

SOCIOECONOMIC DISPARITIES AND THE RISK OF EARLY MARRIAGE AMONG WOMEN OF REPRODUCTIVE AGE IN INDONESIA

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ABSTRACT

Early marriage remains a significant global issue, particularly in low- and middle-income countries, including Indonesia. This study aimed to determine the prevalence of early marriage and identify associated factors among women of reproductive age in Indonesia. The study utilized secondary data from the 2020 Indonesia Performance Monitoring for Action (PMA) survey. Data were analyzed using STATA version 17, with a weighted sample of 7,820 participants. Weighted prevalence of early marriage was 23.26%. Early marriage was significantly associated with residing in rural areas (aOR: 1.96; 95% CI: 1.71–2.24), having primary or lower educational attainment (aOR: 3.21; 95% CI: 2.81–3.67), and having lower wealth index groups (aOR: 1.56; 95% CI: 1.25–1.94). Strengthening public health education through implementing health interventions such as counseling for youth, was suggested to reduce the prevalence of early marriage. The involvement of public health regulations, alongside stakeholders, parents and families as primary decision-makers, was necessary to enhance the effectiveness of the program.

Keywords: *Early marriage, socioeconomic, women*

BACKGROUND

Early marriage is social phenomenon still happens a lot especially in Indonesia. Based on United Nations Children's Fund (UNICEF), early marriage is a marriage either formal or informal to a child under 18 years old with adults or another children¹. Number of early marriages continuously

2018, the percentage of women 20 until 24 years old married when they were children was 21%. This number has decreased from ten years ago which reached 25%².

According to UNICEF data (2023) cited by Schoolmedia (2023), Indonesia ranked as the fourth highest country in the world for early marriage cases³, with

around 25.53 million cases of early marriage. In 2024, according to UNICEF data, the overall prevalence of early marriage in Indonesia is 5.90%. In East Java, it is 7.78%; in South Sulawesi, it is 8.09%; and in West Nusa Tenggara, it is 14.96%⁴. Although the number of early marriages is decreasing, this practice remains a problem not only in Indonesia but also globally.

Early marriage is a global concern because this practice is considered a violate children's fundamental rights, restrict their freedom and opportunities for development, and increase the risk of violence, exploitation, and abuse⁵. Early marriage is associated to higher risk of health complications for mother and their children. Some health issues caused by early marriage are poor attention to her own health, complications during delivery, pre-term delivery, low birth weight baby, still birth⁶, sexually transmitted diseases and HIV infection⁷. In the global context, the commitment to eliminate such practices is outlined in Sustainable Development Goals/SDGs goal number 5 target 5.3 which confirms to remove harmful practices to women and girls, including early marriage by 2030.

According to latest study, early marriage is estimated to cause economic losses to the country at least 1.7% of Gross Domestic Product (GDP), these estimated losses could be avoided if women who marry between the ages of 15 and 19 could delay marriage until the age of 20, during the period 2014 - 2050⁸.

There are factors related to early marriage practices, such as health, education, economic, culture, and social protection². Previous studies explained that factors associated with early marriage such

as, level of education of the head of household and women^{9,10}, household wealth index^{9,12,14}, mass media^{10,12}, family size^{10,12}, place of residence^{10,12}, occupation¹², economic status¹³, role of the parents of women¹³, and high community-level poverty¹⁵. Previous studies have discussed many determinants related to early marriage. There are a few studies focused on socioeconomic factors and used data from Performance Monitoring for Action (PMA) in Indonesia. Therefore, this study objectives are to analyze the prevalence of early marriage and associated socioeconomic factors in Indonesia.

METHOD

This study was a cross-sectional design using the Performance Monitoring for Action (PMA) 2020 data in Indonesia available at <https://www.pmadata.org/data/available-datasets>. The study included women of childbearing age aged 15 to 49 years old who were married. Unmarried samples and those with incomplete information excluded from this study. Finally, a weighted sample of 7,820 samples in the final analysis (Figure 1).

The dependent variable of this study was early marriage, defined as women of childbearing age who married under the age of 18 and coded as "1" = yes, otherwise coded as 0 = "no". Researchers calculated age at first marriage by subtracting the date of first cohabitation from the date of birth. Potential predictors in this study included socioeconomic factors, such as residence, women education, wealth quintile, number of life children.

The type of residence was categorized into 2 types, urban and rural. Women education determined by the

highest level of education women was categorized into uneducated, primary, secondary, and university. The wealth quintile variable is also classified into five categories: lowest, lower, middle, higher, and highest quintile. For the last variable, the number of life children in the family is categorized into no children, 1 – 2 children, and more than 2 children.

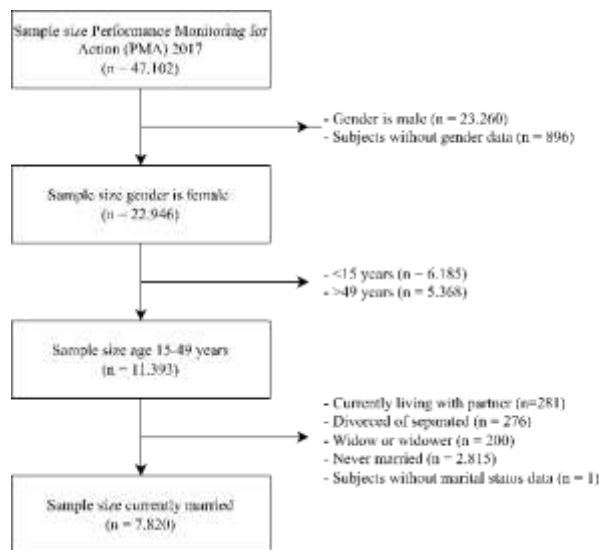


Figure 1. Flow Chart of the Participant Selection

Descriptive analysis in tables showing frequency distributions and percentages to summarize sample characteristics. To describe the distribution

of early marriage among individuals, a cross-tabulation analysis was used. The chi-square test was used to select variables that were statistically significant in association with early marriage. All variables with a p-value less than or equal to 0.05 are statistically significant. To examine the combined effects in analyzing factors associated with early marriage, the research used a binary logistic regression.

RESULTS AND DISCUSSION

Characteristics of Participants

Based on the results of data analysis, the weighted prevalence of early marriage was 23.26%. The participants spread across many regions, mostly located in Java, had 65.51%. Women reproductive age who was participants were 36 – 49 years old (50.33%), 26 – 35 years old (35.31%), and 15 – 25 years old (14.36%). More than half of the participants lived in urban (51.15%) and had secondary education (53.77%). The majority are in the higher quintile (24.22%) and highest quintile (22.85%). Women who participated had the largest number of family members with 4 – 6 members (64.22%) with the largest number of children with 1 – 2 children in the family (66.9%), see Table 1.

Table 1. Characteristics of women reproductive age

Variable	Weighted frequency	Percentage (%)
Age group in years		
15 – 25	1,105	14.36
26 – 35	2,778	35.31
36 – 49	3,937	50.33
Residence		
Urban	4,231	51.15
Rural	3,589	48.85
Region		
Sumatera	1,332	16.49
Jawa	3,975	65.51
Nusa Tenggara	383	4.33
Kalimantan	369	4.70

Variable	Weighted frequency	Percentage (%)
Sulawesi	1,633	7.30
Maluku/Papua	128	1.68
Education		
Uneducated	129	1.62
Primary	2,401	33.95
Secondary	4,104	53.77
University	903	10.66
Wealthquintile		
Lowest quintile	1,223	14.71
Lower quintile	1,385	18.39
Middle quintile	1,460	19.83
Higher quintile	1,947	24.22
Highest quintile	1,791	22.85
Number of household member		
1 – 3	2,004	26.83
4 - 6	4,940	64.22
>= 7	876	8.95
Number of life children		
No children	1,114	13.94
1 - 2 children	5,050	66.90
> 2 children	1,656	19.16

Proportion of Early marriage based Sociodemographics characteristic

Table 2 summarizes the proportion of sociodemographics characteristic based on early marriage status among women of reproductive age. The highest prevalence of early marriage was observed among women aged 15–25 years (32.73%), in the Kalimantan region (31.96%), and living in rural areas (33.12%). Moreover, almost half

of women who experienced early marriage are uneducated (48.68%). Nearly one-third (33.40%) women within lowest quintile and (32.04%) within lower quintile and (29.41%) women with more than two life children in the family. All the sociodemographics variable showed statistically significant associations with early marriage among women reproductive age.

Table 2. Proportion of early marriage based socoidemographics characteristic among women of reproductive age

Variable	Early marriage				p-value
	Yes		No		
	n	%	n	%	
Age group in years					<0.001
15 – 25	368	32.73	756	67.27	
26 – 35	542	19.63	2,219	80.37	
36 – 49	979	24.86	2,958	75.14	
Residence					<0.001
Urban	623	15.57	3,377	84.43	
Rural	1,266	33.12	2,556	66.88	
Region					0.0236

Variable	Early marriage				p-value
	Yes		No		
	n	%	n	%	
Sumatera	312	24.20	977	75.80	<0.001
Jawa	1,209	23.60	3,915	76.40	
Nusa Tenggara	84	24.72	255	75.28	
Kalimantan	117	31.96	250	68.04	
Sulawesi	136	23.78	435	76.22	
Maluku/Papua	30	23.09	101	76.91	
Education					
Uneducated	559	48.68	63	51.32	<0.001
Primary	1,067	41.74	1,489	58.26	
Secondary	746	18.44	3,300	81.56	
University	16	2.00	786	98.00	
Wealthquintile					
Lowest quintile	384	33.40	765	66.60	<0.001
Lower quintile	460	32.04	976	67.96	
Middle quintile	419	27.09	1,129	72.91	
Higher quintile	395	10.90	1,495	79.10	
Highest quintile	228	12.78	1,556	87.22	
Number of household member					
1 – 3	526	25.06	1,573	74.94	0.3906
4 - 6	1,185	23.59	3,838	76.41	
>= 7	523	74.64	523	74.64	
Number of Children					
No children	167	15.33	923	84.67	<0.001
≤ 2 children	1,281	24.47	3,952	75.53	
> 2 children	441	29.41	1,058	70.59	

Prevalence of early marriage by socioeconomic disparities

Prevalence of early marriage is highest among women with lower and lowest wealth quintiles, and decreases as wealth quintiles increase. Based on age group, the highest percentage is in the lowest group in the 15 - 25 years age group (46.8%), 26 - 35 years (26.8%), and 36 - 49 years (33.1%). Meanwhile, for residence the highest percentage is in the lower quintile, in urban areas it was 22.1% and in rural areas it was 37.0%. Based on region, the highest prevalence of early marriage is in Kalimantan with 40.7% in the lowest quintile, Nusa Tenggara (40.4%) and Maluku/Papua (38.3%) in the middle

quintile. At the level of education which is uneducated, percentage of early marriage high is the highest quintile had 77.6%. Moreover women with primary education have percentage of early marriage high is in the higher quintile had 44.4%. Based on the number of household members, the highest percentage was 1 - 3 members (36.3%) and 4 - 6 members (33.6%) in the lowest quintile and more than equal to 7 members (34.9%) in the lower quintile. Women who have a number of life children had a high prevalence in the lowest quintile, with no children (32.3%); less than equal to 2 children (32.8%); and more than 2 children (35.9%).

Table 3. Prevalence of early marriage by socioeconomic disparities among women reproductive age

Variable	Quantile 1 Lowest	Quantile 2 Lower	Quantile 3 Middle	Quantile 4 Higher	Quantile 5 Highest	Total
Age group in years						
15 – 25	46.8 (39.4 - 54.3)	43.0 (36.4 - 49.8)	31.4 (25.2 - 38.5)	19.4 (14.7 - 25.3)	19.0 (12.8 - 27.3)	32.7 (29.7 - 35.9)
26 – 35	26.8 (22.4 - 31.7)	26.1 (21.9 - 30.0)	22.2 (18.7 - 26.1)	18.0 (14.9 - 21.5)	10.6 (8.5 - 13.3)	19.6 (18.0 - 21.3)
36 – 49	33.1 (29.2 - 37.3)	31.7 (28.1 - 35.5)	29.3 (25.8 - 33.0)	23.4 (20.6 - 26.5)	13.3 (11.1 - 15.8)	24.9 (23.4 - 26.4)
Residence						
Urban	20.4 (15.9 - 16.0)	22.1 (18.5 - 26.3)	20.2 (17.0 - 23.7)	16.4 (14.1 - 18.9)	9.7 (8.1 - 11.5)	15.6 (14.4 - 16.9)
Rural	36.1 (33.0 - 39.4)	37.0 (33.8 - 40.3)	33.2 (29.9 - 36.8)	28.2 (24.8 - 31.9)	24.6 (20.4 - 29.4)	33.1 (31.5 - 34.7)
Region						
Sumatera	27.0 (21.3 - 33.4)	28.4 (23.1 - 34.3)	25.4 (21.1 - 30.3)	21.1 (17.0 - 26.0)	14.0 (8.9 - 21.3)	24.2 (21.9 - 26.7)
Jawa	37.7 (33.3 - 42.4)	35.3 (31.8 - 38.9)	27.5 (24.4 - 30.8)	20.4 (18.0 - 23.0)	12.6 (10.9 - 14.5)	23.6 (22.3 - 24.9)
Nusa Tenggara	23.3 (16.5 - 31.8)	23.5 (15.9 - 33.2)	40.4 (28.2 - 53.9)	23.1 (12.9 - 38.0)	11.0 (5.5 - 20.8)	24.7 (20.5 - 29.4)
Kalimantan	40.7 (31.9 - 50.1)	29.9 (20.5 - 41.2)	27.9 (17.2 - 41.9)	25.9 (16.3 - 38.6)	22.2 (12.4 - 36.5)	32.0 (27.2 - 37.1)
Sulawesi	30.9 (24.7 - 37.9)	27.1 (20.7 - 34.7)	19.9 (14.8 - 26.1)	23.6 (18.2 - 29.9)	11.1 (6.8 - 17.8)	23.8 (21.0 - 26.8)
Maluku / Papua	21.9 (13.1 - 34.2)	30.8 (15.8 - 51.4)	38.3 (11.2 - 75.3)	7.9 (1.0 - 41.8)	0	23.1 (16.1 - 31.9)
Education						
Uneducated	37.7 (24.7 - 52.7)	61.4 (44.7 - 75.8)	47.8 (25.5 - 71.0)	40.6 (15.4 - 71.9)	77.6 (25.3 - 97.3)	48.7 (39.1 - 58.3)
Primary	40.4 (36.2 - 44.7)	39.6 (35.4 - 43.8)	43.7 (39.4 - 48.0)	44.4 (39.4 - 49.6)	40.6 (33.9 - 47.7)	41.7 (39.6 - 43.9)
Secondary	28.0 (23.9 - 32.6)	27.0 (23.5 - 30.8)	18.8 (15.9 - 22.0)	15.1 (13.0 - 17.5)	12.4 (10.4 - 14.7)	18.4 (17.2 - 19.8)
University	4.9 (1.5 - 15.3)	2.7 (0.4 - 16.1)	4.0 (1.7 - 9.6)	1.7 (0.7 - 4.5)	1.3 (0.5 - 3.2)	2.0 (1.2 - 3.3)
Number of household member						
1 – 3	36.3 (31.0 - 41.9)	34.7 (30.0 - 40.0)	26.3 (21.9 - 31.2)	19.4 (15.9 - 23.4)	11.9 (8.8 - 15.8)	25.0 (23.1 - 27.2)
4 - 6	33.6 (30.0 - 37.3)	30.4 (27.2 - 33.8)	27.9 (25.0 - 31.1)	20.7 (18.2 - 23.3)	12.3 (10.4 - 14.4)	23.6 (22.3 - 25.0)
>= 7	24.0 (17.2 - 32.4)	34.9 (26.0 - 45.0)	23.6 (16.5 - 32.4)	27.8 (20.9 - 35.9)	18.8 (13.1 - 26.2)	25.4 (22.0 - 29.1)
Number of life children						
No children	32.3 (25.3 - 40.1)	24.8 (18.4 - 32.6)	16.4 (11.8 - 22.3)	6.5 (3.9 - 10.4)	5.3 (2.8 - 9.7)	15.3 (13.1 - 17.9)
≤ 2 children	32.8 (29.2 - 36.5)	32.5 (29.5 - 35.7)	28.1 (25.3 - 31.1)	21.4 (19.0 - 24.0)	12.9 (11.1 - 15.1)	24.5 (23.2 - 25.7)
> 2 children	35.9 (30.2 - 42.1)	35.1 (29.1 - 41.7)	31.8 (25.9 - 38.3)	30.3 (25.2 - 35.9)	17.4 (13.4 - 22.2)	29.4 (26.9 - 32.0)

Factor associated with early marriage

The logistic regression results in Table 3 shows that all independent variable are age group in years, residence, education, wealth quintile, and number of life children in the family significantly associated with the probability of early marriage. Women aged 15 - 25 (cOR: 1.47; 95% CI: 1.25 – 1.73) years are more likely to marry early than women aged 36 - 49 years. Participants living in rural areas had a 2.69 times increased risk (95% CI: 2.38 – 3.03) of early marriage than participant living in urban areas. Similarly, women who have a level of education primary or lower (cOR: 3.89; 95% CI: 3.44 – 4.40) more probably have early marriage than participant have higher education.

There is a significant association between wealth quintile with the early marriage, with the probability of early marriage increasing as the wealth quintile decreases. Participants with lowest quintile have the probability 3.42 times (95% CI: 2.80 – 4.19) and lower quintile 3.22 times increased risk of early marriage than participant with highest quintile. Consistent with the wealth quintile results, number of children in the family associated with early marriage. Participant who has less than or equal to two children (cOR: 1.79; 95% CI: 1.47 – 2.18) and more than two children (cOR: 2.30; 95% CI: 1.84 – 2.87) have a higher probability of early marriage than participant without children.

Table 4. Factors associated with early marriage among women of reproductive age by binary logistic regression analysis

Variable	Unadjusted				Adjusted			
	OR	95% CI		<i>p-value</i>	OR	95% CI		<i>p-value</i>
		Lower	Upper			Lower	Upper	
Age group in years				<0.001				
15 – 25	1.47	1.25	1.73	<0.001				
26 – 35	0.74	0.65	0.84	<0.001				
36 – 49	Ref.							
Residence				<0.001				
Urban	Ref.				Ref.			
Rural	2.69	2.38	3.03	<0.001	1.96	1.71	2.24	<0.001
Region				0.106				
Jawa	Ref.							
Sumatera	1.03	0.89	1.20	0.661				
Sulawesi	1.01	0.85	1.21	0.910				
Others	1.24	1.04	1.47	0.014				
Education				<0.001				
Primary or Lower	3.89	3.44	4.40	<0.001	3.21	2.81	3.67	<0.001
Higher	Ref.				Ref.			
Wealthquintile				<0.001				
Lowest quintile	3.42	2.79	4.19	<0.001	1.37	1.08	1.73	0.008
Lower quintile	3.22	2.64	3.92	<0.001	1.56	1.25	1.94	<0.001
Middle quintile	2.54	2.08	3.10	<0.001	1.47	1.19	1.82	<0.001
Higher quintile	1.80	1.48	2.20	<0.001	1.33	1.08	1.64	0.006
Highest quintile	Ref.				Ref.			

Variable	Unadjusted				Adjusted			
	OR	95% CI		<i>p-value</i>	OR	95% CI		<i>p-value</i>
		Lower	Upper			Lower	Upper	
Number of household member				0.399				
1 – 3	Ref.							
4 - 6	0.92	0.81	1.06	0.245				
>= 7	1.02	0.82	1.26	0.884				
Number of life children				<0.001				
No children	Ref.							
≤ 2 children	1.79	1.47	2.18	<0.001				
> 2 children	2.30	1.84	2.87	<0.001				

The multivariable logistic regression identified factors significantly associated with early marriage, were residence, education, and wealth quintile. Variables that are not significant in binary logistic regression analysis will be excluded from multivariate logistic regression analysis, such as age group in years, region, number of household members, and number of life children, see Table 4. Participants living in rural areas (aOR: 1.96; 95% CI: 1.71 – 2.24) are more likely to marry early than participants living in urban areas. Those who had primary or lower education had a probability early marriage of 3.21 times (95% CI: 2.81 - 3.67) when compared to higher education. Similarly, women from a lower quintile of 1.56 times (95% CI: 1.25 – 1.94) and middle quintile of 1.47 times (95% CI: 1.19 – 1.82) have a high probability of early marriage, compared to participant with highest quintile.

Socioeconomic Disparities and The Risk of Early Marriage

Based on the analysis shown in Table 3, the percentage of early marriages changes with age. Whereas now, the younger generation has a higher percentage

of early marriage compared to the older generation. This is based on motivations that have changed with passage time. In the past, this phenomenon was driven by tradition, cultural norms, or religious figures in the local community. Nowadays, this phenomenon is driven by personal choice due to the impact of digital applications¹⁶.

Furthermore, it can be seen that women who have no education or primary education and are from families in the highest quintile have a percentage of early marriage. This is in line with the culture of early marriage in Sanggalagi District, Tana Toraja, South Sulawesi Province. Early marriage is conducted by marrying girls who have already started menstruating and boys who are already working, regardless of their level of education, to maintain the family's social status in the community. This marriage has various levels, one of which is Tana' Bulaan, which is for the nobility¹⁷. This could indicate that early marriages are conducted without considering the education and economic status of both partners.

Table 3 shows that the percentage of early marriage is higher in families with

more than two children, especially if they are in the lowest wealth index. This is because if a family has a large number of members, it will expend the parents' resources. Therefore, to improve their family's economic situation, they tend to marry off their daughters to obtain money from their daughters' dowries¹⁸.

This study identified socioeconomic factors that contribute to early marriage in Indonesia. The socioeconomic factors analyzed are residence, education, wealth quintile, and number of life children, see Table 4. In this study, the prevalence of early marriage among women lived in rural had a 2.69 times increased risk of early marriage than participant living in urban areas. Consistent with previous studies, mentioned that women living in rural areas probability of 1.71 times⁸ and 1.487 times [15] experiencing Female Early marriage or early marriage. Not only in Indonesia, this study is also in line with studies conducted in sub-Saharan African¹⁴, Amhara Regional State¹⁹, and Iraq⁹.

In rural areas, women not totally aware of the impact early marriage in health, education, and the economy. This is because of the limited access to information. Woman who lived in rural areas will have poorer access to information about the dangers and risks of early marriage, than those who live in urban areas⁸. Moreover, urban populations are more easily exposed to women's empowerment programs and interventions and the high number of highly educated women. This shapes their thinking and motivation about the education of girls rather than marrying off girls²⁰.

Consistent with previous studies^{8,14}, the study explains that early marriage associated with the level of education,

especially education for women. Teenagers who marry at an early age generally have a lower education, such as elementary school and junior high school. In Indonesia there are still many parents who believe that girls do not need to get a high level of education, because she will only manage the household and her living expenses will be covered by her husband⁷.

Education also has an important part in the decision making. Young women who have received a poor education may be limited in obtaining knowledge related to sexual and reproductive health, including the consequences of early marriage. Therefore, young women who received less education have a tendency to marry earlier.

In this study, it shows that the higher the wealth quintile among young women, the lower the probability of them getting married early. Previous studies have explained that most countries in sub-Saharan Africa and some regions in Asia, especially in poor families, live by depending on the dowry or bride price for their daily needs. Poor families with limited access to credit markets, may be pressured to "sell" their daughters into marriage before they reach adulthood, to reduce the financial burden associated with parenting²¹. From that incident, the early marriage is considered a solution to poverty and can make the practice of early marriage worse.

This is consistent with previous studies⁹ which explains that women from lower and middle wealth index are more vulnerable to early marriage compared to women from high wealth index such as Bangladesh and Ghana. Families with a high wealth index make education a priority, because they recognize the long-term benefits of improving women's

employment opportunities and income in the future²². In Ghana, women from large families with 5 or more children²² are more at-risk early marriage than girls from smaller families. This may be caused by a decline in parental control and guidance of children in large families, thereby weakening parental control and making teenagers vulnerable to making decisions to marry at a young age.

Given these findings, it is crucial to highlight government programs in Indonesia that focus on reducing early marriage cases. These programs include the Children's Forum of the Ministry of Women's Empowerment and Child Protection, the Development of Youth Information and Counseling Centers (PIK), and the Planned Generation (GenRE) program of the National Population and Family Planning Agency (BKKBN)²³.

Not only that, a number of Institutions such as the National Population and Family Planning Agency (BKKBN), the Ministry of Education and Culture, the Ministry of Health, and the Ministry of Women's Empowerment and Child Protection (KPPPA) have created a program called PUSPAGA (Family Learning Center). Where this program aims to provide education that reaches communities at the village level²³. The role of public health workers in this program is important as agents in promoting and educating about family health, specifically regarding reproductive health and the negative impacts of early marriage. During implementation, one of the challenges of this program was the lack of parental participation because the program was voluntary. This challenge needs to be addressed by reinforcing strategies to increase parental involvement so that the

program is more effective in preventing early marriage.

CONCLUSION

The study concludes that a significant number of childbearing age in Indonesia still marry at an early marriage. Based on studies that have been conducted, residence, education, wealth quintile, and number of life children in family are significantly associated with early marriage.

SUGGESTIONS

This study suggests that in implementing early marriage prevention programs a comprehensive and integrates strategy is needed, one of which is through the involvement of parents or families as the main decision makers. Public health workers are responsible for educating parents and families about adolescent reproductive health and physical, mental, and social preparation before marriage.

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AUTHORS' CONTRIBUTIONS

WR and SAS designed the study and managed the dataset and performed the statistical analyses. WR prepared the initial

manuscript draft and added feedback from all authors.

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