



## Determinants of Unmet Need Family Planning Among Married Woman of Reproductive Age in North Sumatra (Susenas March 2019)

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**Abstract.** Unmet need is one of the obstacles of the family planning programs that can reduce contraceptive prevalence. The percentage of total unmet need in North Sumatra Province is 12.1 and comparable to the total national unmet need in 2019. This study aims to determine the factors that influence family planning needs and the tendency of married women of reproductive age in North Sumatra Province in 2019 with multinomial logistic regression. The data used is sourced from the Susenas KOR 2019. Results show that married women of reproductive age having a greater tendency to experience the unmet need for limiting are characterize as 35-49 years old, living in urban areas, and with junior high/equivalent levels. Meanwhile, the characteristics of married women of reproductive age (WUS) who have a greater tendency to experience the unmet need for spacing such as aged 15-24 years, Age at First Marriage more than 18 years, and with a higher education level. Therefore, a more optimal commitment and support from family planning field workers in family planning counselling are needed and increase equitable access and quality of family planning services.

### 1. Introduction

North Sumatra is a province that ranks fourth with the largest population in Indonesia after West Java, East Java, and Central Java. According to data from the Badan Pusat Statistik (BPS), the population in North Sumatra Province reached 14,562,549 people in 2019. One of the problems related to population in the North Sumatra Province is a population growth rate that is still high, thus triggering an increase in population from year to year. A population growth rate is a number that shows the population growth rate per year in a certain period. The population growth rate in North Sumatra Province from 1990-2000 was 1.20 percent and increased from 2000-2020 to 1.28 percent per year. The increase in the rate of population growth has a relationship with fertility indicators, such as Total Fertility Rate (TFR), Gross Reproductive Rate (GRR), Net Reproductive Rate (NRR), and Crude Birth Rate (CBR) [1].

Following the direction of government policy 2015-2019, all ministries/agencies insisted on participating in the success of the 2015-2019 Development Vision and Mission, namely to realizing "Indonesia that is sovereign, independent and has a personality based on cooperation" Therefore, the National Population and Family Planning Agency (BKKBN) establish the Target of Population Development and Family Planning (KB) that listed in the National Medium-Term Development Plan (RPJMN) 2015-2019, namely: (1) decreased TFR, (2) increased prevalence of modern contraception, (3) decreased unmet need for family planning, (4) an increase in active family planning participants who use Long-Term Contraceptive Methods and (5) decreased contraceptive dropout rates. Level fertility can be determined by various factors, including social development and economy and the effect of



contraception. TFR in North Sumatra in 2017 was at 2.66 and increased to 3.04 in 2019. The TFR value occupies Sumatra North as the province with the third-highest TFR in Indonesia, after East Nusa Tenggara Province and Maluku. This fact shows that, on average, a WUS will have children as many as 3-4 people during their reproductive period. A region will reach the replacement stage 2 fertility level if a TFR of 2.1 [2].

Family Planning (KB) is a government program to reduce the rate of population growth. In addition, the family planning program also plays a role in the health sector as an effort to improve maternal health through the timing of wanting to have children, set the distance of children, and planning the number of births desired later. The launching of the family planning program supports mothers to have opportunities to maintain and improve their health and well-being. Important family planning indicators to continuously be monitored is the Contraceptive Prevalence Rate (CPR) and the need for contraceptive use that is not met (unmet need for family planning). CPR is the proportion of several women of reproductive age using or whose partner uses a contraceptive method [3]. Based on the Performance Accountability Report of Government Agencies (LAKIP) BKKBN of North Sumatra Province in 2019, the prevalence of modern contraception in The last three years has shown poor development. Apart from not reaching the target that has been established, the prevalence of modern contraception continues to decline from 48.3 percent in 2017 to 45.42 percent in 2019. The next indicator in implementing the family planning programs that is important to monitor is an unmet need. Unmet need is an unmet need for family planning services. Percentage of total unmet need in North Sumatra Province experienced a decline from 25.3 percent in 2017 to 12.1 percent in 2019. The BKKBN stated that the total unmet need of 12.1 was worth the percentage of total national unmet need in 2019 and is still considered high.

There are two kinds of unmet need for family planning: unmet need (for limiting births) and unmet need for spacing (for birth spacing). Unmet need for spacing has a smaller percentage when compared to the unmet need for limiting [4]. That is, the unmet need for spacing makes a minor contribution to the increased fertility. However, the unmet need for spacing still has to be handled because of the fertile period a woman is limited to a certain age so that it affects birth control. The increasing age of a woman will result in hormonal imbalances in the body and decreased function of reproductive organs, resulting in a decrease in female fertility [5]. Research in India shows a significant effect of the contraceptive needs fulfillment for thinning by birth control [6]. Meanwhile, limiting births will have a more significant impact on fertility decline, and birth spacing significantly reduces the number of child deaths [7]. Thus, the government needs to pay special attention to both on unmet need for limiting and the unmet need for spacing.

Various factors can influence the occurrence of unmet need for family planning. Several factors that can affect the status of unmet need include age [8], age at first marriage [4], type of residence [9], WUS education level [10], and working status [11]. In addition, factors related to religion and culture can also affect the status of unmet need. In the Toba Batak society, boys are prioritized because they are the carriers of the clan and the successor of family descendants. Therefore, if you do not have a son, the lineage in the family will become extinct [12]. Qualitative research in the coastal area of Percut Sei Subdistrict, Deli Serdang Regency, North Sumatra Province gives the results that the factors unmet need are local culture/customs that are passed down from the respondent's parents who have never had an unmet need become a family planning acceptor so that the birth rate is high [13]. Meanwhile, the research results in South Tapanuli Regency and Asahan Regency showed different results, where the factors causing the occurrence of unmet need were knowledge, wife's occupation and previous participation in family planning [14]. It is known that with the even of a cultural shift in the research area, cultural factors are no longer an obstacle to participating in the family planning program.

Previous studies related to the unmet need for family planning had been carried out in Indonesia. There is research related to the unmet need for family planning in married women in East Java using data Indonesian Demographic and Health Survey (IDHS) 2012 [15]. That study concluded the existence of relationship indication of education level, type of residence, and information given by family planning field officers toward the unmet need for family planning [15]. Furthermore, there is research that examined the effect of autonomy and sociodemographic characteristics of the unmet need for family planning using data sourced from the IDHS 2017 and implementing multinomial logistic regression.



The study found that age, number of children still alive, area of residence, and knowledge of family planning tools/methods affect unmet need curtailment and restriction. While the variables of women's education and information exposure Family planning in the mass media only affects the unmet need for thinning [16]. Various factors can influence the high unmet need in North Sumatra Province. Therefore, the study has three objectives, namely: (1) knowing the general description and the characteristics of the percentage of unmet need for limiting and unmet need for spacing on WUS with married status, (2) knowing the factors that can affect the status of unmet need for family planning in WUS with married status, and (3) knowing the trend of unmet need for limiting and unmet need for spacing in married WUS in North Sumatra Province in 2019 based on the variables that influence it.

## 2. Data

This study uses data sourced from the National Socio-Economic Survey (Susenas) March 2019, specifically the North Sumatra Province. The unit of observation and the unit analysis of this study covers married women of reproductive age in North Sumatra Province with a total sample of 11,496. According to BPS, women of reproductive age (WUS) are women aged 15-49 years. Here are categorization and reference sources of the variables used in this study:

**Table 1.** Categorization of variables used in research

Variable	Category	Dummy	
<b>Dependent Variable</b>			
Unmet need status	Met Need*	0	
	Unmet need for limiting	1	
	Unmet need for spacing	2	
<b>Independent Variables</b>			
Age	15-24*	0	0
	25-34	1	0
	35-49	0	1
Age at First Marriage (AFM)	≤ 18*	0	
	> 18	1	
Type of residence	Urban*	0	
	Rural	1	
Educational level	College*	0	0
	Junior and senior high school	1	0
	≤ Elementary school	0	1
Working status	Employed*	0	
	Unemployed	1	

## 3. Method

Descriptive analysis using graphic visualization is applied to explore the general status and characteristics of unmet family planning needs in married women with married status. Meanwhile, multinomial logistic regression is employed to investigate the effect of the independent variables toward the unmet need status for family planning in married women with married status in the province of Sumatra North in 2019. There is the multinomial logistic regression model:

$$g_j(x) = \alpha_j + \beta_{j11}D_{11} + \beta_{j12}D_{12} + \beta_{j2}D_2 + \beta_{j3}D_{31} + \beta_{j41}D_{41} + \beta_{j42}D_{42} + \beta_{j5}D_5 \quad (1)$$



- with
- $g_j(x)$  : the  $j$ th logit model
  - $\alpha_j$  : the intercept of logit model for the  $j$ th logit model
  - $\beta_{jk}$  : the regression coefficient of the  $j$ th category and  $k$ th independent variable
  - $D_k$  : dummy of the  $k$ th independent variable
  - $D_{11}$  : dummy variable for the age category of 25-34 years old
  - $D_{12}$  : dummy variable for the age category of 35-49 years old
  - $D_2$  : dummy variable age at first marriage for women in the category of more than 18 years
  - $D_3$  : dummy variable for the type of area in the rural category
  - $D_{41}$  : dummy variable education level is less than junior high school
  - $D_{42}$  : dummy variable of education level junior and high school
  - $D_5$  : dummy variable of unemployment
  - $j$  : the total number of outcome categories of the dependent variable,  $j = 0,1,2$
  - $k$  : the independent variables,  $k = 0,1,\dots,p$

### 3.1 Simultaneous Test

A simultaneous test is applied to find out the significant variables together affect the dependent variable. The test used is the likelihood ratio [17]. The hypothesis used is as follows:

$H_0: \beta_{11} = \beta_{12} = \dots = \beta_{jp} = 0$  (there is no effect between a set of independent variables toward the dependent variable)

$H_1$ : at least one of  $\beta_{jk} \neq 0, j=1,2$  dan  $k=1, 2,\dots,p$  (At least there is one explanatory variable that has a significant effect on the dependent variable)

The test statistics are defined as:

$$G = -2[\ln(L_0) - \ln(L_1)] \quad (2)$$

with:

$L_0$ : maximum likelihood function without explanatory variable

$L_1$ : maximum likelihood function with the explanatory variable

$j$  : number of dependent variable categories,  $j=1,2,\dots,(J-1)$

$k$  : number of independent variables,  $k= 1,2,\dots,p$

When the value of  $G^2 > \chi^2_{(\alpha,p)}$  or  $p\text{-value} < 0.05$ , then the decision is to reject the null hypothesis. This means that there is an influence of the independent variable on the dependent variable significantly simultaneous.

### 3.2 Partial Test

The partial test is used to investigate which independent variables have a significant effect on the dependent variable. The test used is the Test Wald [17]. The following is the hypothesis used in the test:

$H_0: \beta_{jk} = 0$  (there is no effect of the  $k$ th independent variable being tested on the dependent variable)

$H_1: \beta_{jk} \neq 0$  (there is an effect of the  $k$ th independent variable being tested on the dependent variable)

The test statistics used are:

$$W_{jk} = \left( \frac{\widehat{\beta}_{jk}}{se(\widehat{\beta}_{jk})} \right)^2 \quad (3)$$

with:



$\widehat{\beta}_{jk}$  : parameter estimation  $\beta_{jk}$   
 $se(\widehat{\beta}_{jk})$  : standard error estimation  $\beta_{jk}$

When the value  $W_{jk} > \chi^2_{(\alpha,1)}$  or  $p\text{-value} < 0.05$ , then the decision is to reject the null hypothesis. This means that there is an effect of the independent variable being tested on the dependent variable.

### 3.3 The Goodness of Fit Test

The Goodness of Fit Test is used to determine whether the model obtained is appropriate to explain the relationship between the dependent variable and the independent variables [17]. The test used is Pearson chi-square and Deviance chi-square. The test hypothesis used are:

$H_0$ : model is fit (There is no difference between the results of the observations and the predictions of the model)

$H_1$ : model is not fit (there is a difference between the results of the observations and the predictions of the model)

When  $p\text{-value} < 0.05$ , then reject the null hypothesis. The expected result is failure to reject the null hypothesis which means that the model formed is suitable to explain the status of unmet need or there is no difference between the results of the observations with the model's predictions.

### 3.4 Odds Ratio

The odds ratio is the ratio of two odds which is used to determine the tendency of the occurrence of "success" compared to "failure", for  $j=1$  and  $j=2$  obtained score odds ratio as follows:

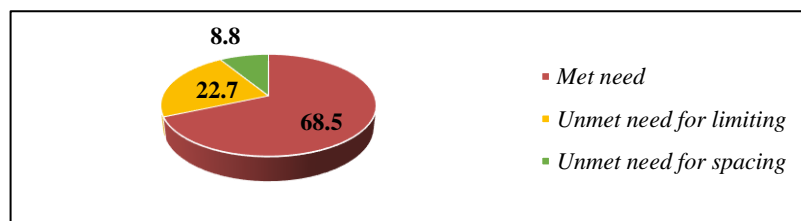
$$\text{when } j=1 \quad OR_1 = e^{\beta_1} \tag{4}$$

$$\text{when } j=2 \quad OR_2 = e^{\beta_2} \tag{5}$$

## 4. Result and Discussion

### 4.1 Percentage of Unmet Need Status of married women of reproductive age in North Sumatra Province in 2019

The unmet need status for married women of reproductive age in North Sumatra Province is presented in Figure 1. Figure 1 shows that about 68.5 percent of married women of reproductive age whose family planning need has been fulfilled or met need. Meanwhile, the status of unmet need is more common in unmet need for limiting versus unmet need for spacing. This fact shows that the unmet need for limiting contributes more to the increase in fertility in North Sumatra.



**Figure 1.** Percentage of currently married women based on unmet need for family planning in the province North Sumatra in 2019

The possible impact of unmet need is an unplanned pregnancy [18]. Therefore, it needs more attention than the government to decrease the unmet need in North Sumatra. Meanwhile, an overview of unmet need status married women of reproductive age status based on the characteristics are:

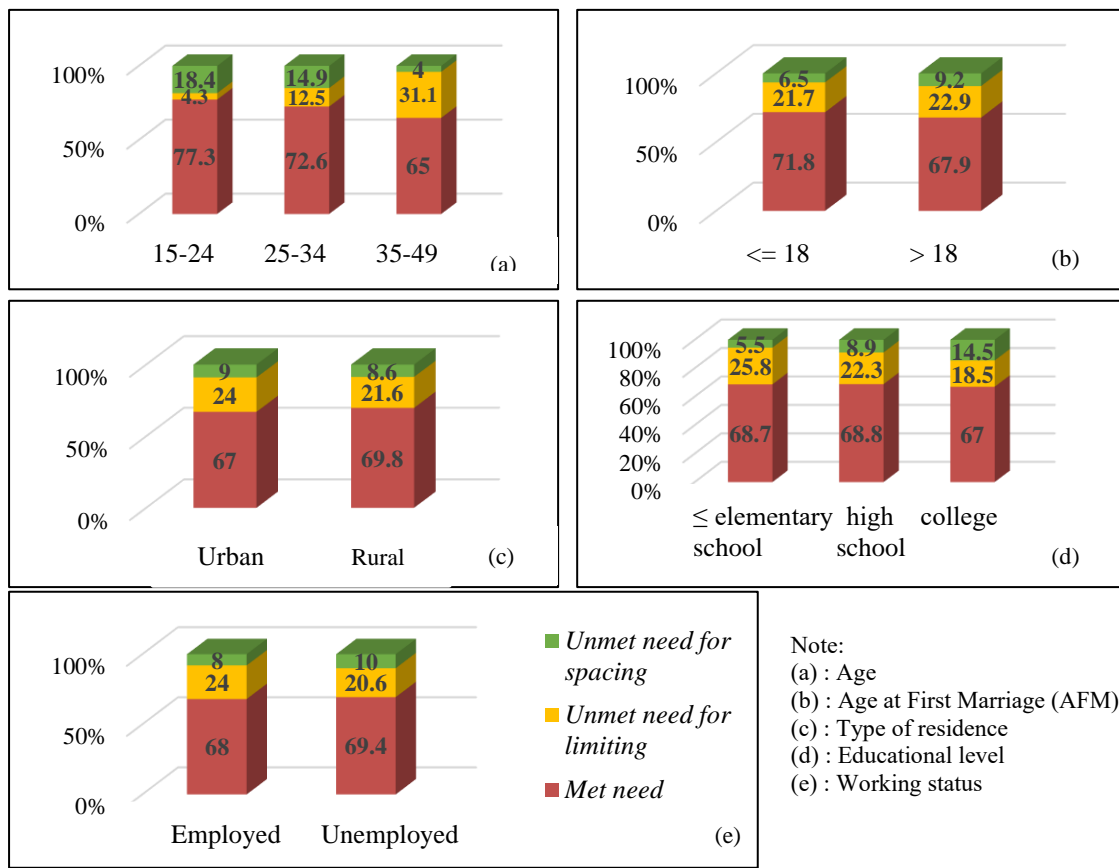


Figure 2. Percentage of unmet need status of married women based on their characteristics

Age is a fundamental variable in demography and is the basis for demographic grouping in vital statistics, censuses, and surveys. Age is also important in studies on mortality and fertility. Considering the age characteristic, Figure 2 shows differences of married women of reproductive age who experience the unmet need for limiting and unmet need for spacing. There is a tendency if the higher the age of the married women of reproductive age, the higher the percentage of unmet need for limiting. Otherwise, the unmet need for spacing decreases with the increasing age of married women. Based on the exploration of Susenas data, there is evidence that married women of the 35-49 year age category have a higher tendency of unmet need for limiting because they do not use contraception for fear of the possible side effects. Moreover, it was also found that 9.6 percent of married women of the 15-24 year age do not use contraception because they disagreed with family planning.

Furthermore, Age at First Marriage (*abbreviated as AFM*) is when women legally and biologically marry for the first time. *AFM* with fertility has a negative relationship, namely the younger the *AFM* a woman, the longer her reproductive period or, the more children will be born. Based on the characteristics of *AFM*, it can be seen that both the unmet need for limiting and the unmet need for spacing are more common in married WUS with the *AFM* category of more than 18 years. In detail, in the *AFM* category over 18 years, 22.9 percent of married women of reproductive age experience unmet need for limiting and, 9.2 percent of currently married women experience the unmet need for spacing. Exploration results with 2019 Susenas data show that as many as 32.9 percent of married women of reproductive age who in the age category at first marriage of more than 18 years are more likely to experience unmet need caused by not using contraception for reasons of fear of the possible side effects.

Based on the characteristics type of area, it is known that the status of unmet need is dominated by married women who live in urban areas. Married women of reproductive age living in urban areas with unmet need status for limiting reached 24 percent, and 9 percent of married women of reproductive age with the status of unmet need for spacing. After exploring the data with the 2019 Susenas, it was found





that 7.2 percent of married women of reproductive age who live in urban areas did not use contraception for reasons that disagreed with family planning.

Education is a teaching and learning activity at all levels, both formal and informal. Meanwhile, unmet need are positively related to women's level of education [19]. Refers to Figure 2, there are differences in the characteristics of the education level in married women with married status who experience unmet need for limiting and unmet need for spacing. The higher the level of education of married women of reproductive age, the lower the unmet need for limiting. However, the higher the level of education of married women of reproductive age, the higher the unmet need for spacing. The results obtained from data exploration show that about 0.3 percent of married women of reproductive age with the category of education level less than junior high school/ equivalent do not use contraception because they do not know.

BPS states that working is an economic activity carried out by a person to obtain or help earn income or profit for at least one hour (uninterrupted) in the past week. Figure 2 shows that the unmet need for limiting tends to happen to married women of reproductive age work. While on unmet need for spacing, more happens to WUS that does not work. Based on the results of exploration with Susenas 2019 data, it is known that there is 34.1 percent of married women work without using contraception for fear of side effects that arise. Meanwhile, WUS who does not work has a lower percentage of 31.5 percent do not use contraception for fear of side effects.

#### 4.2 Effect of Independent Variables on Status Unmet Need Family Planning at Married Women of Reproductive Age in North Sumatra Province in 2019

4.2.1 *Multinomial logistic regression model.* The multinomial logistic regression model can be formulated as follows:

unmet need for limiting:

$$\hat{g}_1(x) = -2.982 + 1.137 D_{11}^* + 2.142 D_{12}^* + 0.007 D_2 - 0.159 D_3^* + 0.195 D_{41}^* + 0.236 D_{42}^* - 0.019 D_5$$

unmet need for spacing:

$$\hat{g}_2(x) = -1.221 - 0.308 D_{11}^* - 1.463 D_{12}^* + 0.404 D_2^* - 0.005 D_3 - 0.491 D_{41}^* - 0.737 D_{42}^* + 0.041 D_5$$

with:

\*: significant at  $\alpha = 0,05$

4.2.2 *Simultaneous test.* The results of the simultaneous test processing with the likelihood ratio test produce the p-value of 0.000. The p-value is less than 0.05 leading to a decision to reject the null hypothesis. Hence, at a significance level of 5 percent, at least one independent variable factor affects the status of unmet need for family planning.

4.2.3 *Partial test.* The Partial test with the Wald test is employed to investigate the independent variables that significantly affected unmet need status in married women of reproductive age in North Sumatra Province in 2019. The following are the results of the partial test on married women with unmet need status for limiting:



Unmet need for limiting:

**Table 2.** The result of the partial test on married women with status of unmet need for limiting

Variable	$\hat{\beta}$	S.E	Wald	df	p-value	$Exp(\hat{\beta})$
<i>Intercept</i>	-2.982	0.193	238.582	1	0.00*	
<b>Age</b>						
15-24 (ref)						
25-34	1.137	0.177	41.32	1	0.000*	3.118
35-49	2.142	0.173	153.696	1	0.000*	8.519
<b>Age at first marriage (AFM)</b>						
≤18 (ref)						
>18	0.007	0.066	0.011	1	0.915	1.007
<b>Type of area</b>						
Urban(ref)						
Rural	-0.159	0.048	10.853	1	0.001*	0.853
<b>Educational level</b>						
College(ref)						
Junior and senior high school	0.195	0.076	6.597	1	0.010*	1.215
≤ Elementary school	0.236	0.085	7.736	1	0.005*	1.266
<b>Working status</b>						
Employed(ref)						
Unemployed	-0.019	0.051	0.134	1	0.714	0.982

Ref = reference category      \* = significant at  $\alpha = 0.05$

Table 2 shows that the independent variables that significantly affect the unmet need for limiting married women of reproductive age in Sumatra Province in 2019 at a significance level of 0.05 are age, type of area, and education level. Meanwhile, the *AFM* and working status have no significant effect.

*AFM* variable has no significant effect on the unmet need for limiting married women of reproductive age in Sumatra Province in 2019. This result is in line with the descriptive analysis that the percentage of married women of reproductive age who experience the unmet need for limiting in the *AFM* category under 18 years and over 18 years did not show a difference. Furthermore, research in India showed that *AFM* is not affecting the status of unmet need. Based on the data exploration, there is evidence causing married women of reproductive age in North Sumatra Province do not to use contraceptive methods due to the fear of side effects [20]. BKKBN of North Sumatra Province stated that there are gaps in fostering adolescent understanding of reproductive health. There are still many young marriages that are marked by a low median *AFM* for women in 2019. It is also known that the working status variable does not significantly affect the status of the unmet need for limiting in married women of reproductive age in Sumatra Province in 2019. Then, there is research in Indonesia states that there is no significant relationship between employment and status unmet need. It was found that working mothers were more likely to be busy and had less opportunity to access contraception [21]. The BKKBN of North Sumatra Province stated that there are still gaps in unmet need between expenditure levels. Based on the exploration results with Susenas 2019 data, the percentage of married women of reproductive age with per capita expenditure below the poverty line are 7.8 percent of unemployment the category and 7.7 percent for the employment category.





Unmet need for spacing:

**Table 3.** The result of the partial test on married women with status of unmet need for spacing

Variable	$\hat{\beta}$	S.E	Wald	df	p-value	$Exp(\hat{\beta})$
<i>Intercept</i>	-1.221	0.158	59.859	1	0.000*	
<i>Age</i>						
15-24 (ref)						
25-34	-0.308	0.104	8.712	1	0.003*	0.735
35-49	-1.463	0.115	161.326	1	0.000*	0.232
<i>Age at first marriage (AFM)</i>						
≤18 (ref)						
>18	0.404	0.108	14.009	1	0.000*	1.498
<i>Type of area</i>						
Urban(ref)						
Rural	-0.005	0.071	0.005	1	0.944	0.995
<i>Educational level</i>						
College(ref)						
Junior and senior high school	-0.491	0.090	29.419	1	0.000*	0.612
≤ Elementary school	-0.737	0.117	39.407	1	0.000*	0.478
<i>Workin status</i>						
Employed(ref)						
Unemployed	0.041	0.073	0.319	1	0.572	1.042

Ref = reference category

\* = significant at  $\alpha = 0.05$

Based on Table 3, the independent variables significantly affecting the unmet need for spacing in WUS with married status in North Sumatra Province in 2019 are age, AFM, and education level. However, the type of area does not significantly affect the unmet need for spacing on married women of reproductive age in North Sumatra Province in 2019. These results align with the descriptive analysis that does not show differences in married women of reproductive age experiencing the unmet need for spacing family planning between those who live in rural and urban areas. In line with this result, the type of area does not significantly affect the unmet need for spacing [10]. With the development of cellular communication tools and the ease of transportation, someone can communicate with other people even though they live in rural areas [22]. In addition, the more open access roads can make it easier for people in rural areas to access health services [22]. The BKKBN of North Sumatra Province stated that there are still gaps in unmet need. There is a gap in obtaining information about the Population, Family Planning, and Family Development (KKBPK) program between rural-urban areas. There is also a gap in the quality of family planning services between urban and rural areas. Due to this fact, BKKBN is still trying to increase the intensity of family planning services in urban areas. Next, the variable of working status also does not significantly affect the status of unmet need for spacing. Based on the results of data exploration, it is found that 34.1 percent of married women work without using contraceptives because they are afraid of side effects. According to the explanation in the inferential analysis on the status of unmet need for limiting, there are still unmet need gaps between expenditure levels. Based on the Susenas 2019, data shows that 7.8 percent of married women of reproductive age have per capita expenditures below the poverty line in the unemployed category and 7.7 percent in the employed category.

**4.2.4 Goodness of Fit.** The goodness of fit test in this study is applied to determine whether the model is suitable for explaining the relationship between status variables unmet need with independent variables. Based on the test, the value p-value of the Pearson chi-square and Deviance chi-square are 0.606 and 0.290 respectively. Both of the p-values are more than 0.05, leading to the decision not to



reject the null hypothesis. Thus, it can be concluded that with a significance level of 5 percent, the model formed by multinomial logistic regression is appropriate to explain the variables that affect the status of the population unmet need family planning at WUS is married in North Sumatra Province.

#### 4.2.5 Odds Ratio

##### **Unmet need for limiting:**

##### **Age**

The odds ratio of variable age in the category 25-34 years is 3.118, which means that married women aged 25-34 years tend to be 3.118 more likely to experience the unmet need for limiting than those aged 15-24 years. Meanwhile, married women aged 35-49 years tend to 8.519 times to experience the unmet need for limiting compared to 15-24 years. Based on this result, the older the married women of reproductive age, the high the tendency of which they will experience the unmet need for limiting. The risk of married women of reproductive age experiencing unmet need increases with age [8]. Furthermore, the group of young women tend to use contraception methods because they have more awareness about the unmet need. A previous study revealed that young women have more access to adolescent health services and have time to visit related health services and counselling unmet need than older women [23].

##### **Type of Area**

Based on the characteristic of the type of area, the value of regression coefficient value is -0.159 and the odds ratio is 1.172. This odds ratio means that married women of reproductive age living in urban areas tend to be 1.172 higher to experience unmet need for limiting compared to married women of reproductive age living in rural areas. These results are not in line with the previous study which found that women in rural areas had a higher proportion of unmet need for family planning than women who live in urban areas [24]. However, the results are the same as the preceding study which state that women who live in urban areas are more likely to experience unmet need for limiting [19].

##### **Education Level**

Due to the education level characteristics, the odds ratio for the below junior high school/equivalent category is 1.266. This value means that married women of reproductive age with education levels in the category less than junior high school/equivalent tend to experience the unmet need for limiting 1.266 times greater than the higher education levels. Meanwhile, the odds ratio in the senior high school/equivalent category is 1.215. This means that married women of reproductive age with education level of junior high school/equivalent and senior high school/equivalent tends to of 1.215 to experience the unmet need for limiting compared to college. In summary, it can be said that the lower the education level of married women of reproductive age, the greater the tendency to experience the unmet need for limiting [11]. The level of education will affect unmet need, where the higher the level of education of women, the tendency to experience unmet need will decrease [9]. Literacy is the most essential factor in increasing knowledge about contraception and the desire to space birth.

##### **Unmet need for spacing:**

##### **Age**

For the unmet need for spacing, the odds ratio of the 25-34 years category is - 0.735. This means the tendency of married women of reproductive age of 25-34 years old to experience the unmet need for spacing is 0.753 times less than those are in the 15-24 years old category. In other words, married women of reproductive age of 15-24 years old tend to experience the unmet need for spacing 1.328 times greater than the married women aged 25-34 years old.

Meanwhile, the odds ratio of variable age in the 35-49 years old category is 0.232. This means that the tendency of married women aged 35-49 years to experience the unmet need for spacing is 0.232 compared to married women on reproductive age of 15-24 years. It also means that married women of



reproductive age of 15-24 tend to experience the unmet need for spacing 4.310 times greater than married women aged 35-49 years. Due to these results, the younger married women of reproductive age tend to experience the unmet need for spacing. Based on the data exploration, it was found that 9.6 percent of married women in the age category 15-24 years do not use contraception because they disagreed with family planning. These results are similar to the previous study concluding that the unmet need for spacing decreases as women age [25].

### **Age at First Marriage (AFM)**

The odds ratio of variable AFM is 1.498. This value means that married women of reproductive age whose first age of marriage is more than 18 years old tend to experience the unmet need for spacing 1.498 times greater than those whose age of the first marriage is less than or equal to 18 years old. Further data exploration reports that as many as 32.9 percent of married women of reproductive age whose first age of marriage is above 18 years old have a higher tendency to have the unmet need because of the possible side effects of the contraception methods.

### **Educational level**

The odds ratio in the category of less than junior high school/equivalent is 0.478. This value means that married women of reproductive age with higher education tend to experience the unmet need for spacing 2.092 times greater than those whose education level is less than junior high school/ equivalent.

The odds ratio of variable coefficient for the junior high school or senior high school/equivalent is 0.612. This result means that married women of reproductive age with a higher education level tend to experience the unmet need for spacing 1.634 greater than those whose education level is junior high school or senior high school/equivalent.

Due to this result, the higher the education level of married women of reproductive age, the greater the tendency to experience the unmet need for spacing. The tendency of the WUS education level variable on the unmet need for limiting is inversely proportional to the unmet need for limiting. This phenomenon possibly happens for those who do not use contraception methods because they already know how to prevent pregnancy naturally. Another reason why someone does not use contraception methods may be motivated by negative experiences such as side effects of contraception and failure in applying contraception [19]. So even though a woman with a higher education level may experience an unmet need for spacing. Meanwhile, the level of education will affect the unmet need for limiting, where the higher the education level of women, the higher the knowledge related to contraception and the desire to space births. So the tendency to experience unmet need will decrease.

## **5. Conclusion**

In general, married women of reproductive age in North Sumatra experienced the unmet need for limiting is about 22.7 percent, while 8.8 percent of them have experience of the unmet need for spacing. The independent variables such as the age of the married women of reproductive age, type of area, and level of education significantly affect the unmet need for limiting. The age of the married women of reproductive age, age at first marriage, and the level of education have a significant effect on the unmet need for spacing.

Married women of reproductive age of 35-49 years old, living in urban areas, and education levels less than junior high school tend to experience the unmet need for limiting in North Sumatra. Meanwhile, married women of reproductive age of 15-24 years old, married at the first time above 18 years old, and has high education level tends to experience the unmet need for spacing.

Based on the conclusions, it is necessary to optimize the commitment and support of the family planning field workers in family planning counselling and increasing equitable access and quality of family planning services, such as increasing socialization activities, counselling on family planning programs, and socializing the ideal number of children in rural and urban areas. Moreover, it is also necessary to improve the quality of family planning program services to minimize contraceptive failure or the side effects of contraception usage and reduce the status of married women who do not use contraception for fear of side effects. Further study may enhance the analysis by applying the latest IDHS data, covering many factors related to family planning services.



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