Factors Influencing Unintended Pregnancies among Childbearing Age Women in Indonesia

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Research article

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Abstract

Background: Unintended pregnancy can cause pregnancy termination, which leads to safety risks. The purpose of the study was to analyze the factors that influence unintended pregnancies in Indonesia.

Methods: The analysis unit was women aged 15-49 years old who gave birth to the last 5 years. The sample size was 36,472 women. In addition to unintended pregnancy as the dependent variable, other variables analyzed were the place of residence, age, education, husband/partner, employment, wealth, parity, pregnancy termination, the person deciding woman's access to health care, heard about family planning messages on radio, television, and newspaper/magazines. The final stage analysis uses binary logistic regression.

Results: Women in urban areas were 1.834 times more likely than women in rural areas to experience an unintended pregnancy. The 20-24 age group was 0.202 times more than the 15-19, while the 45-49 was 1.916 times compared to the 15-19 to experience an unintended pregnancy. Secondary education women were 1.447 times more likely than no education women, while the poorer women were 1.190 times more likely than the poorest women to experience an unintended pregnancy. Parity was found to be a strong determinant of unintended pregnancy. History of pregnancy, decision making by husband/partner, and heard about family planning messages on radio and television in the last few months are risk factors for unintended pregnancy.

Conclusions: Eight variables affect unintended pregnancy, namely age, education, wealth, parity, pregnancy termination, the person deciding woman's access to health care, and heard about family planning messages on radio and television.

Background

Unintended pregnancy can lead to pregnancy termination. Unintended pregnancy increases the risk of safety, which can end in death ¹. It is estimated that every year there are 85 million women in the world facing unintended pregnancy ². While the United Nations launched a WHO report stating that the major public health problems of unplanned pregnancies globally in low and middle-income countries are on such a scale that 74 million women have unintended pregnancies each year. This condition causes about 25 million unsafe abortions. It further contributes to 47,000 maternal deaths each year ³.

The WHO report states that between 2010–2014, every year around the world an average of 56 million induced abortions, both safe and unsafe. Of these, there were 35 abortions induced per 1000 women aged between 15–44 years. 25% of all pregnancies end in induced abortion. Abortion rates are higher in developing countries than in developed countries. An estimated 25 million unsafe abortions take place worldwide each year. WHO states that almost all unsafe abortions exist in developing countries ⁴.

In Indonesia, a previous study analyzing the 2012 Indonesian Demographic and Health Survey informed that the prevalence of women experiencing unintended pregnancy in Indonesia was 8%. The highest

prevalence is in the province of Central Sulawesi (11.9%) and the lowest in Papua (2.9%). The bivariate analysis found a significant relationship between economic level, education level, place of residence, marital status, parity, birth distance, and age, with an unintended pregnancy. In multivariate analysis, the researchers concluded that marital status was the most dominant factor related to unintended pregnancy⁵. Another study conducted in nine major cities in Indonesia informed that there were around 37,000 unintended pregnancies. Of this 27% are unmarried couples. While 12.5% are junior/senior high school students⁶.

Studying unintended pregnancy is felt to be very important for the safety of women in Indonesia. Information on the results of this study provides clear and targeted goals for policymakers to maximize efforts to prevent unsafe abortion due to unintended pregnancy in women. Based on the background, the study aimed to analyze the factors that influence unintended pregnancies among childbearing age women in Indonesia.

Methods

Data Source

The study utilizes the 2017 Indonesian Demographic Data Survey (IDHS) as an analysis material. The unit of analysis in this study was women aged 15–49 years old who had given birth in the last 5 years. The sample size of 36,472 respondents.

Data Analysis

The dependent variable in this study was unintended pregnancy. Unintended pregnancy is defined and calculated as a pregnancy that is either unwanted or mistimed. A woman who has an unwanted pregnancy does not want to be pregnant or have any children. A woman who has a mistimed pregnancy does not want to be pregnant at this time but wants the pregnancy later⁷.

Other variables analyzed as independent variables are the type of place of residence, age group, education level, having husband/partner, employment status, wealth status, parity, history of pregnancy termination, the person deciding woman's access to health care, hearing about family planning messages on radio, heard about family planning messages on television, and heard about family planning messages on newspaper/magazines.

The type of place of residence is divided into two criteria, urban and rural-based on the criteria determined by the Central Bureau of Statistics. Age groups are divided into 7 groups on a 5-year basis, namely 15–19, 20–24, 25–29, 30–34, 35–39, 40–44, and 45–49. The education level is the respondents' acknowledgment of her latest education level. This variable is divided into 4 criteria, such as no education, primary, secondary, and higher education. Having a husband/partner is divided into 2 categories, which are not owning and owning. Don't have a husband/partner is never in a union, widowed,

divorced, or no longer living together/separated, have a husband/partner is married, or living with a partner. Employment status is divided into 2 categories, not employed and employed.

Wealth status is the respondents' acknowledgment of the wealth quintile in a household. Household wealth was assessed based on types of furniture and their prices. It counts a television, a bicycle or a car, and household goods, such as drinking water sources, bathroom amenities, and main building materials for flooring. The assessment of this variable was calculated with the principal component analysis. National wealth quintiles were arranged based on household scores for each person in the household and then divided into the same five categories, each of which contributes 20% of the population based on the distribution ⁸.

Parity is the frequency of giving birth to a live baby. Parity is divided into 2 categories, namely primiparous (< 2) and multiparous (≥ 2). History of pregnancy termination is determined based on the respondent's recognition, divided into 2 categories, namely experiencing and not experiencing pregnancy termination. The person deciding woman's access to health care, determined based on the respondent's acknowledgment, is divided into 4 categories, namely respondent alone, respondent and husband/partner, husband/partner only, and someone else. Heard about family planning messages on radio, heard about family planning messages on television, and heard about family planning messages on newspaper/magazines, determined based on the respondent's acknowledgment, which is divided into 2 categories, namely having heard a message and never hearing a message.

All variables used in this study are categorical variables, so the Chi-square test was used to select variables related to unintended pregnancy. Because of the nature of the dependent variable, Binary Logistic Regression was used for multivariate final determination. The author uses SPSS 22 software to help all stages of statistical analysis.

Results

Source

The map depicted in the image belongs to the author

Table 1 displays the results for the collinearity test of unintended pregnancy among childbearing age women in Indonesia. The analysis shows that there is no co-linearity between the dependent and independent variables. Table 1 informs that the tolerance values of all variables are greater than 0.10. While the VIF value for all variables is less than 10.00. Referring to the basis of decision making in the multicollinearity test, it can be concluded that there are no symptoms of multicollinearity in the regression model.

Table 1
Results for The Co-Linearity Test of unintended pregnancy among childbearing age women in Indonesia, 2017 (36,472)

Variables	Collinearity Statistics	
	Tolerance	VIF
Type of place of residence	0.765	1.307
Age group	0.752	1.330
Education level	0.723	1.383
Have a husband/partner	0.730	1.369
Employment status	0.942	1.061
Wealth status	0.620	1.614
Parity	0.775	1.290
History of pregnancy termination	0.974	1.027
Person deciding woman's access to healthcare	0.734	1.362
Participants heard about family planning messages on the radio in the last few months	0.909	1.100
Participants heard about family planning messages on television in the last few months	0.852	1.174
Participants heard about family planning messages on newspaper/magazines in the last few months	0.832	1.203
Dependent Variable: Unintended pregnancy		

Table 2 is a statistical display of the description of respondents of unintended pregnancy among childbearing age women in Indonesia. Table 2 informs that unintended pregnancy is more dominant in urban areas. Based on age groups, although all age groups experience an unintended pregnancy, the incidence of unintended pregnancy is dominated by childbearing age women in the 35–39 category.

Table 2 shows that based on the education level category, unintended pregnancy is dominated by women with secondary education. Unintended pregnancy is also dominated by women who have husbands/partners, employed women, the poorest women, and multiparous women.

Based on the history of the pregnancy termination category, unintended pregnancy is dominated by women who have never had a pregnancy termination. Based on the person deciding a woman's access to healthcare, unintended pregnancy is dominated by decision-making criteria by respondent and husband/partner.

Tabel 2 Statistic description of respondents of unintended pregnancy among childbearing age women in Indonesia, 2017 (36,472)

Variables	Unintended Pregnancy				p
	No		Yes		
	n	%	n	%	
Type of place of residence					*** 0.001
• Urban	14356	45.4%	2875	59.4%	
• Rural (ref.)	17277	54.6%	1964	40.6%	
Age group					*** 0.001
• 15–19 (ref.)	421	1.3%	22	0.5%	
• 20–24	3013	9.5%	84	1.7%	
• 25–29	6480	20.5%	289	6.0%	
• 30–34	8933	28.2%	792	16.4%	
• 35–39	8004	25.3%	1722	35.6%	
• 40–44	3888	12.3%	1451	30.0%	
• 45–49	894	2.8%	479	9.9%	
Education level					*** 0.001
• No education (ref.)	725	2.3%	103	2.1%	
• Primary	16982	53.7%	2706	55.9%	
• Secondary	9222	29.2%	1556	32.2%	
• Higher	4704	14.9%	474	9.8%	
Have a husband/partner					*0.029
• No	887	2.8%	163	3.4%	
• Yes (ref.)	30746	97.2%	4676	96.6%	
Employment status					*** 0.001
• No (ref.)	16112	50.9%	2317	47.9%	
• Yes	15521	49.1%	2522	52.1%	

Note: * p < 0.05; ** p < 0.01; *** p < 0.001.

Variables	Unintended Pregnancy				p
	No		Yes		
	n	%	n	%	
Wealth status					*** 0.001
• Poorest (ref.)	9993	31.6%	1274	26.3%	
• Poorer	6094	19.3%	1003	20.7%	
• Middle	5558	17.6%	854	17.6%	
• Richer	5115	16.2%	840	17.4%	
• Richest	4873	15.4%	868	17.9%	
Parity					*** 0.001
• Primiparous (ref.)	4711	14.9%	39	0.8%	
• Multiparous	26922	85.1%	4800	99.2%	
History of pregnancy termination					*** 0.001
• No (ref.)	26214	82.9%	3721	76.9%	
• Yes	5419	17.1%	1118	23.1%	
Person deciding woman’s access to healthcare					**0.007
• Respondent alone (ref.)	13169	41.6%	2052	42.4%	
• Respondent and husband/partner	14347	45.4%	2087	43.1%	
• Husband/partner only	3135	9.9%	530	11.0%	
• Someone else	982	3.1%	170	3.5%	
Participants heard about family planning messages on the radio in the last few months					*** 0.001
• No (ref.)	29263	92.5%	4380	90.5%	
• Yes	2370	7.5%	459	9.5%	
Participants heard about family planning messages on television in the last few months					**0.005
• No (ref.)	15358	48.6%	2245	46.4%	
• Yes	16275	51.4%	2594	53.6%	
Note: * p < 0.05; ** p < 0.01; * * * p < 0.001.					

Variables	Unintended Pregnancy				p
	No		Yes		
	n	%	n	%	
Participants heard about family planning messages on newspaper/magazines in the last few months					0.721
• No (ref.)	28061	88.7%	4301	88.9%	
• Yes	3572	11.3%	538	11.1%	
Note: * p < 0.05; ** p < 0.01; * * * p < 0.001.					

Table 2 informs that based on the category of participants heard about family planning messages, unintended pregnancy is dominated by women who hear from television. While women who hear from radio and newspaper/magazines are not dominant enough.

Tabel 3 Result of binary logistic regression of unintended pregnancy among childbearing age women in Indonesia, 2017 (36,472)

Predictors	Unintended Pregnancy			
	Sig.	OR	LB	UP
Type of place of residence: Urban	***<0.001	1.834	1.704	1.975
Type of place of residence: Rural (ref.)	-	-	-	-
Age group: 15–19 (ref.)	-	-	-	-
Age group: 20–24	***<0.001	0.202	0.120	0.341
Age group: 25–29	***<0.001	0.189	0.115	0.312
Age group: 30–34	***<0.001	0.307	0.187	0.502
Age group: 35–39	0.175	0.712	0.435	1.163
Age group: 40–44	0.375	1.249	0.764	2.045
Age group: 45–49	*0.011	1.916	1.160	3.164
Education level: No education (ref.)	-	-	-	-
Education level: Primary	*0.015	1.314	1.053	1.638
Education level: Secondary	**0.002	1.447	1.150	1.820
Education level: Higher	0.253	0.866	0.676	1.108
Have a husband/partner: No (ref.)	-	-	-	-
Have a husband/partner: Yes	0.386	0.692	0.301	1.591
Employment status: No (ref.)	-	-	-	-
Employment status: Yes	0.913	1.004	.940	1.072
Wealth status: Poorest (ref.)	-	-	-	-
Wealth status: Poorer	***<0.001	1.190	1.080	1.310
Wealth status: Middle	0.987	0.999	0.900	1.110
Wealth status: Richer	0.487	10.040	0.931	1.161
Wealth status: Richest	0.734	10.021	0.906	1.151
Parity: Primiparous (ref.)	-	-	-	-

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Predictors	Unintended Pregnancy			
	Sig.	OR	LB	UP
Parity: Multiparous	***<0.001	12.220	8.630	17.304
History of pregnancy termination: No (ref.)	-	-	-	-
History of pregnancy termination: Yes	*0.025	1.092	1.011	1.180
Person deciding woman's access to healthcare: Respondent alone (ref.)	-	-	-	-
The person deciding a woman's access to healthcare: Respondent and husband/partner	0.140	0.949	0.886	10.017
The person deciding a woman's access to healthcare: Husband/partner only	**0.005	1.172	1.050	1.307
Person deciding woman's access to healthcare: Someone else	0.771	0.886	0.392	2.000
Participants heard about family planning messages on the radio in the last few months: No (ref.)	-	-	-	-
Participants heard about family planning messages on the radio in the last few months: Yes	***<0.001	1.336	1.191	1.498
Participants heard about family planning messages on television in the last few months: No (ref.)	-	-	-	-
Participants heard about family planning messages on television in the last few months: Yes	**0.001	1.120	1.046	1.200
Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.				

Table 3 displays the results of the binary logistic regression test of unintended pregnancy among childbearing age women in Indonesia. Women who live in urban areas are 1.834 times more likely than women who live in rural areas to experience unintended pregnancy (OR 1.834; 95% CI 1.704–1.975).

Table 3 shows that women in the 20–24 age group were 0.202 times more likely than women in the 15–19 age group to experience unintended pregnancy (OR 0.202; 95% CI 0.120–0.341). Women in the 25–29 age group are 0.189 times more likely than women in the 15–19 age group to experience unintended pregnancy (OR 0.189; 95% CI 0.115–0.312). Women in the 30–34 age group are 0.307 times more likely than women in the 15–19 age group to experience unintended pregnancy (OR 0.307; 95% CI 0.187–0.502). Women in the 45–49 age group are 1.916 times more likely than women in the 15–19 age group to experience unintended pregnancy (OR 1.916; 95% CI 1.160–3.164).

Table 3 shows that women who have an education level in the primary category are 1.314 times more likely than no education women to experience unintended pregnancy (OR 1.314 95% CI 1.053–1.638).

Women who have secondary education level are 1.447 times more likely than no education women to experience unintended pregnancy (OR 1.447; 95% CI 1.150–1.820).

Table 3 informs that women with wealth status in the poorer category are 1.190 times more likely than the poorest women to experience unintended pregnancy (OR 1.190; 95% CI 1.080–1.310). Wealth status in other categories did not show a significant difference compared to the poorest women to experience an unintended pregnancy.

Table 3 shows that multiparous women are 12.220 times more likely than primiparous women to experience unintended pregnancy (OR 12.220; 95% CI 8.630-17.304). This information shows that parity is a strong determinant of the incidence of unintended pregnancy among childbearing age women in Indonesia.

Table 3 informs that women who have a history of pregnancy termination are 1.092 times more likely than women who do not have a history of pregnancy termination to experience unintended pregnancy (OR 1.092; 95% CI 1.011–1.180). This information shows that the history of pregnancy termination is a risk factor for unintended pregnancy among childbearing age women in Indonesia.

Based on the person who decides woman's access to healthcare, women who have a husband/partner only decision-maker are 1.172 times more likely than women who make their own decisions to experience unintended pregnancy (OR 1.172; 95% CI 1.050–1.307). This information shows that decision making by husband/partner only is a risk factor for unintended pregnancy among childbearing age women in Indonesia.

Table 3 shows that women who were heard about family planning messages on the radio in the last few months were 1.336 times more likely than women who were not heard about family planning messages on the radio in the last few months to experience unintended pregnancy (OR 1.336; 95% CI 1.191–1.498). Women who were heard about family planning messages on television in the last few months were 1.120 times more likely than women who were not heard about family planning messages on television in the last few months to experience unintended pregnancy (OR 1.120; 95% CI 1.046-1.200). This information shows that heard about family planning messages on radio or television in the last few months is a risk factor for unintended pregnancy among childbearing age women in Indonesia.

Discussion

The results of the analysis found that women who live in urban areas are more likely than women who live in rural areas to experience an unintended pregnancy. This information contradicts previous research in Pakistan, Ethiopia and several countries in sub-Saharan Africa that informs that living in rural areas is a risk factor for unintended pregnancy in women compared to women living in urban areas^{9–11}. In the Indonesian context, the availability of health facilities is better in urban areas than rural areas^{12,13}, including the availability of contraceptives.

The results found that the age group is partially a determinant of the unintended pregnancy among childbearing age women in Indonesia. Age as a determinant unintended pregnancy was also found in previous studies ^{9,14,15}. Age other than related to the unpreparedness of women when they were teenagers ^{16,17}, also related to the number of children desired and the reproductive ability of women ¹⁸.

The results found that education level and wealth status are partially determinants of the unintended pregnancy among childbearing age women in Indonesia. This finding strengthens the results of previous studies that found the information to be in line ^{10,11,19}. Education and wealth status has always been found to be influential in many ways related to health. A person with good wealth status is often well educated so that he has good health output ^{20,21}. A systematic review found in several studies that financial incentives also seem to effectively increase women's contraception intake ²². This kind of financing intervention is needed to overcome the barrier of contraceptive use among poor women to minimize the occurrence of unintended pregnancy.

Information on the results of the study shows that parity is a strong determinant of the incidence of unintended pregnancy among childbearing age women in Indonesia. Multiparous women who feel that the number of children they have is more vulnerable to unintended pregnancy. This condition may be related to plans to not become pregnant or use contraception that failed ^{10,23,24}. The same reason also applies to the history of the pregnancy termination category. Women who have experienced pregnancy termination tend to have a higher chance of experiencing an unintended pregnancy compared to those who have never experienced pregnancy termination ¹⁴.

The analysis found that husband/partner only decision making was a risk factor for unintended pregnancy among childbearing age women in Indonesia. This condition is related to the lack or deadlock of communication between women and their partners ^{14,18,19}. Several previous studies have found the same information, unintended pregnancy is closely related to women's independence in making decisions about their reproductive health ^{25,26}.

The results found that hearing about family planning messages on radio or television in the last few months is a risk factor for unintended pregnancy among childbearing age women in Indonesia. This information is in line with the findings of previous studies in Mozambique and Ghana ¹. While conflicting results were reported in a previous study in Northwest Ethiopia. The study found that women with no access/exposure to mass-media have a higher risk than those who have access/exposure to mass-media to experience unintended pregnancy ²⁷.

This information also indicates the type of media most frequently accessed by women for family planning. Women prefer media with messages based on audio (radio) or a combination of visual and audio (television) ²⁸⁻³⁰. This information is useful for policymakers or family planning activists to better utilize the two media categories as a medium for delivering messages about family planning.

Conclusions

Based on the results of the analysis it could be concluded that eight variables affect unintended pregnancy. The eight variables were age group, education level, wealth status, parity, history of pregnancy termination, the person deciding woman's access to health care, heard about family planning messages on radio and television.

Declarations

Ethics approval and consent to participate

The 2017 IDHS has passed ethical clearance from the National Ethics Committee. The respondents' identities have all been deleted from the dataset. Respondents have provided written approval for their involvement in the study. Informed consent for participation in the study was obtained where participants are children (under 16 years old) from their parent or guardian. The author has obtained permission for the use of data for this study through the website: <https://dhsprogram.com/data/new-user-registration.cfm>.

Consent for publication

Not applicable

Competing interests

The authors declare that they have no competing interests

Funding

Not applicable

Availability of data and materials

Data cannot be shared publicly because of the data are owned by a third party and authors do not have permission to share the data. The 2017 IDHS data set name requested from the ICF ('data set of childbearing age women') are available from the ICF contact via <https://dhsprogram.com/data/new-userregistration.cfm>) for researchers who meet the criteria for access to confidential data.

Authors' contributions

ADL developed the proposal, analyzed and interpreted the patient data. RDW was a major contributor in conducting study, interpreting the data and writing the manuscript. All authors read and approved the final manuscript.

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Figures

Figure 1

Distribution map of unintended pregnancy among childbearing age women by the province in Indonesia, 2017 (36,472). Source: The map depicted in the image belongs to the author

Figure 2

Distribution of unintended pregnancy among childbearing age women by type of place of residence and parity in Indonesia, 2017 (36,472).