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DETERMINANT OF UNWANTED PREGNANCY IN INDONESIA 2017 (A SECONDARY DATA ANALYSIS OF 2017 IDHS)

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ABSTRACT

Background: The unwanted pregnancy will cause some problems, not only increasing the population but also affecting reproductive health among woman. The unwanted pregnancy can cause miscarriage or abortion, obstructed labour, bleeding and maternal mortality. Based on 2017 Indonesian Demographic and Health Survey (IDHS), the prevalence of unwanted pregnancy is 14% from total pregnancy. This number is increasing compare with Riskesdas in 2013 there was 5.8% unwanted pregnancy. This study aims to examine the determinant of unwanted pregnancy in Indonesia.

Methods: This study was a cross sectional design used secondary data analysis of 2017 IDHS. The sample of this study was woman who had aged 15-49 years old and had been pregnant in (...). Totally, 1,997 respondents were recruited in this study. The data was analyzed in univariate and bivariate analysis used Chi-square. Logistic regression analysis was used to analyzed in multivariate.

Results: The prevalence of woman who had unwanted pregnancy was 12.8% from total pregnancy. Bivariate analysis showed aged less than 20 years old and more than 35 years old, lived in rural area and had more than 3 children associated with having unwanted pregnancy. Multivariate analysis showed that respondents who had age less than 20 and more than 35 years old ($p=0.0001$; $OR= 1.826$) more likely had unwanted pregnancy.

Conclusion: This study showed that woman who had risky reproductive aged, lived in rural area and had children more than 3 were statistically significant with unwanted pregnancy. The risky reproductive aged was the most influenced factor for having unwanted pregnancy. So that, the government must support the National Population and Family Planning Board to promote the use of contraceptive among woman in reproductive aged especially in the risky reproductive aged.

Keywords: Determinant, Unwanted Pregnancy, IDHS

INTRODUCTION

Nowadays, the number of unwanted pregnancy keeps increasing. In general, it can have an impact on population expansion. In a specific circle, it might cause several reproductive health problems, such as miscarriages or abortions, obstacles in baby delivery, bleeding, and maternal mortality. Maternal Mortality Ratio (MMR) is one of the important indicators in assessing health status. Based on 2017 WHO data, the number of world's maternal mortalities amounted to 303,000 people, clustered into several countries, including North Africa with a total of 3,100 mortalities, Sub-Saharan Africa with 201,000 mortalities, East

Asia with 4,800 mortalities, South Asia with 66,000 mortalities, Southeast Asia with 13,000 mortalities, West Asia with 4,700 mortalities, Central Asia with 610 mortalities, Latin America with 7,300 mortalities, and last Oceania with 2,490 mortalities. In 2017, the maternal mortality ratio amounted to 170 per 100,000 live births in developed countries. Meanwhile, the maternal mortality ratio in developing countries reached 302 per 100,000 live births, it means developing countries account for 99% of maternal mortalities globally [1]. In 2017, Indonesia as one of the developing countries ranked the second highest in maternal mortality ratio in Southeast Asia, reaching 305 mortalities per 100,000 live births after Laos with a maternal mortality ratio of 357 mortalities per 100,000 live births. The maternal mortality ratio that still high in Indonesia is related to pregnancy problems [2].

Globally, there are 208 million pregnancy annually. Approximately 185 million global pregnancy occur in developing countries where 86 million pregnancy (41%) are unwanted pregnancy [1]. The unwanted pregnancy is a pregnancy that occurs when someone does not want a child at that time, and it is highly unexpected. The unwanted pregnancy often becomes the reason for someone having an abortion. According to the study, 33 million unwanted pregnancy end up in unplanned births, spontaneous abortion (11 million), and abortion (41 million). The unwanted pregnancy in developing countries (29%) is higher than that in developed countries (20%) [2].

The highest prevalence of unwanted pregnancy in the world is in Asia (54%), followed by Africa (22.5%), Latin America (11.8%) and Europe (7.5%). From various regions in Asia, the region with the highest incidence of unwanted pregnancy is South Central Asia (23.7%), followed by Eastern Asia (16.1%), Southeastern Asia (9.8%) and Western Asia (4.1%) [3]. Almost half of the unwanted pregnancy end in unsafe abortion and abortion is one of seven causes of maternal mortality globally [2]. Based on the Indonesian Demographic and Health Survey (IDHS) data, the prevalence of unwanted pregnancy in Indonesia in 2017 reached 14%. This number is greater than the one recorded in the 2013 Basic Health Research (Riskesdas) data, which was only 5.8%. Thus, these data indicate an increase in the prevalence of unwanted pregnancy by 8.2% in 2017. Annually, unwanted pregnancy can cause 700,000 maternal mortalities [4].

Moreover, the incidence of unwanted pregnancy is related to various aspects, such as the socio-demographic conditions of the family, culture, and beliefs that exist in the community. There are several government programs in reproductive health, namely family planning, and reproductive health programs. The failure of those programs is estimated to be one of the triggers of unwanted pregnancy. Research shows that women with unwanted pregnancy tend to have fewer antenatal care visits, which will affect the mother and the fetus [2].

Several studies describe the factors related to unwanted pregnancy, such as age at pregnant, education, couples living together, marital status, socioeconomic status, parity, number of living children, pregnancy complications, and contraceptive use. The same fact was found in Abdallah's study, which finds that women with low education (13.4%) are more likely to experience an unwanted pregnancy than the desired pregnancy (4.1%). Women from low-income families experience more unwanted pregnancy (15.9%) compared to the desired pregnancy (4.1%) [5]. Gipson JD's study suggests that women under the age of 20 years old have 2.7 times higher risk of having unwanted pregnancy and women over the age of 35 years old have 2.3 times higher risk of unwanted pregnancy [6]. Besides, a study conducted by Ramesh Adikari finds that the mother's age of the mother, age at first marriage, and parity are correlated to the incidence of unwanted pregnancy [7]. Furthermore, Palamuleni (2014) also mentioned that high parity is correlated with unwanted pregnancy [8].

Married women experience the highest prevalence of unwanted pregnancy in Indonesia. Especially, Women who are pregnant at the age of and over 35 years old can be considered to have a high risk. When someone is too old and pregnant, the uterine organ will age, causing congestion and bleeding and will endanger the safety of both the mother and the fetus. Meanwhile, if the pregnant woman is under 20 years old, the pregnancy will make her hysterical because she is still too young. Women's reproductive organs are not ready to have children at that age. If there is pregnancy at that age period, there will be a risk of high blood pressure and cervical cancer. Besides, too young pregnant women tend to have the intention to commit abortion. Abortion practices can cause maternal mortality. In addition, unwanted pregnancy can be caused by the lack of knowledge about contraception, having too many children, areas of residence, health reasons, a disabled fetus, and unstable relationships with partners. Thus, the determinants of unwanted pregnancy must be identified as one of the steps to reduce the risk of unwanted pregnancy in Indonesia.

METHODS

The univariate analysis was utilized to determine the frequency distribution of each variable. The bivariate analysis employed the *Chi-Square test* to find the candidates to be included in the multivariate analysis. The variables to include into a multivariate analysis were those at the bivariate selection with the p-value of ≤ 0.25 . Therefore, if the p-value was more than 0.25, it could not be included in multivariate analysis.

The multivariate analysis uses logistic regression test to predict the most significantly related variables. Based on the theory, there are "two models for multivariate analysis" namely "prediction model and risk factor model." In this study, the multivariate analysis used "the prediction model" because it was in accordance with the study title, namely to identify the determinants of unwanted pregnancy to predict the most significantly related variables. The first step in the "prediction model" select the variables that can be included in multivariate analysis, i.e., those with the p-value of ≤ 0.25 . If p-value of more than 0.25 (> 0.25) could not be included in the multivariate analysis. After completing the bivariate selection. These variables are referred to as the confounding variables.

RESULTS

Univariate Analysis

Based on Table 1. The analysis report of distribution frequency indicated less than half of Indonesian women (12.8%) with unwanted pregnancy. More than half of Indonesian women (78.3%) were 20 to 35 years old. Almost all Indonesian women (94.7%) had the parity of 0-3 children with the number of living children from 0-3 children (95.5%). A little over half of the women in Indonesia got married after the age of 20 years (59.8%). Approximately half of the Indonesian women (50.5%) lived in rural areas. The majority of Indonesia women (79%) reached high education. More than half of Indonesian women (56.5%) had the economy status above the average, whereas more than half of them were unemployed (59.2%).

Table 1. Univariate Analysis of Distribution of Respondents

Variable	N	%
Unwanted Pregnancy		
No Unwanted Pregnancy	1742	87.2
Yes Unwanted Pregnancy	255	12.8
Areas of Residence		
Rural	1008	50.5
Urban	989	49.5
Current age		
20-35 Years	1564	78.3
<20 Years or >35Years	433	21.7
Educational level		
High Education	1578	79
Low Education	419	21
Economic Level		
High Economic	1129	56.5
Low Economic	868	43.5
Parity		
0-3 Children	1892	94.7
>3 Children	105	5.3
Employment Status		
Not working	1182	59.2
Currently Working	815	40.8
Number of living children		
0-3 Children	1907	95.5
>3 Children	90	4.5
Age at First Marriage		
≥ 20 Years	1194	59.8
<20 Years	803	40.2
Total	1997	100

Bivariate Analysis

Bivariate analysis is used to analyze the relationship of each variable. The variables which analyzed in the study are the independent variables which consist of areas of residence, current age, economic level, education level, parity, employment status, number of living children and first marriage at the age with the dependent variable is unwanted pregnancy.

Table 2 Bivariate Analysis of Independent Variable Relationships with Unwanted Pregnancy in Indonesia 2017

Independent Variable	No Unwanted Pregnancy		Yes Unwanted Prgenancy		P-Value	OR 95% CI
	n	%	n	%		
Areas of Residence						
Rural	897	89	111	11	0.021	1.377 (1.527-1.795)
Urban	845	85.4	144	14.6		
Current Age						
20-35 Years	1397	89.3	167	10.7	0.0001	2.134 (1.607-2.834)
<20 Years or >35 Years	345	79.7	88	20.3		
Education level						
High Education	1377	87.3	201	12.7	1.000	1.014 (0.735-1.398)
Low Education	365	87.1	54	12.9		
Economic Level						
High Economic	987	87.4	142	12.6	0.822	1.040 (0.798-1.355)
Low Economic	755	87	113	13		
Parity						
0-3 Children	1670	88.3	222	11.7	0.0001	3.448 (2.231-5.328)
>3 Children	72	68.6	33	31.4		
Employment Status						
Not Working	1024	86.6	158	13.4	0.370	0.876 (0.668-1.147)
Currently Working	718	88.1	97	11.9		
Number of Living Children						
0-3Children	1680	88.1	227	11.9	0.0001	3.342 (2.095-5.333)
>3 Achildren	62	68.9	28	31.1		
Age at First Marriage						
≥ 20 Years	1059	88.7	135	11.3	0.020	1.378 (1.058-1.795)
<20 Years	683	85.1	120	14.9		

Based on Table 2 Bivariate analysis results showed that women who are pregnant at the age of <20 Years or >35 Years (p=0.0001; OR= 2.134), who settled in rural areas (p= 0.021; OR= 1.377) and women with parity of more than three children (p = 0.0001; OR=3.44), women with number of living children of more than three children (p = 0.0001; OR=3.342), age at first marriage under 20 years old (p = 0.020; OR=1.378) were more likely to have an unwanted pregnancy. There are no related between economic level, education level and employment status with unwanted pregnancy because p-value >0.05. The Odds Ratio (OR) value of the current age variable reached 2.134 (95% CI: 1.607-2.834) where the age group of <20 or >35 years old women risked 2.1 times of experiencing unwanted pregnancy compared to those in the age group of 20-35 years old. The Odds Ratio (OR) value of the parity variable amounted to 3.448 (95% CI: 2.231-5.328) which means that women with parity of more than three children would risk 3.4 times higher of having unwanted pregnancy compared to those with parity of 0-3 children. The Odds Ratio (OR) value of the residential area variable reached 1.377 (95% CI: 1.527-1.795), where women who lived

in urban areas risked 1.3 higher in having unwanted pregnancy compared to those living in rural areas. The Odds Ratio (OR) value of the number of living children variable reached 3.342 (95% CI: 2.095-5.333). This finding means that women who have a total of more than three children risked 3.3 times of experiencing unwanted pregnancy compared to those with 0-3 children. The Odds Ratio (OR) value of the age at first marriage variable amounted to 1.378 (95% CI: 1.058-1.795), This finding means that those who had their first marriage at the age of under 20 years old risked 1.3 times of experiencing unwanted pregnancy compared to those who had their first marriage at the age of over 20 years old.

Multivariate Analysis

In this study, the multivariate analysis used “the prediction model” because it was in accordance with the study title, namely to identify the determinant of unwanted pregnancy to predict the most significantly related variables.

Table 3. Independent Variables of Results Bivariate Selection

Variabel Independen	<i>p-value</i>	Information
1. Areas of Residence	0.021	Enter the Multivariate
2. Current Age	0.0001	Enter the Multivariate
3. Parity	0.0001	Enter the Multivariate
4. Number of living children	0.0001	Enter the Multivariate
5. Age at First Marriage	0.020	Enter the Multivariate
6. Education level	1.000	Not Enter the Multivariate
7. Economic Level	0.822	Not Enter the Multivariate
8. Employment Status	0.370	Not Enter the Multivariate

Table 4. Final Results of Multivariate Analysis

Variabel Independen	<i>p-value</i>	OR	95% CI
1. Areas of Residence	0.002	1.279	1.166- 2.016
2. Current Age	0.0001	1.826	1.354– 2.462
3. Parity	0.016	1.213	1.285 -11.915
4. Number of living children	0.556	0.698	0.211 -2.309
5. Age at First Marriage	0.079	1.279	0.971 – 1.684

Based on Table 4 on Multivariate Analysis, it was found that the variables that were significantly related to unwanted pregnancy included age, areas of residence, and parity. On the other hand, the variables of live births and the age at first marriage were included as the confounding variables because the change in their Odds Ratio (OR) values were more than 10%. The most dominant variable associated with

unwanted pregnancy was the age. The analysis results found the p-value of 0.0001 and Odds Ratio (OR) of 1.826 (1.354 - 2.462) for the variable of age. These findings mean that women in the age group below 20 or over 35 years old risked 1.8 times of experiencing unwanted pregnancy compared to those in the age group of 20-35 years old, after being controlled by variables of areas of residence, parity, the number of living children, and age at first marriage.

DISCUSSION

Research Limitations

There are several limitations in this study. The variables and the quality control were limited. The data used in this study was the secondary data from the 2017 Indonesian Demography and Health Survey. Therefore the variables used in this study were limited to the variables available in the IDHS Data. The obtained variables were adjusted to the existing data because not all data required by the researchers were available. Several variables related to unwanted pregnancy such as the mother's behavior during pregnancy and after birth were not included.

Unwanted Pregnancy

The unwanted pregnancy in this study is the pregnancy that occurs when someone does not want a child at that time. The results of the univariate analysis showed that 12.8% of women in Indonesia experienced unwanted pregnancy in 2017. The unwanted pregnancy in this study (12.8%) were higher compared to the figure found in the Basic Health Research (Riskesdas) data 2013, which was only 5.8% [10].

The areas of residence variable were significantly associated with an unwanted pregnancy. This is in line with the research conducted in Bangladesh, where unwanted pregnancy were more prevalent among women living in urban areas than those living in rural areas. This notion is supported by Afifah's research, which states that women in urban areas are at risk of experiencing unwanted pregnancy compared to those in rural areas. More women in urban areas work who then tends to limit the number of their children. This reason can strengthen the reasons for women who live in urban areas to say that their pregnancy is unwanted. The level of urbanization in Indonesia grows rapidly. Currently, there are about half of Indonesia's population living in cities. The percentage of the population in urban areas increased from 42.1 percent in 2000 to 49.8 percent in 2010 [11].

Rapid population growth in urban areas also results in a lot of unemployment, which can increase the risk of unwanted pregnancy. Research conducted in Nairobi, Kenya shows that high population levels will result in poor urban areas. The population living in these poor urban areas will be more prone to unsafe sexual behavior [12]. Research conducted in New York, United States found that unwanted pregnancy are higher in poor urban areas because the poverty and unemployment rates in these areas are still high, which increases unwanted pregnancy [13,14]. In poor urban areas, it is also more difficult to get access to education and reproductive health information such as contraception and the prevention of unwanted pregnancy [15].

The current age is significantly related to unwanted pregnancy. This finding is in line with the research conducted by Adikari, stating that there is a correlation between age and unwanted pregnancy in Indonesia with a p-value of 0.0001 [7]. In addition, this finding is in line with the research conducted by Qurniyawati, which describes that there is a correlation between age and unwanted pregnancy [15]. These findings support the idea that the best age for women's reproduction organs to have children is between the age of 20 and 35 years old. As stated by the Ministry of Health (1999) and Hartanto, the age under 20 years

old is too young to have children, especially viewed from a health perspective, maternal readiness, and from other aspects. At that age, women are expected to delay their pregnancy.

Age is one of the factors that cause unwanted pregnancy, especially on women who are too young or too old, not ready, and do not wish for pregnancy. Globally, pregnancy on women under 20 years old will injure the mother because she is psychologically not ready for pregnancy. Although the reproductive organs have matured at that age, a mother may not want to have offspring yet, so she refuses the pregnancy. On women over 35 years old, maternal health has usually decreased. As an impact, women who get pregnant at that age are most likely at risk to give birth to children with disabilities or to have prolonged labor and bleeding. At that period, the mother may become infertile due to being too old [16,17]. In addition, pregnancy at too early or too late age span can cause discomfort to women, resulting in intentional abortion, which can threaten the women's health.

The age of 20-35 years is the safest age for pregnancy for women because starting at the age of 20 years old, the uterus and other body parts are ready to accept the pregnancy and the women feel ready to become mothers. Meanwhile, the age of more than 35 years is considered overage for pregnancy and may affect the mother's fertility. Based on the description above, being too young or too old is one of the causes of high-risk pregnancy, which results in an unwanted pregnancy.

Parity is a significant aspect associated with an unwanted pregnancy. This notion is in line with other studies on the correlation between parity and unwanted pregnancy, where the higher the parity is the higher the risk of having unwanted pregnancy [6,18,19]. Moreover, also in line with Saptarini's research, there is a correlation between parity and unwanted pregnancy with a p-value of 0.001. However, this study is different from the research conducted by Ndziessi, stating that there is no significant correlation between parity and unwanted pregnancy with a p-value of 0.09. According to Saptarini, the more children a woman has, the higher the likelihood of her to have unwanted pregnancy [20]. This fact is due to that fact that women who have high parity may feel enough of having children. Sexual activity is only to fulfill pleasure rather than for having children.

Women with many children but are still pregnant with an unwanted pregnancy may be caused by unfulfilled contraceptive need or because of contraceptive failure. Women who have given birth to many children also feel that the number of children has reached the ideal number. By having another pregnancy, these women may experience a greater chance of unwanted pregnancy. The government has promoted the two-children program. With this program, it is expected that people will become more aware of the importance of children in the family so that the incidence of unwanted pregnancy can also decrease because unwanted pregnancy prevention promotions are also present in this program

The variable number of living children is a significant trend associated with an unwanted pregnancy. This fact is in line with the research conducted by Qurniyawati in Madiun City, stating that there is a correlation between the number of living children and unwanted pregnancy with a p-value of 0.032. The close correlation between these two variables reached OR value of 4.58 (95% CI = 1.14-18.39), meaning that women with more than two children are at risk 4.58 times for having unwanted pregnancy compared to women with less than three children [15]. However, from the multivariate analysis, the variable number of living children is a confounding variable with a p-value of 0.556 and OR value of 0.698 (95% CI: 0.211-2.309)

The age at first marriage variable is significantly associated with an unwanted pregnancy. This notion is in line with the research conducted by Nasab stating that there is a correlation between the age of the first cohabitation and unwanted pregnancy [21] According to the Maturity of Marriage Age, the

minimum age marriage for women is 20 years. The concept aims for the first pregnancy to occur at a fairly mature age. This Maturity of Marriage concept is motivated by the increasing number of cases of early marriage and unwanted pregnancy that increase the population with low quality. A pregnancy that occurs at an early age of under 20 years makes women psychologically not ready to get pregnant. At that period, the mother may not want to have offspring, so she refuses the pregnancy [17,22]. However, the multivariate analysis of the age at first marriage variable is a confounding variable with a p-value of 0.079 and OR value of 1.279 (95% CI: 0.971-1.684)

CONCLUSION

Based on the description above, it can be concluded that the results obtained from the final model of multivariate analysis that the variables significantly related to unwanted pregnancy were current age, areas of residence, and parity. On the other hand, the variables number of living children and age at first marriage were considered as the confounding variables. The most dominant variable associated with unwanted pregnancy was the current age with the Odds Ratio (OR) value of 1.826 (1.354 - 2.462). This finding means that the women in the age group of <20 or >35 years old risked 2.1 times higher from experiencing unwanted pregnancy compared to women in the age group of 20-35 years old after being controlled by the variables of residence, parity, total children living and the first age of marriage.

The program organizers, especially the personnel in the “National Population and Family Planning Board” and other health departments, are recommended to increase their efforts in providing counseling to manage and plan the pregnancy, so the increase of unwanted pregnancy can be prevented. In addition, the health education related to reproductive health has to be improved. This health counseling should be conducted through the proper approach of taking the initiative to visit the houses of pregnant women, mothers after childbirth, and nursing mothers. Moreover, it is also necessary to disseminate information about all safe contraceptive methods to prevent the risk of unwanted pregnancy as well as to provide knowledge regarding the risk of pregnancy under 4-T conditions (too old, too young, too many, too often).

CONFLICT OF INTERESTS

The authors declare that there is no conflict of interest regarding the publication of this study

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