



(RESEARCH ARTICLE)



The socio-economic factors influencing adolescent childbirth in Indonesia

Eulis Ardiyanti Sari¹ and Sri Ratna Dwiningsih^{2,*}

¹ *Midwifery Study Program, Faculty of Medicine, Universitas Airlangga, Surabaya, Indonesia.*

² *Department of Obstetrics and Gynecology, Faculty of Medicine, Universitas Airlangga, Dr. Soetomo Hospital, Surabaya, Indonesia.*

World Journal of Advanced Research and Reviews, 2024, 21(01), 266–271

Publication history: Received on 22 November 2023; revised on 30 December 2023; accepted on 01 January 2024

Article DOI: <https://doi.org/10.30574/wjarr.2024.21.1.2672>

Abstract

Adolescent childbirth (ages 15-19) is a global issue that can result in morbidity and mortality among adolescents. The rate of adolescent childbirth is of particular concern to the Indonesian government as it has not yet reached the desired targets. The aim of this research is to analyze the socio-economic factors influencing adolescent childbirth (ages 15-19) in Indonesia based on data from the 2017 Indonesian Demographic and Health Survey (IDHS). This study utilizes secondary data from the 2017 Indonesian Demographic and Health Survey, with a sample size of 7,930 adolescents. Data were analyzed using univariate, bivariate, and multivariate descriptive statistical methods. Adolescent childbirth in Indonesia among ages 15-19 is observed in 416 adolescents (5.2%). Based on multivariate analysis, it was found that variables significantly associated with adolescent childbirth are educational level and economic status. Adolescents with low education are 27 times more likely to experience childbirth (aOR: 27.756; 95% CI: 12.007 - 64.163) compared to those with higher education. Furthermore, adolescents with the lowest economic status have a 2 times higher risk (aOR: 2.644; 95% CI: 2.014 - 3.470) of experiencing adolescent childbirth compared to those with the highest economic status. Adolescent childbirth is a health issue that warrants attention in Indonesia. Enhancing education, empowerment, awareness, and support for adolescent girls, along with policy implementation, is crucial for reducing the adolescent childbirth rate.

Keywords: Factors; Childbirth; Adolescents; 15-19 years; Indonesia.

1. Introduction

Adolescent childbirth refers to individuals aged 15-19 who have either given birth or are currently pregnant with their first child [1]. According to the 2017 Indonesian Demographic and Health Survey (IDHS), the rate of adolescent childbirth in Indonesia is 7%. A survey conducted by the National Population and Family Planning Board (BKKBN) in 2018 reported an adolescent childbirth rate of 36 per 1,000 live births [1]. This figure is significantly higher than the government's target outlined in the National Medium-Term Development Plan 2020-2024, which aims for a rate of 18 per 1,000 live births [2].

The adolescent childbirth rate is a critical global issue due to its association with the morbidity and mortality of adolescents. Individuals aged 15-19 are not physically and mentally prepared for pregnancy, childbirth, child-rearing, and parenthood [3]. In some countries, adolescent childbirth is the fourth leading cause of death in Burundi [4] and the second leading cause globally [5]. Meanwhile, in developing countries, adolescent childbirth among those aged 15-19 is of particular concern as it contributes to 99% of maternal and infant deaths [4]. Considering these factors, researchers are interested in examining the socio-economic factors influencing adolescent childbirth in Indonesia based on the 2017 Indonesian Demographic and Health Survey (IDHS) data.

* Corresponding author: Sri Ratna Dwiningsih.

This research utilizes secondary data from the 2017 Indonesian Demographic and Health Survey (IDHS). The aim of this study is to ascertain the relationship between socio-economic factors and adolescent childbirth (ages 15-19) in Indonesia based on the 2017 IDHS data. Additionally, the research investigates the dominant factors contributing to adolescent childbirth in Indonesia. The results of the analysis are expected to provide information regarding the factors influencing the fertility of adolescents aged 15-19 in Indonesia and the dominant factors at play. This information can serve as input for the government in planning future programs, particularly those related to population control, maternal and child mortality.

2. Material and methods

The analytical design employed in this research is cross-sectional, utilizing a quantitative approach. The data used are secondary data from the 2017 Indonesian Demographic and Health Survey (IDHS), and data analysis is conducted using SPSS version 29.0. The population studied consists of women of childbearing age (15-49 years), and the research sample comprises adolescent females aged 15-19 years, based on the 2017 IDHS data. The sample size for this study is 7,930. The independent variables in this research are socio-economic factors, while the dependent variable is adolescent childbirth (ages 15-19). Descriptive statistical analysis is conducted in three stages: univariate, bivariate, and multivariate. Univariate analysis is performed to determine the frequency distribution of all variables, followed by bivariate analysis to examine the relationship between each variable. If the p-value is <0.05 , it is considered significant, and if the bivariate test result has a p-value <0.2 , it is included in the multivariate modeling. Finally, multivariate analysis is conducted to identify the most dominant variables contributing to adolescent childbirth. The method used for multivariate analysis, specifically multiple linear regression, is forward likelihood ratio.

3. Results and Discussion

3.1. Frequency Distribution of Socio-economic Factors Influencing Adolescent Fertility

The following table illustrates the frequency distribution of the dependent variable (adolescent childbirth) and independent variables (educational level, economic status, employment status, and type of occupation).

Table 1 Frequency Distribution of the Dependent Variable

Dependent Variable	n	%
Adolescent childbirth		
No	7.514	94.8
Yes	416	5.2

Table 1 indicates the occurrence of adolescent childbirth among those aged 15-19 in Indonesia. A total of 0.3% of adolescents, or 24 individuals, have given birth twice, and 4.9%, equivalent to 392 adolescents, have experienced childbirth at least once. Furthermore, Table 2 illustrates the distribution of independent variables, as shown in the table below.

Table 2 Distribution of Independent Variables

Independent Variables	n	%
Education level		
Low	466	5.9
Middle	6,620	83.5
High	844	10.6
Economic status		
Lowest	3,455	43.6
Middle	1,478	18.6

<i>Continue</i>		
Highest	2,997	37.8
Employment status		
No	5,677	71.6
Yes	2,253	28.4
Type of occupation		
Unemployment	5,677	71.6
Professional/technical/managerial	109	1.4
Clerical	95	1.2
Sales	963	12.1
Agriculture	376	4.7
Industrial worker	270	3.4
Workforce	440	5.5
Total	7,930	100

Based on Table 2, it can be observed that the educational level of adolescents is predominantly represented by those who have not completed middle school, totaling 5,182 adolescents (65.3%). In terms of economic status, adolescents with the lowest economic status are more dominant among those aged 15-19, comprising 1,864 adolescents (23.5%). Regarding employment status in the last 12 months, the majority of adolescents are not currently employed (71.6%), and the most common type of occupation among adolescents is sales entrepreneurship, with 963 adolescents (12.1%).

After obtaining an overview of the frequency of each variable, the next step is to analyze the relationship between the dependent variable (adolescent childbirth) and independent variables (educational level, economic status, employment status, and type of occupation). Bivariate analysis between the dependent and independent variables is presented in the following table:

Table 3 Bivariate Analysis Test of Socio-economic Factors Influencing Adolescent Childbirth

Independent variable	Adolescent Childbirth				Total		p-value
	Yes		No				
	n	%	n	%	n	%	
Education level							<0.001
Low	106	25.5	360	4.8	466	5.9	
Middle	304	73.1	6,316	84.1	6,620	83.5	
High	6	1.4	838	11.2	844	10.6	
Economic status							<0.001
Lowest	274	65.9	3,181	42.3	3,455	43.6	
Middle	71	17.1	1,407	18.7	1,478	18.6	
Highest	71	17.1	2,926	38.9	2,997	37.8	
Employment status							0.712
No	294	70.7	5,383	71.6	5,677	71.6	
Yes	122	29.3	2,131	28.4	2,253	28.4	

<i>Continue</i> Type of occupation							
Unemployment	294	70.7	5,383	71.6	5,677	71.6	0.177
Professional/technical/managerial	4	1.0	105	1.4	109	1.4	
Clerical	3	0.7	92	1.2	95	1.2	
Sales	47	11.3	916	12.2	963	12.1	
Agriculture	31	7.5	345	4.6	376	4.7	
Industrial worker	16	3.8	254	3.4	270	3.4	
Workforce	21	5.0	419	5.6	440	5.5	

Based on Table 3, it can be observed that the variable of educational level has a significant relationship with adolescent childbirth with $p < 0.001$. Furthermore, the variable of economic status also shows a significant relationship with adolescent childbirth, with a $p < 0.001$. However, the variables of employment status and type of occupation do not indicate a significant relationship because the p -value is > 0.05 . A variable is considered to have a significant relationship if the p -value is < 0.05 . Therefore, it can be concluded that, based on the chi-square test, the variables with a p -value < 0.05 and considered to have a relationship with adolescent childbirth are educational level and economic status.

The final stage involves multivariate analysis using multiple logistic regression with the forward likelihood ratio (Forward LR) method. Variables with a p -value < 0.2 are included in the modeling at this stage. Thus, the variables tested are educational level, economic status, and type of occupation. The results of the multivariate analysis can be seen in the following table:

Table 4 Results of Multivariate Analysis of Socio-economic Factors Associated with Adolescent Childbirth

Variable	B	p-value	aOR	95% C.I	
				Lower	Upper
Education level					
Low	3.323	< 0.001	27.756	12.007	64.163
Middle	1.691	< 0.001	5.427	2.405	12.244
High	1	1	1	1	1
Economic status					
Lowest	0.972	< 0.001	2.644	2.014	3.470
Middle	0.630	< 0.001	1.878	1.339	2.634
Highest	1	1	1	1	1

Based on Table 4, it can be concluded that educational level and economic status are the most influential variables in adolescent childbirth, with a $p < 0.001$. Adolescents with low educational levels are 27 times more at risk (aOR: 27.756; 95% CI: 12.007 – 64.163) of experiencing adolescent childbirth compared to those with higher educational levels. Regarding economic status, adolescents with the lowest economic status have a 2 times higher risk (aOR: 2.644; 95% CI: 2.014 – 3.470) of experiencing adolescent childbirth compared to those with the highest economic status.

3.2. The Relationship Between Educational Level and Adolescent Childbirth

Based on the results of the multivariate analysis, the educational level's relationship with adolescent childbirth shows significant results. Adolescents with low educational levels are at a 27 times higher risk (aOR: 27.756; 95% CI: 12.007 – 64.163) of experiencing adolescent childbirth compared to those with higher educational levels. This implies that adolescents with lower educational levels are more inclined to experience adolescent childbirth compared to those with higher educational levels.

The findings of this study are supported by research conducted on adolescents in Gambia, which indicates that adolescents with moderate and high levels of education are less likely to experience adolescent fertility compared to those without education [6]. This study aligns with research on adolescents in Burundi, demonstrating that adolescents without education are four times more at risk (aOR = 4.18, 95% CI: 1.88 - 9.30, $p < 0.001$), and those with only primary education (SD) are twice as likely (aOR = 2.58, 95% CI: 1.54 - 4.25, $p < 0.001$) to experience adolescent fertility compared to adolescents with secondary or higher education. The research explains that adolescents without education or who drop out of school lack access to comprehensive sexual education. Furthermore, many adolescent girls are compelled to leave school due to economic conditions [4]. Additionally, research that supports the researcher's findings is a study conducted on adolescents in Zambia, revealing that adolescents with secondary education reduce the risk of adolescent fertility compared to those without education (aOR: 0.4; 95% CI: 0.2 - 0.7, $p = 0.006$). Adolescents with higher education have a strong association in lowering fertility. Furthermore, to reduce the adolescent fertility rate, literacy among adolescents is highly recommended, particularly for those with higher education, which ultimately is also associated with economic status. This is an important factor in empowering adolescents for skill enhancement and development, improving decision-making abilities, and gaining control over family income [7].

Adolescents with higher education tend to have better knowledge, attitudes, and behaviors regarding health and lifestyle compared to those without education. Adolescents can acquire information related to health and lifestyle through school, the internet, mass media, and books [8]. With good knowledge, adolescents can prevent unwanted pregnancies. Moreover, adolescents with higher education are more likely to postpone marriage compared to those with lower education, eventually leading to the postponement of pregnancy and childbirth in adolescent girls. Additionally, adolescent females with higher education tend to encourage their peers to have better economic prospects and job opportunities in the future. Therefore, equal access and opportunities for education are crucial for adolescents. The government has also made efforts to ensure that all segments of society have access to quality education, including through financial aid.

3.3. The Relationship Between Economic Status and Adolescent Childbirth

The results of the analysis of economic status and adolescent fertility in the secondary data analysis of the 2017 IDHS show significant results. Bivariate analysis on the economic status variable indicates that adolescents from the lowest economic stratum are 2 times more at risk (aOR: 2.644; 95% CI: 2.014-3.470) of experiencing adolescent fertility compared to adolescents from the highest economic stratum. This implies that adolescents from the lowest economic stratum are more likely to experience adolescent fertility than those from the highest economic stratum. This finding is supported by a study conducted by Terefe [6] on adolescents in Gambia, indicating that adolescents classified in the highest economic stratum are less likely to experience fertility compared to those classified in the lowest economic stratum [6].

A study that further strengthens the researcher's findings is the research on adolescents in Zambia conducted by Munakampe [7], which shows that adolescents from the lowest economic stratum are 1.7 times more likely to experience fertility compared to adolescents from the highest economic stratum (aOR=1.7; 95% CI: 1.3-2.4). The higher the economic status of adolescents, the lower the risk of experiencing fertility, especially in urban adolescents. The research also explains that urban adolescents in the lowest economic stratum are more at risk of experiencing fertility compared to those in rural areas. Furthermore, the study points out that adolescents with the lowest economic status have reduced access to information about contraception and services for adolescents [9].

In this study, it was found that adolescent fertility is also prevalent among those with the lowest economic status compared to those with the highest economic status. It can be concluded that adolescents with the lowest economic status in Indonesia are more likely to become pregnant and give birth at an earlier age. Thus, the higher an adolescent's economic status, the higher the education pursued, and the smaller the chance of early marriage. A high economic status will enable adolescents to pursue higher education, and vice versa.

Although poverty and adolescent fertility may seem like an endless cycle, the researcher found it important to improve the socio-economic status of adolescent-headed families in general. Furthermore, for communities in the lowest economic environments to reduce the adolescent birth rate, it is crucial to enhance adolescents' knowledge of sexual and reproductive health. Through various government-provided programs and self-empowerment initiatives, it is hoped that the overall economic status of families, and specifically adolescents, can be improved.

4. Conclusion

The socio-economic factors associated with adolescent childbirth are educational level and economic status. Adolescent childbirth is a health issue that draws attention in Indonesia. Enhancing education, empowerment, awareness, and supporting adolescent girls, along with effective policy implementation, are crucial for reducing the adolescent birth rate.

Compliance with ethical standards

Acknowledgement

Indonesian Demographic and Health Survey (IDHS) 2017 provided by Demographic and Health Survey (DHS).

Disclosure of conflict of interest

No conflicts of interest to be disclosed.

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