Factors Influencing Birth in Adolescents in the Province of West Nusa Tenggara

Desi Rofita✉[1)], Catur Esty Pamungkas[2)], Aulia Amini[2)], Siti Mardiyah WD[2,3)], Retno Dewi Puspitasari[2,3)]

[1] Midwifery Study Program, Mataram Ministry of Health Polytechnic, East Mataram, Mataram City, West Nusa Tenggara, Indonesia
[2] Faculty of Health Sciences, Muhammadiyah University of Mataram, Mataram, West Nusa Tenggara, Indonesia
[3] Center for Population Research and Development, National Population and Family Planning Agency, Indonesia
✉Email: desirofita21@gmail.com

ABSTRACT

***Background**: Adolescent childbirth is a global problem, especially in developing countries. Based on data from the 2017 Indonesian Demographic and Health Survey (SDKI), the ASFR 15-19 at the national level is 36 per 1000 women while the NTB Province is 42 per 1000 women, so it is still in a position above the national level. **Objective**: To know the factors that influence teenage births. **Methods**: This research is an analytical study using secondary data from the results of the 2017 Indonesian Demographic and Health Survey (IDHS) by using a cross-sectional approach. The population in this study was 1368 respondents. sampling technique using purposive sampling obtained as many as 806 respondents. Data analysis was using univariate, bivariate analysis with chi-square, and multivariate with logistic regression analysis. **Results**: Based on the results of bivariate analysis, it was found that there was a significant relationship between the factors of education (CI 95% 2.996-16.366), age of first sex (CI 95% 2.271-11.853), use of contraception (CI 95% 0.292-0.846), number of children born (CI 95% 0.378-0.880) to teenagers. Factors of employment status (CI 95% 0.667-1.482) and living area (CI 95% 0.635-1.406) did not have a significant relationship with teenage births, while the results of multivariate analysis showed that the R2 value was 0.603 which means that education, age of first sex, use of contraceptives, and number of children contributed to teenage births of 60.3%, the remaining 39.7% is caused by other variables. **Conclusion**: Factors of education, age of first sex, use of contraceptives, and the number of children have a significant relationship with teenage births. It is hoped that the BKKBN of West Nusa Tenggara Province will evaluate the programs that have been established to determine the effectiveness of these programs in overcoming the problem of teenage births.*

***Keywords**: Adolescence, Birth, Determinant Factors.*

INTRODUCTION

Childbirth in adolescents is still a major public health problem, especially in low- and middle-income countries. Approximately 1 out of 8 within 140 million births each year is experienced by adolescent girls in low- and middle-income countries with 95% (WHO, 2020a). Adolescent childbirth can have a negative impact on the health, social and economic sectors, both in the short and long term (Pinto e Silva and Surita, 2017;Maravilla, Betts and Alati, 2019). Childbirth in adolescents is a global problem of concern, especially in low- and middle-income countries. The number of teenage births is around 16 million women aged 15-19 years and 2.5 million women under the age of 16 (WHO, 2020b). According to UNICEF, Indonesia ranks in the middle for countries with available data on marriage before the age of 18 in the East Asia and Pacific region, with Laos and the Solomon Islands ranking highest at 37% and 28.3%, respectively, and Mongolia and Vietnam ranked the lowest at 6.2% and 12.3%, respectively (UNICEF, 2014). However, due to its large population, Indonesia is one of the countries with high teenage births. This is due to the highest burden of child marriage in the region and a major

Received: 01-12-2022, Accepted: 13-03-2023, Published Online: 08-03-2024

contribution to the overall burden of child brides globally (UNICEF, 2014; BPS, 2020).

Population problems such as high fertility rates are one of the problems faced by almost all developing countries, including Indonesia. High population growth has an impact on various aspects of life. Furthermore, population growth control is carried out through efforts by controlling birth rates, infant and child mortality rates. Birth (fertility) is the result of real reproduction (live birth) of a woman or a group of women (Heri and Cicih, 2019).

Indonesian Demographic and Health Survey 2017, ASFR 15-19 at the national level indicated that there was 36 per 1000 women, while the Province with the highest ASFR was Central Kalimantan at 83 per 1000 women, then the lowest one was DI Yogyakarta at 15 per 1000 women and in West Nusa Tenggara Province at 42 per 1000 women consecutively, which means that West Nusa Tenggara Province is still in a position above the national level (BKKBN., 2018)

There are several factors that affect adolescent births such as age, age at first marriage, number of marriages, women's employment status, use of contraceptives, income/wealth, and education level (Mahendra, 2017) In addition to the factors, other research also reports that adolescent births are influenced by age, area of residence, wealth quintile, and level of education (Neal et al., 2012). Adolescent marital status is a determinant in childbearing. Adolescents who are not married are less likely to have children than those who are married (Eyasu, 2016).

This research is in line with research conducted by Zhang and Lu (2014) that shows the factors affecting the expectancy of childbirth including age, socioeconomic status, ethnicity, culture, family income, pregnancy planning, and knowledge about childbirth. Age at first sex, current age, and marital status are key factors associated with adolescent childbirth (Monari, Orwa and Agwanda, 2022). Adolescents who have sex for the first time in their late teens are less likely to give birth. These findings are in accordance with research by Kassa et al. (2019) who revealed that fertility is higher in adolescents who initiate sexual intercourse before their 18th birthday compared to those who do not have sexual intercourse

Childbirth increases risks for both mother and baby, and can also have negative social and economic effects on children, families and communities (Korenčan et al., 2017). Childbirth in adolescents will have an impact on the mother both physically and psychologically. Physical effects include premature birth, chorioamnionitis, endometritis, severe preeclampsia, eclampsia, postpartum hemorrhage, fetal growth restriction, fetal distress, and even death (Socolov et al., 2017).

The impact of teen births is that children are more likely to be born prematurely, have a lower birth weight and higher neonatal mortality, while mothers experience greater rates of postnatal depression and are less likely to start breastfeeding, less likely to complete secondary school, more likely to live in poverty, and have children who often experience health and developmental problems (Wall-Wieler, Roos and Nickel, 2016). In addition, adolescent fertility also has an impact on the incidence of stunting. Fertility at adolescence has a 3.86 times chance of stunting (Larasati, Nindya and Arief, 2018). Adolescent fertility can also have an impact on breastfeeding practices, where mothers who experience adolescent fertility are less likely to exclusively breastfeed their babies (Cinar and Menekse, 2017).

Adolescent fertility is one of the health problems that must be overcome because adolescent fertility has many negative impacts both on the mother and the baby, so it is necessary to investigate what factors influence it. Based on this background, this study aims to analyze the factors that cause adolescent births.

METHODS

This research is a quantitative study using secondary data from the results of 2017 Indonesian Demographic and Health Survey (IDHS) carried out by the Central Statistics Agency (BPS) in collaboration with the National Population and Family Planning Agency. Indonesian Demographic and Health Survey (IDHS) results provide nationally representative data which are conducted every five years in low and middle-income countries (LMICs) to monitor population health and

Received: 01-12-2022, Accepted: 13-03-2023, Published Online: 08-03-2024

demographics. Further information is available on the Demographic and Health Surveys (DHS) program website. (http://dhsprogram.com/).

The research design is analytic observational, where the research was conducted without interfering with research subjects (society), directed at explaining a situation or situation with a cross-sectional approach. The population in this study were 1368 respondents. The total sample is 806 respondents with a sampling technique using purposive sampling based on inclusion and exclusion criteria. The inclusion criteria were adolescents who gave birth at the age of 15-19 years and had complete data, while the exclusion criteria were respondents who gave birth aged> 19 years and did not have complete data. The independent variables in this study were education level, age at first sex, employment status, use of contraception, and area of residence, while the dependent variable was teenage births.

This study uses univariate analysis, bivariate analysis, and multivariate analysis. The frequency of the distribution procedure for each variable is explained by univariate analysis. Cross-tabulation is also applied to observe the relationship between variables based on the categories using chi square analysis. Logistic regression analysis was employed to determine the effect of education, age at first sex, and use of contraception on teenage births. This research was conducted by utilizing secondary data from reports published on official platforms that are easily accessible by anyone; therefore, ethical permission is not required to conduct this research.

RESULTS AND DISCUSSION

This research was carried out by analyzing secondary data obtained from the 2019 IDHS results in West Nusa Tenggara Province, consisting of 806 people. Data analysis used variables that were predicted as factors related to the incidence of teenage births such as education level, age at first sex, employment status, use of contraceptives, and area of residence. Complete data analysis can be described as follows:

1. Univariate Analysis

   Univariate analysis was carried out for each research variable, namely the independent variables (education level, age at first sex, employment status, use of contraceptives, and area of residence) to the dependent variable (adolescent births).

Table 1. Frequency Distribution of Univariate Analysis.

Variables	Category	n	%
Education	No education	32	4
	Elementary (Elementary School)	282	35
	Intermediate (junior high school, high school)	388	48.1
	High (Diploma, Bachelor)	104	12.9
Age of first sex	<15 years	71	8.8
	15-19 years	384	47.6
	>19 years	351	43.5
Employment status	Employed	448	55.6
	Unemployed	358	44.4
Use of contraceptives	Use	700	86.8
	Do not use	106	1.2
Area of residence	Urban	405	50.2
	Rural	401	49.8
Teenage childbearing	Childbirth ≤ 19 years	310	38.5
	Childbirth > 19 years	496	65.1
Total		806	100

Received: 01-12-2022, Accepted: 13-03-2023, Published Online: 08-03-2024

Table 1 shows that most of the respondents had the last education, namely secondary education, as many as 388 people (48.1%). Most of the respondents had sexual intercourse for the first time at the age of 15-19 years as many as 384 people (47.6%).

The majority of respondents work with as many as 448 people (55.6%). Respondents who used contraception were 700 people (86.8%) The majority of respondents work with as many as 448 people (55.6%). Respondents who used contraception were 700 people (86.8%) and most of the respondents lived in urban areas, namely 405 people (50.2%). The number of respondents who gave birth in their teens was 310 people (38.5%).

The factors that influence the birth of adolescents are area of residence, age of first sex, age of first birth, and poverty (Amongin et al., 2020). Poverty causes young girls to lose the power to make decisions about the next birth, as well as the lack of use of family planning (Aslam et al., 2017). In accordance with other studies, it is stated that age at first sex, current age, marital status, wealth index, employment status, marital status, infertility, miscarriage postpartum infectivity, parental income, religion, media exposure, number of dead children, cohabitation status and practice of sexual intercourse, contact with family planning officials, husband's opinion on family planning, and contraceptive use are the main determinants of childbearing in adolescents (Neal, Chandra-Mouli and Chou, 2015; Raharjo et al., 2019; MonarOrwa and Agwanda, 2022;). Contraceptive use plays an important role in changes in fertility (Laelago, Habtu and Yohannes, 2014).

According to research conducted by Mathenge Mutwiri (2019), it shows that age, education level of women, marital status, and age at first marriage affect the number of children born to adolescents. Adolescent marital status is an important determinant in giving birth to adolescents. Unmarried adolescents are less likely to have children than those who are married. The results showed that the percentage of married youth who had children was 70.7%, while the percentage of unmarried youth who had children was 8.1% (Monari, Orwa and Agwanda, 2022).

The low quality of adolescent sexual and reproductive health services, inadequate infrastructure, incompetence of health workers, and low utilization of services among adolescents are the main challenges in adolescent births (FDRE-MOH, 2016).

2. Bivariate Analysis

Bivariate analysis is an analysis used to see the relationship between the variables age, education, age of first sex, employment status, use of contraception, and area of residence with teenage births.

Table 2. Frequency Distribution of Bivariate Analysis.

Variable	Teenage childbearing				Total		*P Value*	PR	CI 95%
	Childbirth ≤ 19 years		Childbirth > 19 years						
	n	%	n	%	n	%			
Education									
No education	14	5.2	16	3.2	32	4	0.00	4.0	2.996-16.366
Elementary (Elementary School)	144	46.5	138	27.8	282	35			
Intermediate (junior high school, high school)	144	46.5	244	49.2	388	48.1			
High (Diploma, Bachelor)	6	1.9	98	19.8	104	12.9			
Age of first sex									
<15 years	64	20.6	7	1.4	71	8.8	0.00	5.1	2.271-11.853
15-19 years	239	77.1	143	29.2	384	47.6			
>19 years	7	2.3	344	69.4	351	43.5			
Employment status									

Received: 01-12-2022, Accepted: 13-03-2023, Published Online: 08-03-2024

Employed	167	46.1	281	56.7	310	38.5	0.43	0.9	0.667-1.482
Unemployed	143	53.9	215	43.3	496	61.5			
Use of contraceptives									
Use	279	90	421	84.9	700	86.8	0.03	0.6	0.292-0.846
Do not use	31	10	75	15.1	106	13.2			
Area of residence									
Urban	162	53.3	243	49	405	50.2	0.36	0.9	0.635-1.406
Rural	148	47.7	253	51	401	49.8			

Respondents who gave birth ≤ 19 years were 144 people (46.5%) in the category of having primary and secondary education. The results of the bivariate analysis showed that there was a significant relationship between the education level of the respondents and the birth of adolescents with a p-value = <0.01 (α<0.05).

The level of education is a factor that affects the level of fertility, where the level of education is one of the drivers of the level of social welfare and it has an impact on high economic growth. Besides that the age of first marriage is the age when someone gets married (first marriage), women who marry at the age of young people have a longer time at risk of getting pregnant and the birth rate is also higher (Sinaga and Prihanto, 2017).

Education was identified as a strong determinant of adolescent births where women with primary or secondary education were less likely to become pregnant than those with no education. Recurrent pregnancies during adolescence are more common in women with lower education (Burke et al., 2018).

Studies from both developing and developed countries show that higher education can protect against early pregnancy or unwanted pregnancies (Yakubu and Salisu, 2018). Educated women are more likely to delay marriage, have smaller family sizes, and use contraceptives than uneducated women (Ndahindwa et al., 2014). The education level of the woman as well as the educational level of the husband/partner, marital status, age at first living together and age affect the birth of adolescents (Dana, 2018).

Respondents who had sexual intercourse for the first time at the age of 15-20 years experienced teenage births (age ≤ 19 years) as many as 239 people (77.1%). The results of the bivariate analysis showed that p-value = <0.01 (α=0.05) so that the age of first sex has a significant relationship with teenage births. Adolescents who have sex for the first time when they are > 18 years old are 84% less likely to give birth in their teens compared to women who have their first sexual intercourse when they are under 18 years old. Premarital sexual behavior in adolescents can lead to early marriage. One of the reasons is the association with peers. The interactions that occur between young men and women cause attraction between the opposite sex. This attraction is part of the process of adolescent sexual development. One study explained that girls are more vulnerable than boys because girls in some cases perceive sex as a way of showing care, affection and love, with the possibility of marrying in the future. They see sex as a sign of commitment in a relationship (Musa Abdullahi, 2013). This is supported by research conducted by Oljira, Berhane and Worku, (2012) and Khalenya, Akoya and Ndiguitha (2018) who stated that age at first sex was an important factor significantly associated with birth. So early sexual activity may be associated with the increasing adolescent births rate because early sexual activity can prolong the period of exposure to pregnancy risks over the reproductive span, thus leading to early childbirth.

Research conducted by Amongin et al. (2020) showed that age at first sex and age at first birth was associated with an increased likelihood of recurrent teenage births (PR 0.84, 95%

Received: 01-12-2022, Accepted: 13-03-2023, Published Online: 08-03-2024

CI = 0.81-0.88 and 0.76, 95% CI = 0.74-0, 79). This is in line with other studies which say that age at first sex is significantly associated with teenage pregnancy (Wado, Sully and Mumah, 2019).

Respondents who gave birth at age ≤ 19 years were 143 people (53.9%) with the category of mothers who did not work. If seen from the p-value = 0.43 (α = 0.05) then there is no significant relationship between employment status and teenage birth. Work is one part of social factors that are dynamic. A certain social environment does not just give the same effect to everyone, but social habits will have an influence on health. Therefore work has an indirect influence on adolescents so that between working youth and non-working youth there is no difference in the influence to do young marriages. This is supported by research which states that the employment status of young women is not related to the incidence of young marriage (Yunita, 2014). This is different from the research conducted by Mahendra (2017) which states that the employment status of women has a significant relationship with teenage births. Other similar studies explain that education level, employment status, and marital status are the main predictors of teenage births (Chung, Kim and Lee, 2018).

Another study revealed that adolescent fertility is significantly influenced by several factors, namely the level of education of young women and their partners, employment status of young women, wealth status, and media exposure. The chance of adolescent fertility is 3.98 times higher for unemployed female adolescents than for working female adolescents. As a result, girls who are not working are more likely to give birth than those who are working (Nyarko, 2012).

In this study, the majority of respondents had used contraception as many as 279 people (90%) and experienced teenage births. It is different from previous studies which said that many teenage births occurred in respondents who did not use contraception. However, based on the results of statistical tests, it shows that there is a significant relationship between the use of contraceptives and teenage births with a p-value = 0.03 (α = 0.05). Counseling about postpartum family planning helps adolescents determine which contraceptive method to use (Smith, 2014).

In addition, effective interventions to increase access to and use of contraception include policies requiring the provision of sexuality education and contraceptive services for adolescents, building community support for the provision of contraception for adolescents, providing sexuality education within and outside the school environment, and increasing access and use. Contraception by creating youth-friendly health services, integrating contraceptive services with other health services, and providing contraception through various outlets because the use of cell phones and social media are promising means of increasing contraceptive use among adolescents (Chandra-Mouli et al., 2014).

Most of the respondents gave birth at the age of > 19 years as many as 359 people (72.4%) in respondents with several children > 2 children while the number of respondents who gave birth ≤ 19 years was 155 people (50%). The statistical test shows that the p-value was 0.00 (α = 0.05) so there is a significant relationship between the number of children and the birth of adolescents.

Research conducted by Morell and Martín (2018) confirms that fertility is influenced by two factors, namely demographic factors including age, age at first marriage, length of marriage, parity or number of births experienced and the proportion of marriages, and non-demographic factors, namely education level, improvement in women's status, urbanization and industrialization.

Received: 01-12-2022, Accepted: 13-03-2023, Published Online: 08-03-2024

3. Multivariate analysis

Table 3. Results of Multivariate Analysis.

Variable	Model 1 PR (CI 95%)	Model 2 PR (CI 95%)	Model 3 PR (CI 95%)
Education			
No education	5.3	1.7	5.2
Elementary School	(2.351-20.868)	(1.834-3.566)	(2.344-20.804)
Intermediate			
High			
Age of first sex			
<15 years	5.1		5.3
15-19 years	(2.279-11.680)		(2.334-12.051)
>19 years			
Use of contraceptives			
Use		1.7	1.9
Do not use		(1.089-2.731)	(1.085-03.482)
R^2	0.592	0.139	0.597
N	806	806	806

Research conducted by Morell and Martín (2018) confirms that fertility is influenced by two factors, namely demographic factors including age, age at first marriage, length of marriage, parity or number of births experienced and the proportion of marriages, and non-demographic factors, namely education level, improvement in women's status, urbanization and industrialization.

Based on Table 3 it can be seen that the results of statistical analysis using logistic regression obtained three models. Model 1 was made to predict the relationship between the variables of education and age at first sex with teenage births. The R^2 value is 0.592, which means that the education level and age of the respondent's first sex contributed 59.2% to teenage births, while the remaining 40.8% was caused by variables other than age and education level.

Logistic regression analysis carried out in model 2 is an analysis that predicts the relationship between education and use of contraceptives with teenage births with an R^2 value of 0.139. This indicates that education and use of contraceptives contribute 13.9% to teenage births, and the remaining 86.1% is caused by other variables.

Logistic regression analysis performed on model 3 was used to analyze the relationship between education, age at first sex, use of contraception, and the number of children with teenage births to obtain an R^2 value of 0.597. These results indicate that age, education, age at first sex, and use of contraceptives contribute to teenage births by 59.7%, while the remaining 40.3% is caused by other variables.

Early and unwanted pregnancy among adolescents is associated with several aspects, namely in the health, education, social and economic sectors. Early childbirth is risky for girls and research shows that early pregnancy is the second leading cause of death among girls in developing countries. Teenage pregnancy also disrupts girls' schooling, jeopardizing their future economic opportunities, including reducing labor market opportunities. The effects of teenage childbearing also impact the health of their babies with evidence of higher perinatal mortality and lower birth weight among babies born to mothers under the age of 20 (Ganchimeg et al., 2014).

A large number of adolescents are sexually active and this continues to increase from mid to late adolescence. Adolescents who are sexually active, both married and unmarried, need contraception. All adolescents in developing countries - especially those who are not married, face a number of obstacles in obtaining contraception and using it correctly and consistently. Effective interventions to increase access to and use of contraception are policies that require the provision of sexuality education and contraceptive services for adolescents; building

Received: 01-12-2022, Accepted: 13-03-2023, Published Online: 08-03-2024

community support for the provision of contraception for adolescents, providing sexuality education inside and outside the school environment, and increasing access to and use of contraception by making health services youth-friendly, integrating contraception services with other health services, and providing contraception through various outlets (Chandra-Mouli et al., 2014).

Another study identified that the birth of adolescents is influenced by several factors, namely socio-cultural, environmental and economic factors (peer influence, coercive sexual relations, gender inequality, poverty, religion, early marriage, lack of parental guidance, lack of comprehensive sexuality education, lack of using contraception). Individual factors (excessive alcohol use, substance abuse, educational status, low self-esteem, and inability to resist sexual temptation, curiosity, and cell phone use). Factors related to health services include cost of contraceptives, inadequate and unskilled health workers, long waiting times and lack of privacy in clinics, misunderstandings about contraception, and unfriendly adolescent reproductive services (Yakubu and Salisu, 2018).

CONCLUSION

The results showed that there was a significant relationship between, education, age at first sex, contraception, and the number of children born to teenagers ($p<0.01$). Meanwhile, the variables of employment status and area of residence did not have a significant relationship with teenage births ($p>0.05$). Based on logistic regression analysis, an R2 value of 0.608 was obtained, which means that age, education, age at first sex, use of contraception, and the number of children contributed 60.2% to teenage births, and the remaining 39.8% was caused by other variables.

From a policy perspective, the government needs to work with various non-governmental organizations to develop a sexual education program that will educate adolescents about responsible and healthy attitudes toward sexuality especially about necessity, delaying the age at first having sex, preventing youth marriage, and increasing secondary school enrollment among adolescent girls is a recommended strategy for controlling adolescent fertility as a means of addressing factors associated with adolescent birth.

REFERENCES

Amongin, D. *et al*. (2020) 'Time trends in and factors associated with repeat adolescent birth in Uganda: Analysis of six demographic and health surveys', *PLoS ONE*, 15(4), pp. 1–14. doi: 10.1371/journal.pone.0231557.

Aslam, R. W. *et al*. (2017) 'Intervention Now to Eliminate Repeat Unintended Pregnancy in Teenagers (INTERUPT): A systematic review of intervention effectiveness and cost-effectiveness, and qualitative and realist synthesis of implementation factors and user engagement', *BMC Medicine*, 15(1), pp. 1–13. doi: 10.1186/s12916-017-0904-7.

BKKBN *et al*. (2018) 'Survei Demografi dan Kesehatan Indonesia 2017 Provinsi DKI Jakarta', *SDKI 2017*, p. 271.

BPS (2020) 'Prevention of Child Marriage Acceleration that Cannot Wait', p. 71.

Burke, H. M. *et al*. (2018) 'Correlates of rapid repeat pregnancy among adolescents and young women in Uganda', *International Perspectives on Sexual and Reproductive Health*, 44(1), pp. 11–18. doi: 10.1363/44e5518.

Chandra-Mouli, V. *et al*. (2014) 'Contraception for adolescents: Social, clinical and service delivery considerations Contraception for adolescents in low and middle income countries: needs , barriers , and access', *Reproductive Health*, 11(1), pp. 1–8.

Chung, H. W., Kim, E. M. and Lee, J. E. (2018) 'Comprehensive understanding of risk and protective factors related to adolescent pregnancy in low- and middle-income countries: A systematic review', *Journal of Adolescence*, 69(March), pp. 180–188. doi: 10.1016/j.adolescence.2018.10.007.

Cinar, N. and Menekse, D. (2017) 'Affects of Adolescent Pregnancy on Health of Baby-Open Journal of Pediatrics & Neonatal Care', *Open Journal of Pediatrics & Neonatal Care*, 2(February 2017), pp. 23–28.

Dargaso Dana, D. (2018) 'Binary Logistic Regression Analysis of Identifying Demographic, Socioeconomic, and Cultural Factors that Affect Fertility Among Women

Received: 01-12-2022, Accepted: 13-03-2023, Published Online: 08-03-2024

of Child bearing Age in Ethiopia', *Science Journal of Applied Mathematics and Statistics*, 6(3), p. 65. doi: 10.11648/j.sjams.20180603.11.

Eyasu, A. M. (2016) 'Determinants of Adolescent Fertility among Rural Women of Ethiopia', *Open Access Library Journal*, 03(03), pp. 1–9. doi: 10.4236/oalib.1102422.

Ganchimeg, T. *et al*. (2014) 'Pregnancy and childbirth outcomes among adolescent mothers: a World Health Organization multicountry study.', *BJOG : an international journal of obstetrics and gynaecology*, 121 Suppl, pp. 40–48. doi: 10.1111/1471-0528.12630.

Kassa, G. M. *et al*. (2019) 'Trends and determinants of teenage childbearing in Ethiopia: Evidence from the 2000 to 2016 demographic and health surveys', *Italian Journal of Pediatrics*, 45(1), pp. 1–13. doi: 10.1186/s13052-019-0745-4.

Khalenya, M. A., Akoya, K. A. and Ndiguitha, W. S. (2018) 'Socio-demographic and economic factors influencing adolescent fertility in urban Kenya', *International Journal of Academic Research and Development*, 3(6), pp. 98–104.

Korenčan, S. *et al*. (2017) 'The outcomes of pregnancy and childbirth in adolescents in Slovenia', *Zdr Varst*, 56(4), pp. 268–275. doi: 10.1515/sjph-2017-0036.

Laelago, T., Habtu, Y. and Yohannes, S. (2014) 'Proximate determinants of fertility in Amhara Region, Ethiopia: an application of the Bongaarts model', *Background Report*, (8), p. [6] p. doi: 10.1186/s12978-019-0677-x.

Larasati, D. A., Nindya, T. S. and Arief, Y. S. (2018) 'Hubungan antara Kehamilan Remaja dan Riwayat Pemberian ASI Dengan Kejadian Stunting pada Balita di Wilayah Kerja Puskesmas Pujon Kabupaten Malang', *Amerta Nutrition*, 2(4), p. 392. doi: 10.20473/amnt.v2i4.2018.392-401.

Mahendra, A. (2017) 'Analisis Faktor yang Mempengaruhi Fertilitas di Indonesia', *JRAK*, 3(2), pp. 223–242.

Maravilla, J. C., Betts, K. S. and Alati, R. (2019) 'Increased risk of maternal complications from repeat pregnancy among adolescent women', *International Journal of Gynecology and Obstetrics*, 145(1), pp. 54–61. doi: 10.1002/ijgo.12776.

Mathenge Mutwiri, R. (2019) 'An Analysis of the Determinants of Fertility Differentials Amongst the Poorest Women Population in Kenya', *International Journal of Statistical Distributions and Applications*, 5(3), p. 60. doi: 10.11648/j.ijsd.20190503.13.

Monari, N., Orwa, J. and Agwanda, A. (2022) 'Adolescent fertility and its determinants in Kenya: Evidence from Kenya demographic and health survey 2014', *PLoS ONE*, 17(1 January), pp. 1–14. doi: 10.1371/journal.pone.0262016.

Morell, F. C. and Martín, M. J. R. (2018) 'Expectativas de parto de las gestantes de La Ribera: Una aproximación cualitativa', *Enfermeria Global*, 17(1), pp. 324–335. doi: 10.6018/eglobal.16.4.276061.

Musa Abdullahi, A. U. (2013) 'Consequences of Pre-Marital Sex among the Youth a Study of University of Maiduguri', *IOSR Journal of Humanities and Social Science*, 10(1), pp. 10–17. doi: 10.9790/0837-01011017.

Ndahindwa, V. *et al*. (2014) 'Determinants of fertility in Rwanda in the context of a fertility transition: A secondary analysis of the 2010 Demographic and Health Survey', *Reproductive Health*, 11(1), pp. 1–9. doi: 10.1186/1742-4755-11-87.

Neal, S. *et al*. (2012) 'Childbearing in adolescents aged 12-15 years in low resource countries: A neglected issue. New estimates from demographic and household surveys in 42 countries', *Acta Obstetricia et Gynecologica Scandinavica*, 91(9), pp. 1114–1118. doi: 10.1111/j.1600-0412.2012.01467.x.

Neal, S. E., Chandra-Mouli, V. and Chou, D. (2015) 'Adolescent first births in East Africa: Disaggregating characteristics, trends and determinants Adolescent Health', *Reproductive Health*, 12(1), pp. 1–13. doi: 10.1186/1742-4755-12-13.

Nyarko, S. H. (2012) 'Determinants of Adolescent Fertility in Ghana', *International Journal of Sciences: Basic and Applied Research (IJSBAR) ISSN*, 5(1), pp. 21–32. doi: 10.4314/ejhd.v24i1.62942.

Oljira, L., Berhane, Y. and Worku, A. (2012) 'Pre-marital sexual debut and its associated factors among in-school adolescents in Eastern Ethiopia', *BMC Public Health*, 12(1). doi: 10.1186/1471-2458-12-375.

Pinto e Silva, J. L. and Surita, F. G. (2017) 'Pregnancy in Adolescence - A Challenge Beyond Public Health Policies', *Revista Brasileira de Ginecologia e Obstetricia*, 39(2), pp. 41–43. doi: 10.1055/s-0037-1600899.

Sinaga, L. and Prihanto, P. H. (2017)

Received: 01-12-2022, Accepted: 13-03-2023, Published Online: 08-03-2024

'Faktor-faktor yang mempengaruhi tingkat fertilitas di perdesaan (Studi pada Desa Pelayangan Kecamatan Muara Tembesi Kabupaten Batanghari)', *Jurnal Paradigma Ekonomi*, 12(1), pp. 41–48.

Smith, V. (2014) 'Education for contraceptive use by women after childbirth', *Practising Midwife*, 17(7), pp. 39–41. doi: 10.1002/14651858.cd001863.pub3.

Socolov, D. G. *et al*. (2017) 'Pregnancy during Adolescence and Associated Risks: An 8-Year Hospital-Based Cohort Study (2007-2014) in Romania, the Country with the Highest Rate of Teenage Pregnancy in Europe', *BioMed Research International*, 2017. doi: 10.1155/2017/9205016.

UNICEF (2014) *Violence Against Children in East Asia and the Pacific: A Regional Review and Synthesis of Findings*.

Wado, Y. D., Sully, E. A. and Mumah, J. N. (2019) 'Pregnancy and early motherhood among adolescents in five East African countries: A multi-level analysis of risk and protective factors', *BMC Pregnancy and Childbirth*, 19(1), pp. 1–11. doi: 10.1186/s12884-019-2204-z.

Wall-Wieler, E., Roos, L. L. and Nickel, N. C. (2016) 'Teenage pregnancy: The impact of maternal adolescent childbearing and older sister's teenage pregnancy on a younger sister', *BMC Pregnancy and Childbirth*, 16(1), pp. 1–12. doi: 10.1186/s12884-016-0911-2.

WHO (2020a) 'Adolescent pregnancy fact sheet', *Adolescent Pregnancy Fact Sheet*, p. 1.

WHO (2020b) *Sexual, Reproductive, Maternal, Newborn, Child, and Adolescent Health Policy Survey 2018-2019*, *World Health Organization*.

Yakubu, I. and Salisu, W. J. (2018) 'Determinants of adolescent pregnancy in sub-Saharan Africa: A systematic review', *Reproductive Health*, 15(1). doi: 10.1186/s12978-018-0460-4.

Yunita, A. (2014) 'Faktor-faktor yang berhubungan dengan kejadian pernikahan usia muda pada remaja putri di desa pagerejo kabupaten wonosobo', pp. 1–2.

Zhang, X. and Lu, H. (2014) 'Childbirth expectations and correlates at the final stage of pregnancy in Chinese expectant parents', *International Journal of Nursing Sciences*, 1(2), pp. 151–156. doi: 10.1016/j.ijnss.2014.05.019.

Received: 01-12-2022, Accepted: 13-03-2023, Published Online: 08-03-2024