The Relationship between Unintended Pregnancy and Antenatal Care Visit (Analysis of the 2017 Indonesia Demographic and Health Survey Data)

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Abstract

Background: Unintended pregnancies may lead to wide range of health risks for the mother and child. The 2017 Indonesia Demographic and Health Survey (IDHS) data show that 16 percent of pregnancies were unintended pregnancy. Women with unintended pregnancies are at high risk for unhealthy behaviors and had lower tendency to do antenatal care. Antenatal care is an important program to observation, education and medical treatment for pregnant women to obtain a safe pregnancy and childbirth. The objective of this study is to assess the relationship between unintended pregnancy and antenatal care visit using the 2017 IDHS data.

Method: The study was conducted by analyzing the results of the 2017 IDHS data that was carried out on 24 July until 30 September 2017 in 34 provinces in Indonesia by using cross sectional approach. The population in this study was 14.574 women aged 15-49 years who have been pregnant and given birth since January 2012 up to the survey was conducted. The inclusion criterion was the availability of complete data according to variables to be studied in the last pregnancy. The sample in this study using total population that met the inclusion criteria was 14.546. The analysis of the relationship between unintended pregnancy and antenatal care visit applied multivariate Cox regression analysis with 95% confidence interval (CI).

Result: Women with an unintended pregnancy were 1,423 (95% CI 1.308-1.547) more likely to perform nonstandard antenatal care compare to women with intended pregnancy after being controlled by education, parity, pregnancy complications, access to mass media, internet access, husband's support, and participation in deciding healthcare

Conclusion: The unintended pregnancy was significantly related with nonstandard antenatal care visit. It is necessary to increase public knowledge related how to prevent unintended pregnancy by health promotion and awareness to access this information through various media. Case of unintended pregnancy need to be found early, so that health workers can educate pregnant women and families to participate in maintaining the health of mothers and children

***Keywords**: Unintended pregnancy, Antenatal care, Reproductive health, Indonesia*

Introduction

Unintended pregnancies may lead to wide range of health risks, such as malnutrition, illness, abuse and neglect, and even death. Globally, 74 million women living in low and middle-income countries have unintended pregnancies annually. This leads to 25 million unsafe abortions and 47,000 maternal deaths each year[1]. Unintended pregnancy is defined as a pregnancy that occurs earlier than desired (mistimed pregnancy) and a pregnancy that occurs when no children or no more children were desired (unwanted pregnancy). The 2017 Indonesia Demographic and Health Survey (IDHS) data show that 84 percent of pregnancies were intended pregnancy, 8 percent were mistimed pregnancy and 7

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percent were unwanted pregnancy[2].

Women with unintended pregnancies are at high risk for unhealthy behaviors, had significantly lower to do prenatal care and had a higher tendency to abortion[3]. A study has showed that mothers who experience unintended pregnancy were 1.79(95% CI 1.5-2.1) more likely to not conduct prenatal care compared to mother with an intended pregnancy[4]. Another study also indicate among women with unintended pregnancies there is an increased odds of delayed antenatal care use (OR 1:42; 95% CI, 1:27 to 1:59) and an increased odds of inadequate antenatal care (OR 1.64, 95% CI: 1.47-1.82)[5].

Pregnancy is a crucial time to promote healthy behaviors and parenting skills. Indonesian Ministry of Health Regulation No. 97 of 2014 mandates that pregnant women should have at least four antenatal care visits during pregnancy, comprising one visit in the first trimester, one visit in the second trimester, and two visits in the third semester[6]. The 2017 IDHS data show that 23.2 percent of antenatal care was not in accordance with the standard[2]. A study showed that 35.1 percent mothers with middle and lower economic who did not perform antenatal care in accordance with the standard were mothers with unintended pregnancy[4].

Previous studies have examined the factors that cause unintended pregnancy or the determinants of adequate antenatal care, but only few studies have linked the status of unintended pregnancy with antenatal care. This study aims to look at the relationship of unintended pregnancy status with antenatal care visit using the 2017 IDHS data with a large number of samples.

Method

The study was conducted by analyzing the results of the 2017 Indonesia Demographic and Health Survey (IDHS) that was carried out by Statistics Indonesia (BPS) in collaboration with the National Population and Family Planning Board (BKKBN) and Ministry of Health (MOH) on 24 July until 30 September 2017 in 34 provinces in Indonesia by using cross sectional approach.

The population in this study was 14.574 women aged 15-49 years in 34 provinces in Indonesia who have been pregnant and given birth since January 2012 up to the survey was conducted. The inclusion criterion was the availability of complete data according to variables to be studied in the last pregnancy. The sample in this study using total population that met the inclusion criteria was 14.546.

The dependent variable was antenatal care visit, which was defined as pregnancy-related health care provided by a skilled provider. The Indonesian government's standard of antenatal care visits during pregnancy according to 1-1-2, at least one visit in the first semester, at least one visit in the second semester, and at least two visits in the third semester. The independent variable was unintended pregnancy, which was defined as a pregnancy that occurs earlier than desired (mistimed pregnancy) and a pregnancy that occurs when no children or no more children were desired (unwanted pregnancy). Covariate variables include education, parity, pregnancy complications, access to mass media, internet access, husband support, participation in deciding healthcare. Relationship analysis of the independent and dependent variables employed multivariate Cox regression analysis, and the interpretation of the effects was expressed by PR and a confidence interval of 95%

Results

Based on data from 2017 IDHS data, there were 14.546 women aged 15-49 years who had given birth in the last 5 years before the survey with complete data. Table 1 shows a description of the characteristics of some of the variables. The proportion of nonstandard antenatal care was 23.2 %, while the proportion of unintended pregnancy was 16.5%. Table 2 shows the results of the bivariate analysis that unintended pregnancy status was significantly related with nonstandard antenatal care visit (p value 0.000<0.05). Woman who experience unintended pregnancy were 1,487 (95% CI 1,390-1,591) more likely to perform antenatal care not according to standard compare to women with intended pregnancy. Table 3 shows that all covariates variables tested were significantly related with antenatal care. Table 4 shows the final multivariate model. In this study the final multivariate model is the same as the full model. After conducting the confounding test, all covariate variables had a change of PR <10%, but because in the literature literally all tested variables were related to

unintended pregnancy and antenatal care, all variables were included in the model. After controlling for education, parity, pregnancy complications, access to mass media, internet access, husband's support, participation in deciding healthcare, women with an unintended pregnancy were 1,423 (95% CI 1.308 to 1.547) more likely to perform nonstandard antenatal care compare to women with intended pregnancy.

Table 1. Characteristics of study sample (n=14.456)

Characteristic	**N**	**%**
Antenatal Care (ANC)		
Nonstandard	3370	23.2
Standard	11176	76.8
Unintended Pregnancy		
Yes	2399	16.5
No	12 147	83.5
Education		
≤ Elementary School	3659	25.2
> Elementary School	10887	74.8
Residence		
Rural	7321	49.7
Urban	7315	50.3
Parity		
> 2	5182	35.6
≤ 2	9364	64.4
Pregnancy complications		
No	119 91	82.4
Yes	2555	17.6
Access to Mass Media		
Have no access	482	3.3
Have	14064	96.7
Internet access		
Never	7739	53.2
Ever	6807	46.8
Husband's Support		
No	3564	24.5
Yes	10982	75.5
Participation in Deciding Healthcare		
No	1682	11.6
Yes	12864	88.4

Table 2. Relationship between the independent variable and the dependent variable

Unintended Pregnancy	Nonstandard ANC		Standard ANC		Total		PR (95% CI)	p-value
	N	%	N	%	N	%		
Yes	765	31.9	1634	68.1	2399	100	1.487 (1,390-1,591)	0,000*
No	2605	21.4	9542	78.6	12 147	100		
Total	3370	23.2	11176	76.8	14 546	100		

PR = Prevalence Ratio; *significant statistic $p < 0.05$

Table 3. Relationship between the covariates variables and the dependent variable

Variables	Nonstandard ANC		Standard ANC		Total		PR (95% CI)	p-value
	N	%	N	%	N	%		
Education							1.509 (1,420-1,604)	0,000*
≤ Elementary School	1134	31.0	2525	69.0	3659	100		
> Elementary School	2236	20.5	8651	79.5	10887	100		
Parity							1.381 (1,302-1,465)	0,000*
> 2	1460	28.2	3722	71.8	5182	100		
≤2	1910	20.4	7454	79.6	9364	100		
Pregnancy complications							1.142 (1,052-1,240)	0,001*
No	2840	23.7	9151	76.3	11991	100		
Yes	530	20.7	2025	79.3	2555	100		
Access to Mass Media							1.637 (1,452-1,846)	0,000*
Have no access	179	37.1	303	62.9	482	100		
Have	3191	22.7	10 873	77.3	14064	100		
Internet access							1,660 (1.559 - 1.768)	0,000*
Never	2203	28.5	5536		7739	100		
Ever	1167	17.1	5640		6807	100		
Husband's support							1.817 (1,713-1,927)	0,000*
No	1250	35.1	2314	64.9	3564	100		
Yes	2120	19.3	8862	80.7	10982	100		
Participation in Deciding Healthcare							1.152 (1,056-1,255)	0,002*
No	441	26.2	1241	73.8	1682	100		
Yes	2929	22.8	9935	77.2	12864	100		

PR = Prevalence Ratio; *significant statistic $p < 0.05$

Table 4. Final Multivariate Model

Variables	PR	95% CI	p-value
Unintended Pregnancy	1,423	1.308 - 1.547	0,000*
Education	1,162	1.073 - 1.259	0,000*
Parity	1.075	0.998 - 1.158	0.055
Pregnancy complications	1.093	0.996 - 1.199	0.061
Access to Mass Media	1,231	1.055 - 1.435	0,008*
Internet access	1,371	1.266 - 1.486	0,000*
Husband's Support	1.556	1.446 - 1.674	0,000*
Participation in Deciding Healthcare	1,133	1.025 - 1.253	0,014*

PR = Prevalence Ratio; *significant statistic $p < 0.05$

Discussion

From this cross-sectional study, we have evaluated that unintended pregnancy, controlled by education, parity, pregnancy complications, access to mass media, internet access, husband's support, participation in deciding healthcare, pose a significant risk of antenatal care. This result is in line with research in Ethiopia which found that women with unintended pregnancy were 69% less likely to receive ANC (AOR=0.31 95%CI : 0.21-0.46) and were four times more likely to have late ANC initiation (AOR= 4.40, 95%CI: 1.70-11.40)[7].

Women with unintended pregnancies are at high risk for unhealthy behaviors, had significantly lower to do prenatal care and had a higher tendency to abortion[3]. Women with unintended pregnancy tended to have late antenatal care initiation and receive inadequate antenatal care. Women with unintended pregnancy have a tendency to not recognize the early sign of pregnancy that cause them not to have antenatal care since early pregnancy[8].

Antenatal care provides an opportunity to deliver interventions for providing health education, improving maternal nutrition and encouraging skilled attendance birth. Antenatal care that does not fit the standard has impact on obstetric complication such as adverse pregnancy outcomes, maternal morbidity and mortality, premature birth, low birth weight and neonatal death[9].

Women with unintended pregnancy have less motivation to seek information about pregnancy health because they do not care about the risks that will occur[4]. The information that is owned by women will influence the knowledge and actions to determine antenatal care performed. Women with higher education will be more receptive to the information provided to them and have better knowledge than women with lower education[10].

The result of the 2017 IDHS shows that the higher the birth order, the more likely the births are reported as unintended[2]. Mothers who have more birth history will have less motivation for antenatal care visits because they feel they have enough experience[11]. The incidence of complications during pregnancy is also associated with antenatal care visits. Pregnant women who experience complications during pregnancy will increase awareness of maternal and child health that will increase the desire to take advantage of adequate antenatal care[12].

Information related to antenatal care is influenced by women's ability to access mass media from newspapers, magazine, television, radio or from the internet. People who can access a lot of information media have better

knowledge than people who can only a little media of information[13].

Women tend to blame themselves for unintended pregnancies. Husband's support can provide good motivation for pregnant women to do antenatal care[14]. The form of husband's support in this study is the willingness of the husband to take the time to accompany his wife in conducting antenatal care visits.

Decision making related to antenatal care is a negotiation process between the husband and wife influenced by the distribution of power among couples in households. Pregnant women who participated in the decision-making process of their own health care are more likely to use antenatal care. In some traditional communities where the patriarchal system is dominated, the husband is the key person in making decisions. In addition, women's bargaining in participation in determining decisions is also influenced by their socioeconomic and educational status. Women with lower socioeconomic and educational status are less likely to be involved in deciding health care and the decision is determined by husband, mother-in-law or senior family members[15].

This study has several limitations both from the research variables and the quality of available data. Variable access to the mass media and the internet in this study is not specifically related to access to reproductive health information, but access to general information. Not all variables that are related to unintended pregnancy and antenatal care visit are available in the 2017 IDHS data, such as maternal knowledge regarding reproductive health and maternal involvement in community organizations. Data of 2017 IDHS are obtained from interviews using questionnaire of activities 5 years before the survey. The accuracy of the information depends on the ability respondent to remember, which impacts the likelihood of information bias. The information bias that occurs is non-differential because it occurs in all groups, both the exposure and non-exposure groups.

Conclusion

Women with unintended pregnancies have a risk of 1.423 (95% CI 1.308 to 1.547) times more likely to perform nonstandard antenatal care compare to women with intended pregnancy after controlling education, parity, pregnancy complications, access to mass media, internet access, husband's support, and participation in deciding healthcare. Based on the results of this study, coverage of antenatal according to standard can be increased by preventing unintended pregnancy. This can be achieved by increasing public knowledge related to reproductive health and the importance of antenatal care through health promotion, and increasing awareness to access this information through various media. Cases of unintended pregnancy need to be found early, so that health workers can educate pregnant women and families to participate in maintaining the health of mothers and children.

Ethical Considerations: The utilization of the 2017 IDHS data in this study was approved by National Population and Family Planning Board (BKKBN) Indonesia. All respondents in this survey had provided informed consent to be interviewed prior to data collection.

Competing Interests: The authors declared that no competing interest exist.

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