Proportion and Causes of Adolescent Fertility in South Sulawesi Province: A Population-Based Research

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Abstract

Background: Adolescent fertility has a negative impact on their generation and the generations they are born with. This incident was motivated by multi factors, but in South Sulawesi Province it has not been studied extensively. This research aims to study the factors that influence adolescent fertility in South Sulawesi Province.
Method: Population-based research that used secondary data from the 2017 Indonesian Demographic and Health Survey (IDHS) with a cross sectional study approach. The 2017 IDHS sample is the result of a multi-stage stratified design. In this study, we filtered adolescents aged 15-19 years who lived in South Sulawesi Province resulting in 336 people. Used multivariate logistic regression with the aim of controlling for potential cofounder variables
Results: 8.4% proportion of adolescent fertility. Aged 18-19 years the largest determinant of adolescent fertility (aOR=8.6; 95%CI 2.82 - 26.49), respondents never used the internet with aOR: 3.8 (95% CI 0.00 – 0.01), low education level with aOR: 6.8 (95% CI 0.79 – 59.39), being no longer in school at the time of the survey with aOR: 3.5 (95%CI 0.42 – 30.07) of experiencing teenage fertility. Fertility variables based on education level and schooling status did not show statistically significant differences, but were retained in multivariate analysis for substantial consideration.
Conclusion: Aged 18-19 years, low education level, not currently in school at the time of the survey, and respondents never used the internet were determinants of adolescent fertility in South Sulawesi Province.

Keywords: Adolescent Fertility; education level; internet user;

INTRODUCTION

Developing countries record 20,000 adolescents <18 years of age who have given birth. This number is equivalent to 7.3 million births per year. This does not take into account the number of teenage pregnancies, which will be much higher. The adolescent fertility rate is 30.2 births per 1000 women aged 15-19 years [1]

In 2019, adolescents aged 15–19 years in low- and middle-income countries (LMICs) experienced an estimated 21 million pregnancies annually, of which approximately 50% were unwanted and resulted in approximately 12 million births[2]. As many as 55% of unintended pregnancies in adolescent girls aged 15–19 years end in abortion, which is often unsafe in developing and developing countries[3]

The impact of teenage pregnancy, including teenage pregnancy, can have a significant social and economic impact, both on individuals and society as a whole. Teenagers who become pregnant may face more difficult educational challenges, employment opportunities, and economic conditions. Pregnancy at a young age can have an impact on the physical and mental health of adolescents [4]. Health risks, for both mother and baby, may increase in teenage pregnancy. Pregnancy at teenage age can hinder the development of a teenager's education and career. This can have long-term consequences for their chances of success in terms of education and employment [5]

Preventing teenage pregnancies and pregnancy-related mortality and morbidity is

fundamental to achieving positive health outcomes throughout life and is essential to achieving the Sustainable Development Goals (SDGs) related to maternal and newborn health [6]. Various micro- and macro-level factors such as self-status, behavior, family, friends, school, community and macro-level socio-economic, and political factors are related to adolescent pregnancy. Each factor is directly related to teenage pregnancy. These factors also interact with each other and indirectly affect pregnancy [7]

The study discusses the importance of household socioeconomic factors that link to teenage pregnancy in Rwanda. That financial, social and educational level of empowerment of parents, and households in which parents agree harmoniously on boundarysetting, child discipline and anti-pregnancy messaging, contribute to lowering the cases of teenage pregnancy. Social and economic support to teen girls which include parental supervision, guidance, and financia care are essential aspects to consider in order to reduce teenage pregnancy rates [8]

The province of South Sulawesi shows that the proportion of women aged 20-24 years who were married or living together before the age of 18 was 9.33% [9]. Social norms have an influence on adolescent sexual behavior which can limit the space for adolescents regarding sex [10]. This research aims to study the factors that influence adolescent fertility in South Sulawesi Province.

METHOD

Population-based research that used secondary data from the 2017 Indonesian Demographic and Health Survey (IDHS) with a cross sectional study approach. The Indonesian Demographic and Health Survey (IDHS) is a national scale survey specifically designed to obtain information on fertility behavior, family planning, maternal and child health, maternal and child mortality, knowledge of HIV/AIDS and sexually transmitted infections in 34 provinces in Indonesia.

The 2017 IDHS sample is the result of a multi-stage stratified design. In this study, we filtered adolescents aged 15-19 years who lived in South Sulawesi Province resulting in 336 people. The main variable, adolescent fertility, was defined as the childbearing experience of adolescents aged 15-19 at the time of data collection, while the independent variables consisted of sociodemographic characteristics (age, employment status, latest education level, wealth index, residential status), access to mass media, internet use, ownership of health insurance, exposure to family planning messages/information, and knowledge related to modern contraceptives/methods and fertile period.

All analyses used sample weighting adjustment by dividing the sample weight by 1000000 and then normalized so that the sample size after weighting was the same as the unweighted sample size. Analyses were conducted univariately to describe the characteristics of the dependent and independent variables, bivariately to determine the association of socio-demographic variables, access and information, sexual activity and family planning literacy with the dependent variable of adolescent fertility, and multivariately to determine the factors that most influence adolescent fertility. The multivariate analysis used multivariate logistic regression with the aim of controlling for potential cofounder variables, so that the resulting prediction model was controlled/adjusted and the final model fit (robust and parsimonious).

RESULTS

About 8.4% of adolescents in South Sulawesi Province had given birth or were pregnant with their first child at the time of data collection, with the highest age distribution in the 15-17 years range (61.2%). More than half (88.7%) of the adolescents were not in school and not working (65.7%). About 64.4% of the recorded adolescents lived in villages but had sufficient access to mass media (69.9%) and the internet (88.1%).

Significant differences were identified in age (0.0004), schooling status (0.0147) and used the internet (0.0217). There was no significant difference in the exposure to family planning information among adolescents based on fertility category (0.6897). Similarly, knowledge of family planning methods (0.1112) and knowledge of fertile period (0.4739), showed no difference in fertility.

Table 1. Frequency Distribution and Bivariate Analysis of Determinants of Adolescent Fertility

| Variable | Fertility | | | | P-value |
| | Yes | | No | | |
	n = 24	%	n = 260	%	
Age					
15 – 17	6	2.1	168	59.1	0.0004
18 – 19	18	6.3	92	32.5	
Education Level					
High	23	8.0	220	77.3	0.1627
Low	1	0.3	41	14.3	
Schooling Status					
Yes	0	0.1	32	11.2	0.0147
No	23	8.3	229	80.4	
Working Status					
Not working	16	5.6	171	60.1	0.8669
Work	8	2.8	90	31.5	
Wealth Index					
Low	17	5.8	135	47.6	
Medium	4	1.5	47	16.6	0.1155
High	3	1.1	78	27.4	
Residence					
Rural	15	5.4	168	59.0	0.9507
Urban	9	3.0	93	32.6	
Mass Media Access					
Less	1	0.3	17	6.1	
Enough	19	7.0	179	63.1	0.3721
Adequate	3	1.1	64	22.4	
Internet Usage					
Ever	17	6.1	233	81.9	
Never	6	2.3	28	9.7	0.0217
Health Insurance Coverage					
No					
Yes	7	2.4	88	30.9	0.6529
	17	6.0	173	60.7	
Exposure to Family Planning Information					
Yes	13	4.6	132	46.5	
No	11	3.8	128	45.1	0.6897
Family Planning Knowledge					
Yes	24	8.4	242	85.3	0.1112
No	0	0	18	6.3	
Fertile Period Knowledge					
Yes	4	1.4	31	10.9	
No	20	7.0	229	80.7	0.4739

The results of multivariate analysis showed aged 18-19 years, low education level, not currently in school at the time of the survey, and respondents never used the internet were determinants of adolescent fertility in South Sulawesi Province. Age was the largest determinant of adolescent fertility (aOR=8.6; 95%CI 2.82 - 26.49) which means that the probability of adolescents aged 18-19 years to experience fertility is 8.6 times higher than adolescents aged 15-17 years.

Respondents never used the internet (aOR=3.8; 95%CI 0.00 – 0.01) which means that the probability of adolescents never used the internet to experience fertility is 3.8 times higher than adolescents internet user. Fertility variables based on education level and schooling status did not show statistically significant differences, but were retained in multivariate analysis for substantial consideration.

Table 2. Multivariate Analysis of Determinants of Adolescent Fertility in South Sulawesi Province in 2017

Variable	Determining Factors	
	Adjusted OR (95% CI)	p-value
Age		
15-17	1	
18-19	8.6 (2.82 – 26.49)	<0.001
Education Level		
High	1	
Low	6.8 (0.79 – 59.39)	0.078
Schooling Status		
Yes	1	
No	3.5 (0.42 – 30.07)	0.240
Internet Usage		
Yes	1	
No	3.8 (0.00 – 0.01)	<0.001

DISCUSSION

Pregnancy and childbirth in adolescents have consequences for population growth rates and maternal and child health problems, such as the ownership of labor complicating factors, low birth weight, fetal growth delay and maternal mortality. Adolescents who experience fertility before the age of 20 years have twice the risk of dying and limited opportunities for employment compared to adolescents who experience fertility after the age of 20 years [11].

A linear relationship between age and fertility rate was identified. The higher the age of adolescent females, the higher the percentage of fertility incidence[12]. This suggests a positive relationship between fertility incidence and increasing female age. Several studies have revealed that the age of the population at first marriage will affect fertility [13,14]. Based on the number of children, those who marry at an older age have a lower number of children [15]. Based on BKKBN's strategic goals, it continues to strive through various activities so that the birth rate among young women aged 15-19 years can continue to fall so that the number of births per one woman is also low.

Adolescent fertility is positively associated with the total fertility rate (TFR), which is the average number of children born to a woman during her childbearing years (15 - 49 years). Teenage mothers have longer "reproductive careers". A study in France, England and Wales showed variations in pregnancy intervals between young mothers (<18 years old) and older mothers (>30 years old). It was noted that the shortest interval between the first pregnancy and the next pregnancy was 7 months[16]. Furthermore, a study conducted in Nigeria confirmed that at the end of the childbearing period (45 - 49 years), the ratio of the average number of children born to teenage and older mothers was 7 : 5 [17].

School activities could potentially be a factor that causes an adolescent to decide to delay marriage and having children. The decision to give birth at an adolescent age will take up learning time because they have to share their focus between studying and taking care of children and family. The ease of access to information by teenagers also contributes to their decision to stay in school in order to access decent work and ultimately have a positive impact on their future and economic life.

The findings in this research are in line with research conducted by Raharja (2014) [12] who found that the percentage of female adolescents with more than nine years of education (entering high school and higher) had a percentage of fertility incidence of 3%, while the percentage of fertility incidence in women with a maximum of nine years of education (graduating from junior high school) was three times higher at 15%. Research by Purbowati (2019) [18], showed a two-way interaction between fertility variables and schooling status. Childbirth in adolescence has a significant and negative effect on women's years of education. Women who give birth for the first time during adolescence have a tendency not to continue schooling because their time is divided between studying and childcare responsibilities.

Mass media and the internet influence the delivery of information about fertility, especially about sex and reproductive health [19]. A study conducted by UNICEF with Kominfo, The Berkman Center for Internet and Society, and Harvard University found that at least 30 million adolescents in Indonesia access the internet regularly [20].

The proportion of women who have 1-2 children is higher among women who have access to social media that informs about family planning compared to women who do not have media access. In contrast, women who had more than two children were more likely to be those who did not have access to information about family planning from the media [21]. Different results were shown by research conducted by Ramadhan (2019) [22], which showed that the use of social media and the internet did not significantly affect the formation of adolescents' perceptions of reproductive health. This condition is due to the fact that social media is not used as a forum for seeking information about reproductive health.

CONCLUSIONS

The adolescent fertility rate in South Sulawesi Province reached 8.4%. There are significant differences in adolescent fertility based on age, schooling status and internet usage in South Sulawesi Province based on 2017 SDKI data. Massive affirmation and socialization of laws and regulations related to the age limit for marriage for both men and women at least 19 years old through related institutions and community leaders (KUA, BKKBN, Health Facilities, Religious Leaders, and Community Leaders) and encouraging knowledge of early marriage dispensation by religious courts needs to be done. Expansion of internet access and the role of the media in socializing the issue of the impact of promiscuity and the impact of early marriage, the importance of the concept of family planning to adolescents and young couples of childbearing age (PUS) to delay having children until a healthy reproductive age, needs attention.

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