THE DETERMINANTS OF ASSESSING ANTENATAL CARE SERVICE ON MIDWIVES DURING THE COVID-19 PANDEMIC

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ABSTRACT

The implementation of the Large-Scale Community Social Restriction (PSBB) policy during the COVID-19 pandemic aimed to limit the spread of the virus in the community, which resulted in the limited activities of the community, including pregnant women. The lack of information related to health care or antenatal care (ANC) faced by pregnant women results in decreased coverage of K1 and K4 visits. Deli Serdang Regency is one of the districts that experienced a declined antenatal care visit. Data from the Health Department in 2020 indicated a 1.53 per cent decrease in the K1 visit, while K4 was increased by 2.99 per cent. The purpose of the study was to analyze the factors related to antenatal care examinations during the COVID-19 pandemic in the Deli Serdang district. This research implemented a cross-sectional quantitative design using primary data. Data were collected through interviews using a questionnaire. Data collection was performed in November 2020 in Sunggal District and Hamparan Perak District, Deli Serdang Regency, North Sumatra Province. The number of respondents was 154 pregnant women, which were selected using a simple random sampling. The dependent variable is the ANC examination by the midwife. The independent variables include the age of pregnant women, age at first marriage, employment status, education, income, health insurance ownership, husband's age, and childbirth plans. Data were analyzed using simple logistic regression analysis, with $\alpha = 0.05$. The result showed that the sociodemographic characteristics of pregnant women who carry out ANC examinations by midwives are pregnant at an ideal age (age less than 35 years), married for the first time at the age of less than 24 years, not working, having a low level of education with income 3 million/month, not having health insurance and planning to have birth at the midwife. The analysis also showed that there is a smaller percentage of conducting ANC examinations in midwives among women with higher education. Based on the study's results, it was found that the variables that significantly related to conducting ANC examination in midwives were age, age at first marriage, have a spouse withing ideal age, and planning childbirth at the midwife.

Keywords: Antenatal care, COVID-19, Midwife, Pregnancy

1. INTRODUCTION

In early March 2020 the World Health Organization officially declared Corona Virus Disease 2019 or abbreviated COVID-19 as a pandemic. This means that almost all countries worldwide including Indonesia have infected by the spread of COVID-19. The government immediately implemented policies aimed at limiting the spread of the virus in the community through the Large-Scale Social Restriction (PSBB) policy. Policy implementation has impacted on limited community activities, including for pregnant women, because pregnant women are considered a population at greater risk for exposure to infection [1]. As a result, during the COVID-19 pandemic, pregnant women faced a lack of information regarding antenatal care (ANC), they also felt socially isolated and had to performed pregnancy examinations without their partners [2].

In addition, there is a recommendation to postpone pregnancy check-ups and delayed pregnancy classes for pregnant women. Furthermore. Inadequate preparedness of services in terms of personnel and infrastructure, including personal protective equipment [PPE] for health service providers, results in an increasing uncertainty for pregnant women to access ANC

[3]. Studies indicated that COVID-19 results in a decline in pregnancy checks. A study in the United States found that nearly a third of pregnancy monitoring visits were changed, canceled, or rescheduled from mid-March to mid-May of 2020 [4]. A study in France even showed that one in five pregnant women did not have a pregnancy check during the COVID-19 pandemic [1].

Routine ANC checks benefit pregnant women and their babies because health screening within a certain period allows women to obtain information about the pregnancy [1]. In addition, conducting antenatal care examinations enhance women to obtain an explanation of the sign of pregnancy distress and any complications of pregnancy which leads to increased awareness and results in a lower occurrence of maternal morbidity and mortality [5,6].

Various research shows several factors associated with ANC examinations. A European study shows that living in urban areas, women's education, husband's education, and childbirth plans are significant for ANC examinations [7]. Meanwhile, studies in Africa enlighten other factors associated with ANC examination. For example, the average monthly family income and unplanned pregnancy contribute to ANC examinations in Ethiopia [8]. Furthermore, antenatal check in Guinea was associated with socio-demographic, financial factors, and exposure to the media [9]. During the COVID-19 pandemic, women's anxiety about COVID-19 infection was associated with assessing antenatal care [10]. In addition to individual factors, ANC examinations are also influenced by factors related to the service provider, namely the lack of trained health workers and the unfriendliness of health workers [11].

As experienced in another region, the coverage of ANC Deli Serdang Regency decreased during the COVID-19 pandemic. Based on data from the Health Department Office, during 2020, as many as 47,645 people accessed the first ANC examination (K1), while only 44,304 people accessed the fourth ANC visit (K4). This data reflects the 1.53 percent decrease in K1 visits, and a 2.99 percent increase in K4 visits [12]. Based on these conditions, the researchers were interested in examining what factors were related to antenatal care examinations for pregnant women during the COVID-19 pandemic in Deli Serdang Regency.

2. METHODS

This study implemented a cross-sectional design using primary source data. Data collection was performed in November 2020 using a questionnaire in Sub-district Sunggal and Sub-District Hamparan Perak, Deli Serdang Regency. The number of respondents was 154 pregnant women, taken using a simple random sampling method. All the pregnant women who participated in the study gave their consent before the interviews, and the health protocol [using a face mask, 2-meter distance, and no physical contact] was applied during the interview.

The dependent variable of this study was antenatal care examination at the midwife's service. The independent variables of this study were age, age at first marriage, education, employment, household income, health insurance, spouse age, spouse education, and plan of childbirth. Age was classified into age ideal for pregnancy (21-35 years old) and unideal (20 years or less and 36 years or older). Age at first marriage was divided by ideal (24 years or more) and unideal (less than 24 years). Education was classified into low-level education (no education and primary school), middle-level education (junior high school and senior high school), and high-level education (vocational college/ university). Household income was divided based on the regional minimum wage regulated by the local government of the Deli Sedang Regency of 2020.

Participants' characteristics were displayed descriptively using frequency and percentage. Bivariate association between the dependent variable and each independent variable was assessed using simple logistic regression analysis. The association between the sociodemographic variable and ANC provider was shown by the proportion of pregnant women assessing ANC examination at midwife's service, odds ratio, and p-value. A significant association was determined if a p-value of 0.05.

3. RESULTS AND DISCUSSION

Table 1 shows the characteristics of respondents based on socio-demographics. Of the 154 respondents, most pregnant women accessed ANC examination at a midwife service. More than

half respondents (78%) were aged under 35 years, with most of the women married for the first time at the age of > 24 years, having had secondary education and above. The pregnant women are mostly unemployed, and only 21 percent are working and have a household income of less than 3 million Rupiah. More than half of pregnant women have health insurance and having spouses aged within the ideal category and planning to give birth to a midwife service.

Table 2. Characteristics of the participants

Variable	*Frequency (f)*	*Percentage (%)*
ANC Services		
Midwife	128	83.0
Another ANC provider	26	17.0
Age		
≤ 35	120	78.0
≥ 36	34	22.0
Age at first marriage		
≤ 24	28	17.0
> 24	126	83.0
Employment		
Working	32	21.0
Housewife	122	79.0
Education		
Low level	26	17.0
Middle level	115	75.0
Upper level	13	8.0
Household Income		
>3.000.000	32	20.0
≤ 3.000.000	122	80.0
Health Insurance		
Yes	105	68.0
No	49	32.0
Spouse Age		
≤ 35	96	62.0
≥ 36	58	38.0
Planned childbirth service		
Midwife	86	56.0
Other service provider	68	44.0

The association between sociodemographic and pregnant women accessing ANC at midwife service are shown in Table 2. Based on bivariate analysis, it is found that ANC examinations by midwives were mostly accessed by mothers with the ideal age for pregnancy (<35 years). About 87% of ideal-age mothers access ANC at midwifes compared to 71% of unideal-age pregnant women. Reversely, the delivery of antenatal care services should be prioritized among the at-risk age group because of the increased level of vulnerability to pregnancy and the higher risk for pregnancy complications compared to the non-risk age group [13]. Pregnant women aged 20-35 years have a lower risk during pregnancy and childbirth because, at that age range, they already have maturity in terms of reproductive, mental, and financial health so that they are able and ready to accept the pregnancy and the birth of a baby. In comparison, pregnant women aged less than 20 years and 35 years or older have a higher chance of being at risk during pregnancy and childbirth due to physical, mental, and reproductive maturity conditions that are either too early for reproduction at a young age, or a decline in gestational on an older woman [14]. Research has also shown that giving birth to children at an older age has the potential for miscarriage [15]

The statistical test of the relationship between age and ANC examination at a midwives service shows a significant relationship between mother's age and ANC examination at midwives service, with pregnant women aged < 35 years being almost three times more likely to perform ANC examinations at midwives compared to mothers aged > 35 years (p-value = 0.031, OR = 2.708, 95% CI = 1.904-6.703). This finding is in line with previous research that maternal age is significant in the use of antenatal care [16–18] However, it is different from research in Banjar and Boalemo districts that age has no significant relationship with ANC visits [14,19].

Based on the age at first marriage, as many as 87% of pregnant women married at the age of 24 years or younger. Referring to the age limitation defined by the WHO, which defined that adolescents are at the age limit of 11 to 24 years, it means that most participants were married at a young age. Getting married at an early age has a wide impact, not only on women and their partners but also on society. The real impact is the low quality of the family due to the physical readiness of prospective teenage mothers to conceive and give birth to their babies. In addition, the young mothers are faced with household chores,

financial problems, and social issues such as social problems and gender inequality, which can lead to a continuous cycle of poverty, increasing illiteracy, poor health in future generations, and hampering the welfare of the wider community both in the short and long term [20]. Based on this impact, the BKKBN has promoted an ideal age limit for couples who are getting married which were over 21 years old for women and 25 years old for men, with the hope that the prospective couple has reached physical maturity and has been prepared psychologically and financially. The statistical test shows that mothers who first married at the age of 24 years or younger were three times more likely to have an ANC examination by midwives compared to mothers who age at first marriage was older than 24 years (p-value = 0.021, OR = 3.037, 95% CI =1.182 -7.802).

Table 2. Association between Sociodemographic and ANC service

Variable	ANC at Midwife		N	*p-value*	OR	95% CI
	No	Yes				
Age Ideal for Pregnancy						
Yes	13%	87%	120	0.031*	2.708	**1.904-6.703**
No	29%	71%	34		ref	
Age at first marriage						
≤ 24	13%	87%	126	0.021*	3.037	**1.182-7.802**
>24	32%	68%	28		ref	
Employment						
Working	6%	94%	122	0.089	3.673	**0.820-16.453**
Housewife	28	31.5	32		ref	
Education						
Low level	12%	88%	26	0.415	0.584	**0.160-2.127**
Middle level	18%	82%	115	0.736	0.736	**0.104-4.933**
Upper level	15%	85%	13		ref	
Household Income						
> 3.000.000	13%	87%	32	0.46	1.450	**0.490-4.838**
≤ 3.000.000	18%	82%	122		ref	
Ownership of Health Insurance						
Yes	18%	82%	105	0.558	0.754	**0.294-1.935**
No	14%	84%	49		ref	
Spouse Age						
Ideal	11%	89%	96	0.024*	2.696	**1.140-6.371**
Unideal	26%	74%	58		ref	
Planned childbirth service						
Midwife	10%	90%	86	0.020*	2.852	**1.180-6.890**
Other service provider	25%	75%	68		ref	

According to employment status, 94 percent of pregnant women who performed ANC checks at midwives are housewives. However, womens' employment variable shows no significant association with the behavior of antenatal care in midwives. The result of this research is in line with previous research, which indicated that there is no correlation between women who work and

ANC examinations. Furthermore, the research shows that working mothers also have a high awareness of carrying out pregnancy checks by making time and making appointments in midwife's services during the COVID-19 pandemic, so pregnant women who work can do regular ANC checks [17,21].

Based on the education variable, in general, pregnant women who underwent ANC examination at midwives service were at a low level of education (88%). However, the statistical test shows no significant relationship between education and ANC examination. In contrast. several previous studies has shown that education is related to ANC examination [7,16,17,22]. The results of this study are interesting, it turns out that pregnant women with higher education levels have the smallest percentage of conducting ANC examinations in midwives. This is reflected in the percentage of ANC examinations for mothers with low education, which are higher than middle and high. Ideally, the higher the education of pregnant women, the more rational they will behave in maintaining their health and pregnancy. On the other hand, someone with low education (elementary schools) tends to be less caring about ANC visits because of the lack of knowledge about ANC visits and everything related to ANC visits [14].

More than half of pregnant women who earn 3 million/month have their ANC checked by a midwife [88%]. Yet, there is no significant relationship between the income variable and ANC visit. In contrast, research in Ethiopia found that family income is associated with ANC checks; women with low monthly income will not have access to health care providers with complete facilities and vice versa [8].

Based on the health insurance ownership, 86 percent of pregnant women who checked ANC at the midwife appeared to have no health insurance. Also, health insurance ownership shows no relationship with ANC at midwife service. The results of this study are in line with several previous research which show that the ownership of health insurance does not have a significant relationship with the use of delivery assistance because the distance limits a woman's ability and willingness to seek services, especially if transportation availability is limited, communication is difficult, and no hospital facilities [13,23].

Spouse age also shows a significant association with accessing ANC at the midwife. Women who have a spouse aged 36 years or older are 2,696 times more likely to perform ANC examinations at midwives compared to mothers who have husbands of ideal age. 89 percent of pregnant women who had an ANC at the midwife stated that the husband's age was not ideal (p-value = 0.024, 95% CI =1.140-6.371)

As many as 90 percent of pregnant women who get the ANC at the midwife are planning to have childbirth at the midwife. A statistical test shows that planning to have childbirth at a midwife is significantly associated with having antenatal care at the midwife (p-value = 0.020, 95% CI =1.180-6.890). Pregnant women who plan to give birth at a midwife have a 2.851 chance of having an ANC examination at a midwife compared to pregnant women who do not plan to give birth at a midwife.

4. CONCLUSION

Among pregnant women studied, Pregnant women who perform ANC examinations at midwives have sociodemographic characteristics, including age not at risk [<35 years] to get pregnant or give birth, their first marriage age at <24 years old, not working, being at a low level of education with income 3 million/ month, does not have health insurance and planning to have birth at the midwife service. Interestingly, in this study, the higher the education of pregnant women, the smaller the percentage of conducting ANC examinations in midwives. It is found that variables related to ANC examination at midwives are age, age at first marriage, having a husband of ideal age and planning childbirth at the midwife.

5. AUTHORS' CONTRIBUTIONS

MAS conceptualized the study and created the methodology; DNAN, UTW, and EFH wrote the original draft; SS wrote, reviewed, and edited the manuscript. MAS, DNAN, UTW, EFH, and SS wrote the final manuscript.

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