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Is Adolescent Fertility High in Maluku Province? Indonesian Demographic and Health Survey (IDHS) Data Analysisin 2017

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A B S T R A C T

Adolescent fertility becomes an important issue for it gives impact on education, employment, economic status, gender inequality, and poor health or death. The evidence was based on research to improve adolescent sexual and reproductive health. However, the matter of adolescent fertility was not well-known in Maluku Province. The importance of this problem to be investigated is related to what factors cause the high incidence of adolescent fertility in Maluku Province.The method used in this study was quantitative approach of 2017 IDHS secondary data analysis which has received approval from ICF Institutional Review Board. The population of this study were all female adolescents aged 15-19 years old in Maluku with a total sample of 371 respondents. The data analysis in this study consisted of univariate, bivariate and multivariate analysis. The results showed that the proportion of adolescent fertility in Maluku Province was 9,7%. It was found statistically that the variables of age, education, area of residence, marital status, contraceptive use and economic status had a significant relationship with adolescent fertility (p-value < 0,05). This study also showed that the variable of age became the most dominant variable affecting the incidence of adolescent fertility.

Tinggikah Fertilitas Remaja di Provinsi Maluku? Analisis Data Survei Demografi dan Kesehatan Indonesia (SDKI) Tahun 2017

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A B S T R A K

Fertilitas remaja menjadi isu penting karena berdampak pada pendidikan, pekerjaan, status ekonomi, ketidaksetaraan gender, dan kesehatan yang buruk atau kematian. Evidence based melalui penelitian untuk meningkatkan kesehatan seksual dan reproduksi remaja perlu ditingkatkan. Namun, masih terbatas yang diketahui tentang fertilitas remaja di Provinsi Maluku. Pentingnya permasalahan ini untuk diteliti terkait faktor-faktor apa saja yang menyebabkan tingginya kejadian fertilitas remaja di Provinsi Maluku. Metode pada penelitian ini menggunakan pendekatan kuantitatif analisis data sekunder SDKI tahun 2017 yang telah mendapat persetujuan dari ICF Institutional Review Board. Populasi penelitian ini adalah seluruh remaja wanita berusia 15-19 tahun di Maluku dengan total sampel 371 responden. Analisis data dalam penelitian ini terdiri dari analisis univariat, bivariat dan multivariat. Hasil penelitian menunjukkan proporsi fertilitas remaja di Provinsi Maluku sebesar 9,7%. Ditemukan secara statistik variabel umur, pendidikan, daerah tempat tinggal, status pernikahan, penggunaan kontrasepsi dan status ekonomi memiliki hubungan yang signifikan dengan fertilitas remaja (p-value < 0.05). Penelitian ini juga menunjukkan variabel umur menjadi variabel yang paling dominan mempengaruhi kejadian fertilitas remaja.

INTRODUCTION

Globally, adolescent fertility is an important issue. This is because around 11% of babies born to adolescent mothers occur with 90% of them occurring in low-income countries (Chandra-Mouli et al., 2013). The data from the Indonesian Demographic and Health Survey (IDHS) in 2017 showed that 7% of women aged 15-19 years had become mothers, 5% had given birth and 2% were pregnant with their first child (IDHS, 2017). Adolescent fertility also contributes to both physical and mental morbidity and can have an impact on maternal and infant mortality. This was in line with Patton et al. (2009) which revealed that adolescents aged 10-14 years are five times more likely to die from pregnancy and childbirth than adult women, and women aged 15-19 are the main cause of death related to the mother condition.

The study from low-income countries reported that adolescent pregnancy has an impact on education, employment, socioeconomic, gender inequality, and also contributes to poorer health (Kennedy et al., 2011). Health problems experienced by pregnant adolescents include eclampsia, puerperal endometritis, stillbirth, low birth weigh (LBW), preterm delivery, small for gestational age (SGA) and intra-hospital early neonatal death (Xie et al., 2021). In addition, there are 84.04% of adolescents who have abortions and receive threats of violence from their partners because of unwanted pregnancies (Djuwitaningsih & Setyowati, 2017).

Prevention of adolescent pregnancy is an important component to improve adolescent sexual and reproductive health. This requires evidence based on data at the regional/national level related to adolescent reproductive health, behavior, use of information, and family planning services. Several studies related to adolescent fertility have been conducted in several areas in Indonesia such as NTT and Yogyakarta (Rahmadewi, 2011), Central Java (Raharjo et al., 2019), Kalimantan (Raharja et al., 2021), while relatively little is known about adoloscent fertility in Maluku Province. However, the presence of IDHS data allows researchers, policy makers and program designers to fill this gap. The DHS report has been recognized as one of the most comprehensive data sources in Indonesia regarding reproductive health information, including adolescent data. Thus, this study aimed to identify the factors most associated with the incidence of adolescent fertility in Maluku Province.

METHOD

The data for this study came from the IDHS data in 2017 which has received approval from the ICF Institutional Review Board by filling out the registration form at dhsprogram.com. The data used was IDIR71FL and filtering, cleaning and recoding are carried out according to the research variables in the downloaded dataset. The IDHS in 2017 of Maluku Province, the number of samples of adolescent fertility was 371 respondents with an age range of 15-19 years based on the WHO definition of adolescent.

The dependent variable in this study is adolescent fertility, including the adolescent who has given birth (V208) or is currently pregnant with their first child (V213). While the independent variables in this study were age (V012), an education level (V106), residence area residence (V025), marital status (V501), contraceptive use status (V312), and economic status (V190). The study analysis was divided into 3 parts, namely univariate, bivariate, and multivariate analysis. Univariate analysis was conducted to describe the characteristics of the variables to be studied. Bivariate analysis was conducted to determine the correlation between each independent variable (age, education, area of residence, marital status, contraceptive use status and economic status) and the dependent variable (adolescent fertility) by using the chi-square test.

Multivariate analysis was conducted in this study to see which factors simultaneously influence the occurrence of adolescent fertility. This is because the bivariate analysis only obtained the magnitude of the risk of adolescent fertility associated with one of the variables studied without looking at the influence of other variables. For creating a multivariate analysis model, a bivariate analysis between the dependent and independent variables must be carried out to determine the p-value and OR (Odds Ratio) value. The chosen variable is the one that has a significance of p-value <0.25.

RESULTS AND DISCUSSION

This study used IDHS data with female respondents aged 15-19 years. Figure 1 showed the distribution of the percentage of marital status and age at first marriage in adolescents. In this study, fertility was seen from respondents who had given birth and were pregnant with their first child. Based on the results of the analysis in table 1, it can be seen that from 371 women aged 15-19 years, 8.1% of respondents who had given birth were found to be pregnant and 1.6% of other respondents were pregnant with their first child.

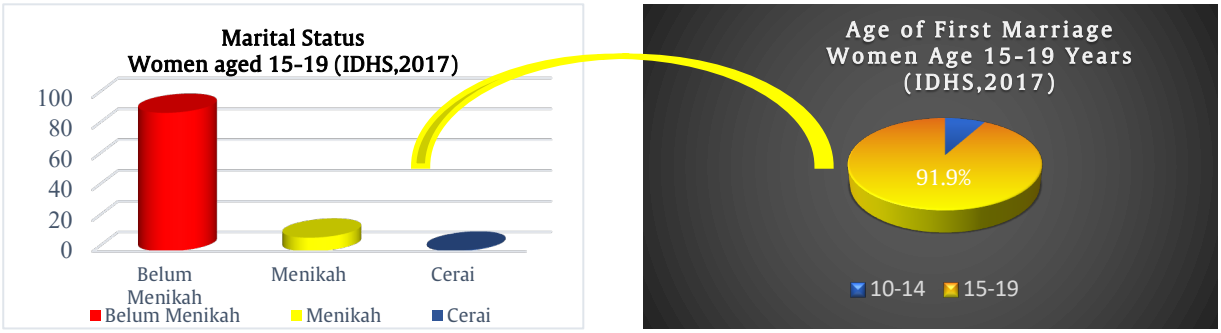

Figure 1. Marital status and age at first marriage of respondents

Table 1
Frequency distribution of female adolescent respondents based on individual characteristics

Variable	Category	n	%
Age Group	15-17 years old	244	65.8
	...15 years old	75	20.2
	...16 years old	93	25.1
	...17 years old	76	20.5
	18-19 years old	127	34.2
	...18 years old	71	19.1
	...19 years old	56	15.1
	Mean ± SD		16.84 ± 1.354 tahun
	Median		17 tahun
Education	Elementary School	10	2.7
	Middle School	315	84.9
	High School/University	46	12.4
Residence Area	Urban	205	55.3
	Rural	166	44.7
Marital Status	Unmarried	334	90
	Married	33	8.9
	Divorce	4	1.1
Contraceptive use status	No	358	96.5
	Yes	13	3.5
Economic status	Lowest	164	44.2
	Lower middle	86	23.2
	Intermediate	56	15.1
	Upper middle	40	10.8
	Highest	25	6.7
Age of First Childbirth	<15 years old	1	3.3
	15-17 years old	16	53.3
	18-19 years	13	43.3
	Mean ± SD		17.17 ± 1.2 year
	Median		17 year
First child pregnant	No	365	98.4
	Yes	6	1.6
Have given birth	Yes	341	91.9
	No	30	8.1

Source: IDHS Data 2017

Based on table 1, it can also be concluded that the age group of respondents involved in this study was the majority aged 15-17 years by 65.8% with the most age of 16 years old at 25.1% or 93 of the 371 total respondents studied. While the average age of the respondents involved in this study was 16.84 years. Based on the education level, the majority of adolescent female are at the junior high school level of 84.9%. The distribution proportion of respondents living in urban areas is greater than respondents living in rural areas with a percentage of 55.3%.

In table 1, it is known that 90% of unmarried women or 334 respondents. The status of contraceptive use can be seen from the table above that 96.5% of respondents in this study used contraception. Most of the women in this study belonged to the lowest economic status with a percentage of 44.2% or as many as 164 of the 371 total respondents studied.

Table 2.
Distribution of respondents' fertility percentages based on demographic and socioeconomic characteristics

Variable	Category	Adoloscent Fertility				Total	*p-value*
		Yes		No			
		n	%	n	%		
Age	15-17 years old	233	62.8	11	3.0	244	.000
	18-19 years old	102	27.5	25	6.7	127	
Education	Elementary/Middle	289	77.9	36	9.7	325	.013
	High School/University	46	12.4	0	0.0	46	
Residence Area	Urban	192	51.8	13	3.5	335	.015
	Rural	143	38.5	23	6.2	166	
Marital Status	Unmarried	331	89.2	3	0.8	334	.000
	Married/Divorce	4	1.1	33	8.9	37	
Contraceptive Use Status	No	335	90.3	23	6.2	358	.000
	Yes	0	0.0	13	3.5	13	
Economic Status	Lowest	139	37.5	25	6.7	164	.014
	Lower Middle	82	22.1	4	1.1	86	
	Intermediate	52	14.0	4	1.1	56	
	Upper Middle/Highest	62	16.7	3	0.8	65	

Source: IDHS Data 2017

The correlation between education and adolescent fertility

The results of the bivariate analysis showed that the educational status variable had a statistically significant correlation (p-value = .013) with adolescent fertility of 9.7%. Adolescents with elementary/junior high school education were 863 times more likely to experience adolescent fertility than adolescents with high school/university (OR = .853, 95% CI = .827 - .900). In the population, it was 95% believed that adolescents with elementary/junior high school education are more at risk of experiencing adolescent fertility with a risk ranging from .827 to .900 compared to adolescents with high school/college education. This was in line with Berliana et al. (2018) who conducted secondary data research on women aged 15-19 years in Indonesia revealed that women who did not finish their elementary school tend to marry more often than those who finished high school.

The findings in this study are also in line with Chotimah et al. (2020) in Indonesia, Amouzou (2016) in Senegal and DeCicca & Krashinsky (2020) in Canada. It was found in Indonesia that from several factors such as wealth index (AOR=1.22; 95% CI=1.08-1.39), reseidence area (AOR=1.23; 95% CI=1.13-1.34), frequency of reading newspapers or magazines (AOR=1.31; 95% CI=1.11-1.55), frequency of internet use (AOR=1.30, 95% CI=1.02-1.65) and the most dominant factor was education (AOR=15.39; 95% CI=11.13-21.26). In Senegal, among adolescent female before the age of 20, it was found that 24.49% of adolescents who did not attend school were already pregnant compared to 6.93% of adolescents with middle school education (Amouzou, 2016). Meanwhile, DeCicca & Krashinsky (2020) revealed that education has a causal opportunity to decrease the incidence of fertility. The findings of this study are based on two theories, namely time use theories and human capital theories. The "time use" theory argued that adolescents spend more time in school-leaving less time for other activities, and therefore less likely to give birth to children (DeCicca & Krashinsky, 2020). While the "human capital" theory argued that when teenagers finish school, they immediately follow additional/informal schools such as courses that are of interest for entering the job market and have an impact on decreasing fertility rates (DeCicca & Krashinsky, 2020). These three studies reveal that access to education for adolescent female with low economic status and low education should be prioritized.

Other studies have also been conducted to determine the correlation between education and adolescent fertility. The research conducted by Black et al. (2008) in the United States, Cygan-Rehm & Maeder (2013) in Germany, Geruso & Royer (2018) in the UK, and Lavy & Zablotsky (2015) in Israel showed that education has a significant impact on the decline in adolescent fertility. The research of Black et al. (2008) revealed that education can reduce adolescent fertility by 5-9%, while research by Cygan-Rehm & Maeder (2013) revealed that the extension of compulsory education from 8 to 9 years had a significant impact on the decline in adolescent fertility. Research by Geruso & Royer (2018) also found a decrease in fertility by 1/3 of adolescents aged 16 and 17 years with an increase in compulsory schooling from 15 to 16 years. Meanwhile, Lavy & Zablotsky (2015) in their research found that an additional year of school time caused a decrease in fertility by an average of 0.6 less in adolescent women.

The correlation between age and adolescent fertility

The results of multivariate analysis showed that there was a statistically significant correlation between age and adolescent fertility. Age in this study was grouped into 15-17 years and 18-19 years. Adolescents in the 15-17 year age group have a 5,837 times higher chance of experiencing the incidence of adolescent fertility compared to adolescents in the 18-19 year age group (OR = 5,837, 95% CI = 2,716-12,455). In the general population, it is 95% believed that adolescents with an age range of 15-17 years are at risk for adolescent fertility with a risk range between 2,716 and 12,545 compared to adolescents with an age range of 18-19 years.

The results of the multivariate analysis also showed that age was the most dominant variable influencing the incidence of adolescent fertility in Maluku Province after being controlled by the variables of residence and economic status. This was in line with Kennedy et al. (2011) that revealed that most women start sexual activity and give birth to children during adolescence. Research by Kennedy et al. (2011) stated that 11 low- and middle-low income countries including Indonesia revealed that the average age of adolescents having sexual intercourse is between 17.3 to 21.9 years and 26.3% of women aged 15-19 years are pregnant, and 48.5% of adolescents aged 19 years have given childbirth.Another study by Murray et al. (2018) in 195 countries also revealed that fertility under 25 years of age increased by .08% to 2.4% in Korea and Nigeria. Besides that two studies, the research by Raharjo et al. (2019) in Central Java toward 4,560 female adolescent respondents aged 15-19 years also showed that there was a significant correlation between age and adolescent fertility ($p<0.05$).

The correlation between the residence area and adolescent fertility

The results of multivariate analysis showed that the residence area statistically had a significant correlation with adolescent fertility. The adolescents who live in rural areas have a 2.539 times higher chance of experiencing the incidence of adolescent fertility compared to adolescents who live in urban areas (OR = 2,539, 95% CI = 1.130-5.701). In the general population, it is 95% believed that adolescents who live in rural areas are at risk for adolescent fertility with a risk range ranging from 1.130 to 5.701 compared to adolescents in urban areas.

This finding is in line with Berliana et al. (2018) that adolescent females living in rural areas are 1,487 times more likely to marry earlier than women in urban areas. This is because in urban areas it is easier to access information and education which has an impact on awareness and knowledge about adolescent marriage (Berliana et al., 2018). Another study by Xie et al. (2021) in China also revealed that the largest proportion of adolescent pregnancies occurred in rural areas at 68.5%. This is influenced by economic level, education, social habits (customary marriage at an early age) and high-risk sexual behavior that contribute to more pregnancies in adolescents (Xie et al., 2021).

The correlation between contraceptive use status and adolescent fertility

The results of the bivariate analysis showed that there was a significant correlation between contraceptive use and the incidence of adolescent fertility (p-value = 0.000). The

results of the analysis also showed that adolescents who did not use contraception had a 1.565 times higher chance of experiencing the incidence of adolescent fertility compared to adolescents who used contraception (OR = 1.565, 95% CI = 1.224-2.001). In the general population, it is 95% believed that adolescents who do not use contraception are at risk for adolescent fertility with a risk range ranging from 1.224 to 2.001 compared to those who use it.

The finding in this study was in line with several previous studies conducted by Capurchande et al. (2016), Coates et al. (2018), Kantorová et al. (2021), Olika et al. (2021). Research by Olika et al. (2021) in Ethiopia showed an increase in contraceptive use of sexually active adolescents females from 6.9% in 2000 to 39.6% in 2016.This study also revealed the low contraceptive use among adolescents who did not attend school, low economic status, adolescents who rarely visited health facilities and who did not receive information about family planning (Olika et al., 2021). Family planning was important in reducing the incidence of adolescent fertility by expanding access to contraception by taking into account women's age and marital status (Kantorová et al., 2021). This is illustrated in the survey of Kantorová et al. (2021) of 300 million women aged 15-19 years in 2019, there were 29.8 million who used contraception and 15 million did not.

Qualitative research by Coates et al. (2018) on 15 African American girls with an average age of 17 years, revealed that there are 3 reasons why they use contraception, namely easy to use, preventing pregnancy and overcoming menstrual problems. This condition showed that adolescents have active sexual behavior, so counselling and educational services are important for health service providers. However, another qualitative study by Capurchande et al. (2016) in Mozambique revealed that there are different perceptions of contraceptive use in adolescents. The misinterpretation of adolescents about contraception is illustrated in this study because talking about contraception and sexuality is still a taboo subject in the family or society (Capurchande et al., 2016). It is taboo because talking about contraception is seen as having sexual intercourse. In addition, among adolescent males, they think that "...becoming a man is able to make women being pregnant", on the other hand, adolescents female interviewed revealed that "a serious correlation with a man if he is able to give him children" (Capurchande et al., 2016). This study showed that this risky behavior is used as a means to test virility/productivity (Capurchande et al., 2016). In addition, this study also found that the use of contraceptives made the teenager afraid because it can affect female infertility such as blood clots, aging, frigidity, decreased sexual desire, and bleeding (Capurchande et al., 2016).

The correlation between economic status and adolescent fertility

The results of the bivariate analysis also showed that there was a significant correlation between economic status and adolescent fertility. Adolescents with the lowest economic status have a 0.773 times higher chance of experiencing fertility than adolescents with lower middle, upper-middle/highest economic status (OR = 0.773, 95% CI = 0.417-1.432). In the general population, it is 95% believed that adolescents with the lowest economic status are at risk for adolescent fertility with a risk range ranging from 0.417 to 1.432 compared to adolescents with other economic statuses.

The finding in this study was in line with Amir et al. (2016) which used the data from the National Longitudinal Study of Adolescent Health on 1.579 respondents aged 12-34 years who showed economic status to be the strongest predictor compared to other factors in influencing fertility. This is because low economic status (household income) was positively correlated with a greater number of children (Amir et al., 2016). These findings indicate that the importance of economic resources in early household life in adolescents aged 12-21 years for helping and guiding adolescent families to obtain nutritious intake, keep away from domestic violence, quality education and access to health services (Amir et al., 2016). In line with Amir et al., Habito et al. (2019) revealed that 1175 teenagers with an average age of 17.6 years experienced adolescent pregnancies. Most of these adolescents belong to the lowest wealth quintile, live in rural areas and jobless (Habito et al., 2019).

Iijima & Yokoyama (2018) showed a correlation between economic stability in reducing fertility rates. Iijima & Yokoyama (2018) revealed that working adolescents were one of the factors that contributed to the decline in the number of early marriages, an increase in the average age of adolescents who married and gave birth to children later in Japan. There are 70% of unmarried adolescents or early adults who have become precarious workers and provide fertility-related benefits (Iijima & Yokoyama, 2018). These findings play a role in preparing adolescents regarding preparing for partners, pregnancy, childbirth and also after childbirth.

The correlation between marital status and adolescent fertility

The results of the bivariate analysis showed that there was a significant correlation between marital status and adolescent fertility. Adolescents who are married are 910.250 times more likely to experience adolescent fertility than unmarried adolescents (OR = 910,250, 95% CI = 195,314-4242.173). In the population, it was 95% believed that married adolescents are more at risk of experiencing adolescent fertility events with risks ranging from 195.314 to 4242.173 compared to unmarried adolescents.

The findings in this study were in line with Kennedy et al. (2011) that married women aged 15-19 years, including in Indonesia reported that 49.9% were unable to control delaying pregnancy with a large number of births less than 18 months apart. In addition, Pullum et al. (2018) revealed that early marriage can have a negative impact on the health of mothers and babies, and severely limits the education of adolescent females. This was in line with Pullum et al., Berliana et al. (2018) revealed that women's early marriage has negative consequences such as high-risk pregnancies, increased susceptibility to sexually transmitted infections, domestic violence, and a 2-fold risk of maternal death at the age of 15-19 years.

Besides pregnancy in married women, pregnancy also occurs in unmarried young women. In this study, there were 0.8% of unmarried adolescents but getting pregnant. Research by Kinoshita et al. (2016) in Aceh revealed that if an unmarried woman becomes pregnant, there are two possibilities, namely dropping out of school, marrying and raising children or the second option is to find a way to have an abortion. This research has implications for increasing the marriage age of women with various policies and programs from the government.

Table 3
Dominant variable incidence of adolescent fertility

Variable	B	p-value	OR	95% CI	
				Lower	Upper
Age	1.764	.000	5.837	2.716	12.545
Residence Area	.932	.004	2.539	1.130	5.701
Economic Status	-.258	.413	.773	.417	1.432

Source: IDHS Data 2017

In the multivariate analysis (table 3), the other three variables (education, marital status and contraceptive use status) were not included in the model because the education and contraceptive use status variables had p-value > 0.25. Meanwhile, marital status was not included because the OR (Odds ratio) value was large, which was 910.250. The OR number for the marital status variable is much greater than the other variables, so automatically the marital status variable has a very large influence on the incidence of adolescent fertility compared to other variables.Then the researcher is also worried that it will interfere with other variables that are included in the modelling process. From the independent variables, the age variable was the most dominant for the incidence of adolescent fertility with the OR value obtained is 5.837, it means that age has a 5.8 times chance of causing adolescent fertility after being controlled by the variables of the residence area and economic status.

CONCLUSIONS AND SUGGESTIONS

The results showed that the proportion of adolescent fertility in Maluku Province was 9.7%. Statistically, it also showed that the variables of age, education, residence area, marital status, contraceptive use and economic status have a significant correlation with the incidence of adolescent fertility in Maluku Province. In this study, it was also found that the age variable was the most dominant variable affecting the incidence of fertility.

This study showed the need for spreading information related to the disadvantages of being an early parent, empowering young women, strengthening communities that involve multi-level (adolescents, parents, teachers, community figures, religious figures, health workers and the government), promoting safe sex practices, spreading accurate information about the use of contraception through interesting and innovative media (animated videos or social networks), as well as the need for policies for students who are not in school/not graduated/have graduated from high school but do not continue to university level to be facilitated in attending informal schools such as appropriate courses interested to finish it can go straight for working.

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