: urban and rural); socioeconomic status categorized based on the percentage of total family expenditure to meet food needs compared to total family expenditure in one month (food, non-food, education, housing) based on the cutoff point determined by BPS in 2014 (two groups are categorized: high and low); and environmental health categorized based on the condition of the respondent's residence assessed from lighting source facilities (electricity), drinking water sources, clean water sources, types of latrines, types of wastewater disposal facilities, garbage disposal, and lighting sources as the six variables. The score for each household is then classified according to quartiles (two groups are categorized: healthy and less healthy).

Characteristics of children consist of birth weight based on the weight of singleborn babies in grams regardless of the length of pregnancy (normal ≥2500 gr and low birth weight<2500 gr); gestational age categorized by length of pregnancy measured in weeks (two groups are categorized: full term if the baby is born with a gestation period of 37 weeks to 42 weeks, and less months: if the baby is born with a gestation period of < 37 weeks); infectious diseases based on the history of diseases experienced by children caused by bacteria or viruses, which in this study included infectious diseases such as diarrhea and acute respiratory tract infections (three groups are categorized: never, rarely, and frequent); immunization status based on completeness of basic immunizations (complete and incomplete); exclusive breastfeeding based on the length of time the baby only drinks breast milk, either directly or indirectly (breast milk is squeezed and then put in a bottle), and is not given other liquids except breast milk for six months (two groups are categorized: exclusive breastfeeding and breastfeeding not exclusive); and multiple births based on the number of babies born in one delivery (two groups are categorized: single and twins).

The characteristics of the mother consist of marital status (two groups are categorized: married and unmarried); mother's education based on the last formal education completed by the mother and received a diploma (four groups are categorized: primary school, junior high school, high school, and college); parity based on the many children born alive (three groups are categorized: primiparous, multiparous, grande multiparous); father's height based on the size of the father's body length in cm, measured from head to heel (two groups are categorized: normal and short); mother's height based on the size of the mother’s body length in cm, measured from head to heel (two groups are categorized: normal and short); physical activity based on the activities that the mother does in a day (four groups are categorized: low, middle, enough, and heavy); quality of antenatal care based on the health services pregnant women received during pregnancy checks (Good if you get at least 7 T checks, and Not Good if you get pregnancy checks less than 7 T); and quantity of antenatal care based on the adjustment of the frequency of pregnancy checks (Good if checking pregnancy at least one time in the first trimester, one time in the second trimester, and two times

in the third trimester, and Not Good if the frequency of pregnancy checks is not in accordance with the minimum standards).

Data processing begins with the identification of research variables from the 2014 IFLS data set. The next step is data exploration to find out the distribution of the data, the outliers and missing data were cleaned, so they were not included in the next analysis. The next step is to merge child, mother, and family data using ID (household ID and individual ID). Data processing is continued by performing data transformation using compute or recode on certain variables. To describe teenage pregnancy, risk of stunting, family characteristics, child characteristics, and maternal characteristics proportion. measures were used Chi-Square test was used to examine differences in the proportion of stunting risk based on teenage pregnancy variables, family characteristics, child characteristics, and mother characteristics. A simple logistic regression test was used at the stage of selection of candidate variables for multivariate logistic regression analysis ($p \leq 0.25$). The multivariate logistic regression test used a predictive model to control for confounding variables. IFLS data are public domain and can be accessed on rand.org. Research ethics approval was obtained from the Research Ethics Committee of the School of Public Health, University of Queensland. The IFLS survey implementation and procedures were reviewed and approved by Institutional Review Boards (IRBs) in the United States (RAND), and in Indonesia by Gadjah Mada University. Respondents signed an informed consent after receiving an explanation. The IFLS dataset can be freely accessed by the public domain after registering on the RAND Labor and Population website at http://www.rand.org/labor/FLS/IFLS/download.html.

RESULT

The risk of stunting in Indonesia in 2014 was 36.6%. Based on age at first marriage, it shows that the prevalence of stunting is higher in children under five with mothers who experienced teenage marriage (42.4%) than mothers who are moderately married (35%) (Table 1).

Table 1. Description Risk of Stunting Based on First Marriage in Indonesia

Age of First Marriage	Risk of Stunting		P-value	OR (95% CI)
	Normal (n=3,047)	Stunting (n=1,762)		
Old Enough (n=3,765)	65.0	35.0		
Adolescence (n=1,044	57.6	42.4	0.001	1.38(1.20-1.59)
Total	63.7	36.6		

The results of the study show that there is no difference in the proportion of the risk of stunting based on the number of children under five in the household and access to health facilities (Table 2). There are differences in risk of stunting by residence, socioeconomic status, and environmental health. Respondents showed that prevalence was more likely in rural (41.4%) than in urban areas (33.1%), in low socioeconomics (39.7%) than in high socioeconomics (33.6%), and in poor environmental health (37.3%) compared to families with good socioeconomics (30.5%).

Table 2. Description Risk of Stunting Based on Characteristics of Family

Characteristics of Family	Risk of Stunting		P-value	OR (95% CI)
	Normal	Stunting		
Number of children under five years	63.6	36.4	0.479	1.06 (0.91-1.23)
1 toddler (n=3940)	62.3	37.7		
> 1 toddler (n=869)				
Residential Area				
Urban (n=2764)	66.9	33.1	0.0001*	1.75(1.55-1.97)
Rural (n=2045)	58.6	41.4		
Socioeconomic Status				
High (n=2429)	66.4	33.6	0.001*	1.29(1.16-1.46)
Low (n=2380)	60.3	39.7		
Access to Health Facilities	63.4	36.6	0.669	1.18(0.89-1.56)
Easy (n=4608)	61.7	38.3		
Difficult (n=201)				
Environmental Health				
Healthy (n=495)	69.5	30.5	0.003*	1.36(1.11-1.66)
Less Healthy (n=4314)	62.7	37.3		

*multivariate candidate variables

Table 3. Description Risk of Stunting Based on Characteristics of Children

Characteristics of Children	Risk of Stunting		P-values	OR (95% CI)
	Normal	Stunting		
Birth Weight				
>3.5 kg (n=1277)	70.7	29.3		
3,1 – 3.4 kg (n=1127)	69.4	30.6	0.459	1.07(0.89-1.27)
2,8 – 3.0 kg (n=825)	60.6	39.4	0.0001*	1.57(1.31-1.89)
<2.8 kg (n=1168)	53.6	46.4	0.0001*	2.09(1.77-2.47)
Gestational Age				
Mature (n=3941)	63.5	36.5	0.615	1.02(0.88-1.19)
Premature (n=868)	62.6	37.4		
Twins Birth				
Single (n=9837)	63.5	36.5	0.224*	1.22(1.12-1.33)
Twins (n=2654)	58.8	41.2		
Infectious Diseases				
Never (n=910)	63.4	36.6		
Rarely (n=2521)	63.5	36.5	0.957	0.99(0.85-1.17)
Frequent (n=1378)	63.0	37.0	0.840	1.02(0.86-1.21)
Immunization Status				
Complete (n = 1593)	68.2	31.8	0.0001*	1.38(1.21-.56)
Incomplete (n=3212)	60.9	39.1		
Breastfeeding				
Exclusive Breastfeeding (n = 1593)	62.3	37.7	0.244*	0.93(0.82-1.05)
	64.0	36.0		
Breastfeeding not exclusive (n=3212)				

*multivariate candidate variables

Based on the characteristics of children in Table 3, show that there is no significant difference in the proportion of stunting according to gestational age, multiple births, infectious diseases, and exclusive breastfeeding. There is a significant difference in the prevalence of stunting based on birth weight and immunization status. The prevalence of stunting in under-fives was higher in infants born with low birth weight and in infants who did not receive complete immunization (39.1%) than infants who were fully immunized (31.8%). The lower the child's birth weight, the higher the risk of stunting.

Table 4. Description Risk of Stunting Based on Maternal Characteristics

Maternal Characteristics	Risk of Stunting		p-value	OR (95% CI)
	Normal	Stunting		
Mother's education				
Primary school (n = 1100)	54.4	45.6		
Junior high school (n=1172)	59.6	40.4	0.016*	0.82(0.69-0.96)
High school (n=1764)	67.3	32.7	0.0001*	0.58(0.49-0.68)
College (n=773)	73.0	27.0	0.0001*	0.44(0.36-0.54)
Marital status				
Marital status (n=4705)	63.5	36.5	0.368	1,435(0,97-2,12)
Unmarried status (n=104)	54.8	45.2		
Parity				
Primiparous (n=9837)	63.3	36.7		
Multiparous (n=2654)	64.8	35.2	0.152*	0.94(0.86-1.02)
Grande multiparous (n=1386)	55.8	44.2	0.0001*	1.37(1.22-1.53)
Physical activity				
Low (n=1497)	65.9	34.1		
Middle (n=1212)	65.3	34.7	0.743	1.03(0.88-1.20)
Enough (n=1183)	61.9	38.1	0.033	1.19(1.01-1.39)
Heavy (n=917)	58.5	41.5	0.0001	1.37(1.16-1.62)
Mother's Height				
Normal (n=3142)	63.7	36.3	0.607	1.03(0,914-1,17)
Short (n=1653)	62.9	37.1		
Father’s Height				
Normal (n=5664)	66.7	33.3	0.001*	1.60(1,47-1,74)
Short (n=3967)	52.8	47.2		
ANC Quality				
Good (n=3093)	63.0	37.0	0.781	1.22(1,07-1,37)
Not Good (n=1716)	63.5	36.5		
ANC Quantity				
Good (n=3093)	64.9	35.1	0.003*	1.20(1,06-1,26)
Not Good (n=1716)	60.6	39.4		

*multivariate candidate variables (p≤0.25)

Table 4 shows no significant difference in the prevalence of stunting among children under five years according to marital status, mother’s height, and antenatal care quality. There is a difference in the proportion of stunting risk based on the mother's education. The lower the education level of the mother, the higher the risk of stunting. The risk of stunting is higher in mothers with parity grande multipara (more than three children).

The heavier the mother's activity, the higher the risk of stunting. The risk of stunting is higher in children under five

years with short height (≤160cm) (47.2%) than in fathers who are of normal height (>160 cm) (33.3%). Based on antenatal care quantity showed that the prevalence of stunting was higher in mothers with less good antenatal care quantities which was less than 4 times as standard (39.4%) compared to good quantities (35.1%).

Table 5. Relationship of Adolescent Marriage with Risk of Stunting

Variable	B	p-value	OR (95% CI)
Age of Marriage			
Old Enough			
Adolescence	0.183	0.046	1.201 (1.002-1.438)
Residential Area			
Urban			
Rural	0.253	0.001	1.288 (1.107-1.497)
Birth Weight			
≥3.5 kg		0.000	
3.1 – 3.4 kg	0.202	0.052	1.224(0.999-1.5)
2.8 – 3.0 kg	0.496	0.000	1.643(1.322-2.042)
<2.8 kg	0.762	0.000	2.143(1.761-2.607)
Father's Height			
Normal			
Short	0.467	0.000	1.596(1.356-1.878)
ANC Quantity			
Good			
Not Good	0.734	0.031	2.082 (1.070-4.052)
Mother's education			
High school		0.001	
Junior high school	0.200	0.084	1.222 (0.974-1.533)
Elementary school	0.35	0.005	1.42 (1.112-1.812)
Primary school	0.463	0.000	1.588 (1.238-2.038)
Environmental Health			
Healthy (n=495)			
Less Healthy (n=4314)	0.219	0.08	1.245 (0.974-1.592)
Physical activity			
Low		0.004	
Middle	0.043	0.685	1.042 (0.855-1.27)
Enough	0.320	0.001	1.378 (1.132-1.676)
Heavy	0.234	0.030	1.263 (1.023-1.559)
Socioeconomic Status			
High (n=2429)			
Low (n=2380)	0.142	0.062	1.152 (0.993-1.338)
Immunization status			
Complete			
Incomplete	0.315	0.000	1.370 (1.172-1.602)
Parity			
Grande multiparous		0.128	
Multiparous	-0.077	0.356	0.926(0.786-1.091)
Primiparous	0.278	0.099	1.363(0.931-1.996)

Variable	B	p-value	OR (95% CI)
Twins Birth			
Single			
Twins	0.310	0.112	1.363 (0.931-1.996)
Constant	-2.071		

Overall Percentage = 65.9%

The results in Table 5 show that adolescent marriage was associated with the risk of stunting. Adolescence married are at risk of stunting 1.2 times (OR 95%: 1.002-1.438) compared with married mothers at mature age after controlling for variables of residence, child's birth weight, father's height, amount of ANC, mother's education, environmental health, physical activity, family socioeconomics, immunization status, parity, and multiple births. Confounding variables related to the prevalence of circumcision were area of residence, child's birth weight, father's height, number of prenatal visits, mother's education, mother's physical activity, and immunization status. Families living in rural areas are at risk of having stunting children 1.288 times (OR 95%: 1.107-1.497) compared to under-fives from families living in urban areas.

The lower the birth weight, the higher the risk of stunting. Infants with a birth weight of less than 2.8 kg are at risk of stunting 2,143 times (OR 95%: 1.761-2.607) compared to a birth weight of 3.5kg. Infants with birth weight less than 2.8-3.0 kg are at risk of stunting 1.643 times (OR 95%: 1.322-2.042) compared to the birth weight of 3.5kg. There was no significant difference in risk of stunting between birth weight 3.1-3.4kg and birth weight 3.5kg. Father's height is also associated with the risk of stunting; children with short fathers are 1.596 times at risk of (OR 95%: 1.356-1.878) experiencing stunting compared to children of fathers with normal height.

Antenatal care is associated with the risk of stunting. Mothers who have antenatal care at health facilities are a factor in the protection of stunting. Mothers with the frequency of antenatal care visits that do not meet the standards (the amount of ANC is not good) are 2,082 times at risk of having stunting children (OR 95%: 1.07-4.02) compared to mothers who make ANC visits according to standards. The lower the education level of the mother, the greater the risk of having a stunted child. Primary school-educated mothers were 1.588 times at risk (OR 95%: 1.238-2.038) of having stunted children under five years compared to high school-educated mothers, and elementary school-educated mothers were 1.42 times at risk (OR 95%: 1.112-1.812) of having stunted children under five years compared to high school-educated mothers.

Daily maternal activity is also associated with stunting in children under five years. The heavier the mother's physical activity, the greater the risk of the mother having a stunted child. Mothers with heavy activities were at risk of having stunting children 1.263 times (95% OR: 1.023-1.559), mothers with moderate activities were at risk of having children with stunting 1.378 times (95% OR: 1.132-1.676) compared to mothers with light activities. Completeness of immunity in infants is a protective factor for stunting: incomplete immunization status is at risk of stunting 1.37 times (OR 95%: 1.172-1.602) compared to infants who get complete immunizations.

The results in the final model in Table 5 show an overall percentage value of 65.9%, meaning that adolescent marriage can explain the risk of stunting by 65.9% by controlling for variables of residence, birth weight, father's height, amount of ANC, mother's education, environmental health, physical activity, family socioeconomics, immunization status, parity, and multiple births. A 34.1% risk of stunting is explained by other variables outside the variables analyzed in this study.

DISCUSSION

Risk of Stunting

The results of the IFLS 2014 data analysis found stunting in Indonesia is still a severe problem (36.6%). This finding is in line with Basic Health Research results in 2013 that 37.2% of Indonesian children under five years experienced stunting. The risk of stunting in Indonesia is a severe problem because the figure is above 30% even in some provinces, including serious problems because the prevalence is ≥ 40%, Only in four provinces is the risk of stunting below 30%, in Riau islands, Yogyakarta, Jakarta, and East Kalimantan (National Institute of Health Research and Development, 2013). The prevalence of stunting in Indonesia is even higher than the prevalence of stunting in India starting at age 2 years (25.7%), 3 years (26.4%), 4 years (24.5%), 5 years (27.6%), and 6 years (30.5%). Compared to World Health Organization statistics data in 2012, they also showed that the risk of stunting in Indonesia is higher than the risk of stunting in the world (26.7%) (WHO, 2012).

Conditions in Indonesia compared to ASEAN countries mean the risk of stunting in Indonesia includes high prevalence and stagnant groups, just like Cambodia and Myanmar, while globally a decline was experienced. Prevalence of stunting in children decreased from 39.7% (1990) to 26.7% (2010) (Bloem *et al.*, 2013). This trend is expected to reach 21.8% or 142 million by 2020. The prevalence of stunting in Africa has stagnated since 1990 by about 40%, while in Asia it has seen a dramatic decline from 49% (1990) to 28% (2010) (De Onis, Blössner and Borghi, 2012). A decrease in the risk of stunting has also been reported in several countries in South America. In Brazil, it decreased from 37% (1974-1975) to 7% (2006-2007) a decrease of about 5.2% per year for 32 years. In Mexico, the prevalence of stunting also decreased from 27% (1988) to 16% (2006), with an absolute reduction of 11% or an average decrease of about 2.9% per year. Observational studies in sub-Saharan Africa showed a 43% reduction in the three years of scaling up nutrition (SUN) (UNICEF, 2013).

Stunting is a public health problem. It must be prevented and overcome because it is associated with an increased risk of pain and death, late motor development, and stunted mental growth (Purwandini and Kartasurya, 2013). Stunted children under five years tend to be more susceptible to infectious diseases, so they are at risk of decreased quality of learning in school and at risk of more frequent absences (Yunitasari, 2012), experiencing a decrease in academic performance which will further affect low-quality human resources (UNICEF, 2013). Stunting children under five years have a risk of decreased intellectual ability (Picaulyand Toy, 2013), low productivity (Anugraheni and Kartasurya, 2012), are more susceptible to non-communicable diseases (UNICEF, 2013), and increased risk of future degenerative diseases (Picauly and Toy, 2013). Stunting also increases the risk of obesity, as people with body stunting weight are ideally also low. Weight gain of a few kilograms alone can make the person's body mass index (BMI) rise beyond the normal limit (Hoffman et al., 2000; Timæus, 2012). Overweight and obesity conditions that continue for a long time will increase the risk of occurrence of degenerative diseases (Anugraheni and Kartasurya, 2012). A prospective cohort study in Jamaica, of stunted children under five years found it also affected psychological developmental disorders in adolescence, adolescents' higher levels of anxiety, depressive symptoms, and having low self-esteem compared to teens who were not stunted as children under five years. Children who experience growth disorders before the age of 2 years have bad emotions and behavior in late adolescence (Walker et al., 2007). Of the several impacts of stunting, it is necessary to have health interventions that focus on preventing and countering stunting starting

long before pregnancy, namely since a young girl is in elementary school age.

Adolescent Marriage and Risk of Stunting

The age of the first marriage is an indicator of the start of a woman's chances of getting pregnant and giving birth. The age of first marriage too young or too old will be at risk in pregnancy and childbirth. The younger the age of first marriage, the greater the risk that will be faced by both mother and child later (Suhartiningsih, Suariyani and Karmaya, 2018). For Indonesians, marriage is seen as a behavior that is universal in the sense that most of the population will hold a wedding. One of the characteristics of Indonesian marriage is young marriage, especially for women in rural or suburban areas (Ramli, Baderan andPongoliu, 2014). The results found that the risk of stunting prevalence was higher in children under five years in mothers who experienced adolescent marriage (42.4%) than in married mothers aged old enough (35%). These results indicate a risk from adolescent marriage to stunting in children under five years. The findings are in line with findings in India that children born to married women in their teens are at risk of having stunted children under five years (Raj, 2010).

Adolescent marriage faces adverse consequences for health as a result of giving birth at a young age, an increased risk of domestic violence, malnutrition, and sexual and reproductive health disorders. Those who married in adolescence experienced worse conditions compared to girls who delayed marriage for all social and economic indicators, including lower levels of education and higher poverty rates. This adverse impact will also be experienced by their children and continue in the next generation (Yunitasari, 2012). The large population of adolescents, which is about 64 million (27.6%) of the population of Indonesia, results in adolescents needing great attention in their construction.

The age of first marriage is the first time a couple has sex. The age of marriage for a woman means that it will extend the period of childbirth. A woman has a fertile period at the age of 15-49 years. Women who marry at the age of 30 years or older, tend to have fewer children than women who marry at a young age. The average age of first marriage in Indonesia according to some data shows that it is still quite low, which is under 20.8 years (BKKBN et al., 2017). The first marriage under 20 years of reproductive health can be said to be too young, mentally socially unprepared, and economically usually not established. The age of first marriage affects the risks in pregnancy and childbirth. The younger the age at the first marriage the greater the risk faced for the safety of the mother and child, because it is due to the immature uterus of a young woman to produce children or not mentally ready in the household (Ramli, Baderan and Pongoliu,2014).

The relationship between the age of first marriage and fertility forms a pattern of negative relationships. The younger the UKP, the longer the reproductive period or the more children are born. This affects the fertility rate of women and the population in general. The longer the reproductive period of the woman, the more likely the woman to give birth to many children will be greater. Other influences will increase the population growth rate of an area because fertility rates are also high (Ramli, Baderan and Pongoliu, 2014).

Adolescent marriage should be a concern for policymakers and program planners because Adolescent marriages are at high risk of marital failure. Successful marriages are often characterized by the readiness to assume responsibility. When deciding to marry in adolescence, they will be at risk of experiencing domestic violence, reproductive health problems, health problems, and psychological in children born (Fadlyana and Larasaty, 2016). Many found that among teenagers who married early and have had children the consequences of marriage are still left

to parents, for example: staying at the parents' house, eating and drinking still with parents and other needs are 100% still borne by parents (Ramli, Baderan and Pongoliu, 2014).

The limitation of this study lies in the use of secondary data, where the variables analyzed are limited to the variables available. However, in this study, the required variables are available in IFLS 2014 data. In this study, there may be selection bias in determining stunting toddlers, the possibility of mothers not wanting their children to be measured or their children not wanting to be measured because of illness or not being in place, or incorrect measurement results because toddlers are generally difficult to stay still at the time of measurement; this situation has an impact on the low incidence of stunting. However, this bias is estimated to be small because it occurs randomly between maternal marriage age groups and has been minimized by only selecting infants and toddlers who have complete body length and age data, and using standardized measuring instruments. The results of this study can be generalized to the eligible population because the participation rate reached 82.2% of the eligible population.

CONCLUSION

Adolescent pregnancy as a risk factor significantly increases the incidence of stunting. The age of the mother, when married, is related to the incidence of stunting after controlling the confounding variable. More optimal movements are needed to prevent adolescent marriage by involving all related sectors.

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