



Determinants of Unplanned Pregnancy in Married Women in North Sumatra Province

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Abstract

Unplanned pregnancy remains a public health problem as it negatively affects fetal development and adversely impacts the mother and child's health. In the efforts to reduce maternal and infant mortality, as well as improve maternal health, unplanned pregnancy occurs due to several factors such as age, knowledge, contraceptive failures, and finances. The study aimed to determine the factors associated with the incidence of unwanted pregnancy. This study implemented a cross-sectional design using secondary data from the 2019 Program Performance and Accountability Survey of North Sumatra Province. The bivariate analysis was performed through a simple logistic regression. Multiple logistic regression was performed in multivariate analysis. The result showed that there were 21.3% of women reported their last pregnancy as an unplanned pregnancy. The study concluded that factors associated with an unplanned pregnancy are age at the last pregnancy, wealth at a lower index, having two or more children, and not working. Having two or more children is the most dominant factor in an unplanned pregnancy.

Introduction

Pregnancy is one of the determinants of fertility. Therefore married couples should plan whether to have children and when to have children so they can plan their pregnancy properly (Bongaarts, 2015). Because pregnancy is the initial stage of life formation, husband and wife should be prepared to face an increase in family members, and women should be ready to carry out their pregnancy properly and responsibly per recommendations from the World Health Organization (World Health Organization, 2016 p.2). Pregnancy planning allows women and their partners to prepare a supportive environment for conception to occur. This preparation includes physical, psychological, and social readiness, which includes, among other things, the nutritional adequacy of women and their partners, financial/economic readiness, and

management of pre-existing diseases in married couples (Oktalia and Herizasyam, 2016; Stephenson et al., 2018). Adequate planning and pregnancy management are one of the efforts to improve maternal and child health, which until now, is still one of the focuses of sustainable development goals. Based on the guidelines of the World Health Organization, pregnancy should be prepared by carrying out health checks, completing vaccinations, and conducting screening/early detection of diseases (World Health Organization, 2016).

However, efforts to reduce maternal and child mortality have not shown the expected progress. Communities in developing and developing countries still face obstacles, including a high preventable mortality rate, namely maternal deaths related to pregnancy (Kassebaum et al., 2014). It includes unplanned pregnancies, both of which eventually end up as

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unplanned pregnancies, later desired (wanted pregnancy), or become unwanted pregnancies. Unplanned pregnancy (UP) is a public health problem because it burdens society. Both financially and socially (Yazdkhasti et al., 2015). Unplanned pregnancies affect family financial/economic conditions and inadequate parenting, even associated with weak health conditions of mothers and children (de La Rochebrochard and Joshi, 2013). UP also contributes to the high incidence of abortion and unsafe abortion, where previous research showed that 1 in 5 unwanted pregnancies end in abortion (Eftekhariyazdi et al., 2021). UP also contributes to the high incidence of abortion and unsafe abortion, where previous research showed that 1 in 5 unwanted pregnancies end in abortion (Bastola, 2015). Given the high proportion of unplanned pregnancies, ranging from around 38% in 2010. Even estimated 48% of the total pregnancies in 2019, unwanted pregnancies are still very common (Singh, Sedgh and Hussain, 2010; Bearak et al., 2022).

An unplanned pregnancy (UP) is defined as an event of pregnancy that occurs that is actually not planned or is not wanted (mistimed), or the pregnancy is wanted later (BKKBN and BPS, 2019). Unwanted pregnancies can be resulted from sexual violence and risky sexual behavior in adolescents (Azinar, 2013). In developed countries, unwanted pregnancy is often associated with teenage pregnancies, low incomes, unmarried women, and ethnic minorities (Troutman, Rafique and Plowden, 2020). Studies in the United States also confirm that the proportion of unwanted events in unmarried women is four times higher than in married women (Finer and Zolna, 2016). Although the number of UP has decreased significantly in developing countries such as the United States and New Zealand, recent studies still show that nearly half of the pregnancies are still unplanned. (Finer and Zolna, 2016; Hohmann-Marriott, 2018).

Meanwhile, in countries with low and middle incomes, adverse events can occur as a result of contraceptive failure, poverty/financial difficulties, and unmet need for contraception where the husband and wife do not plan to have children soon. But they are not using a contraceptive method. Therefore, UP are

associated with low access to contraception, which results in low birth weight babies and pregnancy complications experienced by pregnant women (Rahman et al., 2016, 2019; Bishwajit et al., 2017; Jain and Winfrey, 2017). Unplanned pregnancies are also associated with delays in knowing about pregnancy. Therefore will contribute to the risk of delays in fulfilling nutrition in early pregnancy characterized by anemia (Leppälähti et al., 2013). The physical condition of a pregnant woman before pregnancy is a vital factor in preparing a woman's body for pregnancy (Stephenson et al., 2018). Besides that, women also need various nutrients that are important and support fetal development during pregnancy, including vitamin D, folic acid, and iron, especially before the start of pregnancy (Hodgetts et al., 2015). Ignorance of pregnancy can also place women in unhealthy behaviors such as smoking, unbalanced consumption patterns, and strenuous physical activity (Stephenson et al., 2018). While according to WHO recommendations, pregnant women are expected to maintain physical fitness with only light exercise during pregnancy (World Health Organization, 2016).

The results of a study using 2010 Basic Health Research (RISKESDAS) data show that the UP incidence in 2010 varied by province, with the lowest at 0.4 percent in Central Kalimantan to the highest proportion in West Java at 22.8% (Pranata and Sadewo, 2012). Meanwhile, based on an analysis using the 2017 IDHS data, as many as 16.2% of UP were found in Indonesia (Supriyadi and Yanti, 2020) and the 2019 SKAP results showed that there were 17.5% of UP nationally, with the proportion varying in each provinces ranging from the lowest proportion in Central Sulawesi Province (9.3%) to 29.9% in the Bangka Belitung Islands Province (BKKBN and BPS, 2019 p.102).

North Sumatra Province is one of the highest contributors to the population on the island of Sumatra. North Sumatra Province has unique demographic characteristics, marked by the low number of first marriages at a young age. North Sumatra Province is one of the provinces with a high median age at first marriage, namely 20.8 years, higher than the national median age at marriage of 19.5 years. North Sumatra

Province has the least proportion of women who marry for the first time at the age of 10-14 years (BKKBN and BPS, 2019 p.119), indicating women in North Sumatra Province marry for the first time at an older age compared to women in other provinces. However, North Sumatra Province is also one of the provinces with a proportion of married couples who want many children. The results of the 2017 IDHS analysis show that in the last 10 years, North Sumatra Province has not shown a significant change in the total fertility rate (TFR), with the TFR in 10 years still around 3 children per woman (Raharja, Fadila and Rahmadewi, 2021). In addition, 63.8% of married couples aged 15-49 years stated that the ideal number of children is three or more, and only about one in three married couples of childbearing age think that the ideal number of children is two children or less (BKKBN and BPS, 2019 p.109). Data also shows the high unmet need for contraception in North Sumatra, where 10.7 percent of women of childbearing age aged 15-49 in North Sumatra Province want to space births and limit births but do not use contraception (BKKBN et al., 2018). This high unmet need for contraception will contribute to unwanted and unplanned pregnancies. Besides that, the 2019 SKAP data also shows that the UP rate in North Sumatra Province is higher than the national average (BKKBN and BPS, 2019 p.102).

An understanding of unplanned pregnancies is a strategic step in efforts to improve maternal and child health based on evidence-based programs, as well as an effort to reduce the gap between programs and policies (Tsui, McDonald-Mosley and Burke, 2010). Understanding pregnancy intentions also equips program managers in planning the needs of women of childbearing age for a series of reproductive health programs (Hall et al., 2017). Given the vital role of provincial-level community factors in explaining the incidence of UP (Supriyatna, Dewi and Wilopo, 2018), the researchers wanted to explore the factors that play a role as determinants of unplanned pregnancies in married women in North Sumatra Province.

Method

This study used a cross-sectional design using secondary data from the 2019 Program Performance and Accountability Survey (SKAP) of North Sumatra Province. SKAP 2019 is an annual survey with provincial representation using a cluster approach represented by 35 households. Overall there are 78 clusters spread across all districts/cities in North Sumatra Province, with a total of 2,730 households; 2,757 families, and 2,392 women of childbearing age (WCA). The inclusion criteria are all married women aged 15-49 years, contained in the 2019 SKAP WCA data set for North Sumatra Province, women of childbearing age (15-49 years) who had been married and were participants in the 2019 Program Performance and Accountability Survey (SKAP). Postmenopausal women and women who had never been pregnant at the time of the survey were excluded from the analysis. As many as 1,764 married women of childbearing age met the criteria and became research samples.

The dependent variable in this study was an unplanned pregnancy. Data regarding pregnancy planning were from questions regarding pregnancy intention (FQ18). The questions were: "when you were pregnant with your last child, did you really want this pregnancy at that time, or did you want to wait until later, or did you not want (another) child?" (BKKBN and BPS, 2019 p.314). Planned pregnancies were grouped if the respondent answered: "wanted at that time". While the answers "then or did not want more children" were grouped into unplanned pregnancies. The independent variables in this study were demographic characteristics. They consist of the woman's age at her last pregnancy and when she first married, the number of living children and the number of children she wanted, the education level completed, history of contraception use, category of wealth index, and ownership of health insurance. Data were then processed through bivariate analysis using simple logistic regression, with a significant relationship determined if the p-value <0.05. Multivariate test through multiple logistic

regression with the enter method variables that have significance in bivariate analysis.

Results and Discussions

Characteristics of married women based on pregnancy planning can be seen in Table 1.

Table 1. Demographic Characteristics of Married Women in North Sumatra Province in 2019

Variables	UP		Planned		Total	
	n	%	n	%	n	%
n	375	21.3	1,389	78.7	1,764	100
Pregnancy Status						
Not Pregnant	353	94.1	1,315	94.7	1,668	94.6
Pregnant	22	5.9	74	5.3	96	5.4
Age (years) †						
Not Ideal	106	28.3	257	18.5	363	20.6
Ideal	269	71.7	1,132	81.5	1,401	79.4
Age at first marriage						
≤ 20 years	187	49.9	559	40.2	746	42.3
≥ 21 years	188	50.1	830	59.8	1,018	57.7
Wealth Index						
Middle Low	304	81.1	1,022	73.6	1,326	74.1
High	71	18.9	367	26.4	438	24.9
Education						
Uneducated – Junior High	177	47.2	595	42.8	772	43.8
Senior High – Graduate	198	52.8	794	57.2	992	56.2
Contraception Use						
Ever	322	85.9	1,075	77.4	1,397	79.2
Never	53	14.1	314	22.6	367	20.8
Ideal number of children						
≤ 2	112	29.9	475	32.4	587	33.3
> 2	263	70.1	914	65.8	1,177	66.7
Number of children						
> 2	260	69.3	667	48.0	927	52.6
≤ 2	115	30.7	722	52.0	837	47.4
Working Status of the Woman						
Not working	215	57.3	677	48.7	892	50.6
Working	160	42.7	712	51.3	872	49.4
Own Health Insurance						
No	137	36.5	500	36.0	637	36.1
Yes	238	63.5	889	64.0	1127	63.9

Source: Processing of 2019 SKAP Secondary Data of North Sumatra Province

Of 1,764 married women of childbearing age, 5.4 percent of married women were pregnant, and 21.3 percent of women reported their last pregnancy as unplanned. The analysis showed that in the last pregnancy, around 79% of women were at the ideal age for pregnancy (21-35 years). Half of the women were in working status, and 56.2 percent of the participants had secondary or higher education. About 66 percent stated that the ideal number of children they wanted was more than two, and more than half of married women had more than two children. About 79 percent of women said they

had used one method of contraception, and 74 percent of women were in the lower middle-class wealth index.

Unplanned pregnancies (UP) were almost entirely reported by women who were not pregnant (94.1%). Just 5.9 percent were reported by pregnant women when data collection. One in four UP is at an age that is not ideal for pregnancy, while based on the age of first marriage is not much different. More than 80 percent of those occur in women in the middle to lower wealth index and women who have never used contraception. Nearly 70

percent of unwanted events were reported by women with more than two and women who wanted more than two children. As many as 57.3 percent of all UP incidents were reported by married women who were not working, and nearly two-thirds by married women with health insurance. Unplanned pregnancies (UP) were almost entirely reported by women who were not pregnant (94.1%). Just 5.9 percent were reported by pregnant women when data collection. One in four UP is at an age that is not ideal for pregnancy, while based on the age

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Table 2. Results of Bivariate and Multivariate Analysis of Determinants of UP

Variables	Bivariate			Multivariate		
	OR	95% CI	p-value	OR	95% CI	p-value
Age (years) †						
Not Ideal	1.736	1.335-2.256	<0.001	1.579	1.202-2.075	0.001
Ideal	ref					
Age at first marriage						
≤ 20 years	1.477	1.175-1.857	0.001	1.227	0.966-1.558	0.094
≥ 21 years	ref					
Wealth Index						
Middle Low	1.538	1.157-2.044	0.003	1.374	1.021-1.849	0.036
High	ref					
Education						
Uneducated – Junior High	1.193	0.949-1.500	0.131			
Senior High – Graduate	ref					
Contraception Use						
Never	1.775	1.293-2.435	<0.001	1.360	0.977-1.893	0.068
Ever	ref					
Ideal number of children						
≤ 2	0.819	0.640-1.049	0.114			
> 2	ref					
Number of children						
> 2	2.447	1.919-3.122	<0.001	2.270	1.750-2.943	<0.001
≤ 2	ref					
Working Status of the Woman						
Not working	1.413	1.123-1.779	0.003	1.684	1.318-2.153	<0.001
Working	ref					
Own Health Insurance						
No	1.023	0.807-1.297	0.848			
Yes	ref					

Source: Processing of 2019 SKAP Secondary Data of North Sumatra Province

The time of pregnancy, the number and composition of children you have, and the number of children you want are factors affecting fertility (Bongaarts, 1990). Including the age of the woman at the time of her last

pregnancy, age at the time of her first marriage, wealth index, number of children she had, history of contraception use, and employment status. Further multivariate analysis showed that age that is not ideal for pregnancy,

wealth index, current number of children, and unworking women are determinants of unplanned pregnancies in married women of childbearing age participating in SKAP North Sumatra Province in 2019.

The analysis result showed the relation between a woman's age at pregnancy and the incidence of unplanned pregnancy, with those who experience pregnancy at unideal age (less than 21 years or above 35 years) having a 1.5 times chance of experiencing UP compared with women who are the ideal age to get pregnant. In general, previous studies have shown the same trend that an increase in a woman's age during pregnancy is directly proportional to the reporting of pregnancy as a UP (Anggraini et al., 2018). Other research in Indonesia also shows that women who are not of the ideal age have 1.6 times the risk of experiencing unwanted pregnancy (Supriyadi and Yanti, 2020). It may be due to the increased risk of pregnancy experienced by women in the older age group (Hajizadeh and Nghiem, 2020). Pregnancy at too old (over 35 years) places women at risk of pregnancy-related complications, including gestational diabetes, hypertension, and the risk of giving birth to babies with abnormalities (Dietl et al., 2015). In addition, pregnancy at the age of over 40 years also increases the risk of fetal death in the womb and babies born with low birth weight (Hoffman et al., 2007).

Meanwhile, women who experience pregnancy at a too-young age have an increased risk of pregnancy complications, including 1.8 times the risk of anemia and 3 times the risk of experiencing urinary tract infections and pre-eclampsia, where the risk and complications of pregnancy increase when the woman pregnant in young age (Leppälähti et al., 2013). The age of a woman when she first marries or starts reproduction is related to the number of possible pregnancies during that reproductive period. The younger a woman starts pregnancy, the longer the period that allows the woman to experience pregnancy (Raharja, Fadila and Rahmadewi, 2021). Besides that, a woman's age is also related to the use of contraception, where women over 35 generally have low contraceptive participation because they think they are not fertile enough to experience

pregnancy. Therefore, even though married couples aged >38 years do not plan to have additional children, they do not use any contraceptive methods (Saputri et al., 2022).

Unplanned pregnancies are often associated with low economic (financial) levels and low levels of education. Based on this study, the incidence of unwanted pregnancy among married women in North Sumatra Province is significantly related to the wealth index, where women with a middle-lower index have an unwanted pregnancy risk by 1,374 times compared to women with a high wealth index (p 0.036). It may be related to the low ability of women in the middle to lower wealth index to access contraception services in the context of planning a pregnancy, so most cases of UP occur in women with the lowest economic index (Anggraini et al., 2018; Muthmainnah et al., 2020). Research in Banten also shows that a low wealth index is the unmet need predictor for contraception among married couples (Saputri et al., 2022). Research using IDHS 2017 data also shows an increase in the use of modern contraception in childbearing-age couples in the middle-upper wealth index (Irawaty and Gayatri, 2021). The wealth index also describes the ability economically to meet needs during pregnancy and after childbirth. It is supported by a study showing income is related to a woman's readiness for pregnancy (Oktalia and Herizasyam, 2016). Meanwhile, analysis of the determinants of adverse events with the 2012 IDHS data indicates that the incidence of adverse events is not significantly related to the wealth index (Andini, Mutahar and Yeni, 2020).

The results of this study indicate a strong relationship between the number of children more than two and the reporting of pregnancy as an unwanted event by 2.70 times compared to women with fewer children. The trend of increasing KTD along with the number of parity is also on a national scale, where the percentage of women who do not want more children increases as parity increases (BKKBN and BPS, 2019). The relationship between the number of children and planned pregnancies has been consistently demonstrated by studies in developing and developed countries (Curtis, Evens and Sambisa, 2011; Bongaarts, 2015;

Anggraini et al., 2018; Muthmainnah et al., 2020). Furthermore, because the desire for pregnancy is influenced by a woman's intention to reproduce, parity is the most dominant determinant of the various determinants that affect pregnancy intentions (Bongaarts, 2015; Andini, Mutahar and Yeni, 2020). It is, of course, influenced by the fertility intentions of women of childbearing age and their partners so that women who have fulfilled their fertility intentions will use contraception to prevent pregnancy (Irawaty and Gayatri, 2021). Research on fertility intentions using national scale survey data for 5 consecutive years shows that women who have decided to terminate the will to reproduce again will be more likely to report the additional pregnancy as a UP compared to women who have not chosen whether to end its reproductive intent (Supriyatna, Dewi and Wilopo, 2018).

Based on the research results, married women who do not work had 1,674 times the risk of experiencing unwanted pregnancy compared to married women who worked. Work is related to women's access to income. It may also be related to the relationship between the wealth index and unwanted pregnancy, where married women with a lower wealth index have a higher risk of having an unplanned pregnancy. The women's employment status still shows inconsistent results, whereas research by Muthmainnah et al., (2020) indicates an insignificant relationship between work and UP. Meanwhile, other studies show that unplanned pregnancies are more common in women who are old, have low education, and women who are not working (Yanikkerem, Ay and Piro, 2013). It is possible because women with access to work will have better opportunities to access pregnancy prevention efforts, including access to information and contraceptive devices/drugs (Irawaty and Gayatri, 2021). Therefore, working provides higher financial opportunities and is indirectly related to influencing women and their partners to be better at planning a pregnancy. Therefore, working provides higher financial opportunities and is indirectly related to influencing women and their partners to be better at planning a pregnancy (Yanikkerem, Ay and Piro, 2013). In addition, working status relates to women's participation in efforts

to increase family income and is therefore indirectly with increased access to preventing pregnancy (Yazdkhasti et al., 2015).

Conclusions

The results of the analysis show that one in four pregnancies in married women who are respondents to the 2019 SKAP in North Sumatra Province experience unplanned pregnancies. It can be concluded that the factors associated with unplanned pregnancies in married women in North Sumatra Province are age at pregnancy, middle to lower wealth index, having two or more children, and the status of women who are not working. The number of children of more than two is the most dominant determinant in influencing the incidence of unwanted pregnancy. The results of the analysis show that one in four pregnancies in married women who are respondents to the 2019 SKAP in North Sumatra Province experience unplanned pregnancies. It can be concluded that the factors associated with unplanned pregnancies in married women in North Sumatra Province are age at pregnancy, middle to lower wealth index, having two or more children, and the status of women who are not working. The number of children of more than two is the most dominant determinant in influencing the incidence of unwanted pregnancy.

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