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Predisposing Factors Related to Four ANC Visits (K4) on TM III Pregnant Women at Danurejan I Primary Health Center of Yogyakarta

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ABSTRACT

Background: Pregnancy may cause problems or become a complication at any time. However, complications of pregnancy and childbirth can be prevented by regular antenatal care (ANC) visits. Four ANC visits (K4) are indicators used to assess the quality of health services for pregnant women. Nationally, performance indicators for the coverage of four ANC visits (K4) on pregnant women in 2014 did not reach the target. Various factors may contribute to an unsuccessful four ANC visit (K4) of pregnant women. The objective of the study is to investigate factors related to four ANC visits (K4) on TM III pregnant women at the Danurejan I Primary Health Center of Yogyakarta.

Methods: It is an analytic observational study design with a cross-sectional approach. The sample was taken by accidental sampling as many as 30 TM III pregnant women.

Results: The result of this study shows that only two factors have a significant relationship with four ANC Visits (K4), which are maternal age (p value=0.000) and parity (p value=0.000). Meanwhile, education level (p value=0.155) and occupation (p value=0.210) have no correlation with four ANC Visits K4.

Conclusion: It can be concluded from this study that the maternal age and parity are the predisposing factors related to the four ANC Visits (K4). As a result, it is clear that promotion and prevention efforts such as health education about mature age at marriage and improving family planning programs are essential to increase four ANC Visits (K4).

Keywords: Pregnancy; Predisposing; Four ANC Visits

1.   Introduction

Maternal Mortality Rate (MMR) is an indicator that is sensitive to the quality and accessibility of health care services in a region (Kemenkes RI, 2015a). World Health Organization (WHO) mentioned that in 2015, maternal mortality around the world was estimated at 303,000 people or around 216 / 100.000 live births. Mortality and morbidity in women during pregnancy and childbirth are major problems in developing countries because MMR mostly occurs in developing countries by 99% (Manuaba, 2010).

Indonesia is one of countries included in developing countries. Nowadays, Indonesia even included as one of the 10 largest contributors of MMR in the world, where these 10 countries contribute around 59% of all maternal mortality (WHO, 2015). Based on the results of the 2012 Indonesian Demographic Health Survey (IDHS) and the 2010 Population Census, MMR in Indonesia was recorded at 359 per 100.000 live births. MMR turned out to be deviating from the expected trend. The trend of MMR from 1992 to 2007 tended to fall, but in 2012, it actually increased (Wijaya, 2013).

The causes of maternal mortality known from the past until nowadays tend to have no shift. The

direct causes of maternal mortality are hemorrhage (28%), eclampsia (24%) and infection (11%). Meanwhile, some of the indirect causes of maternal mortality are Chronic Energy Deficiency (CED) (37%) and anemia in pregnancy (40%). Combined with the presence of "4 too" and "3 late", which are too young, too old, too often, too many children to become pregnant and too late to reach the health care facilities, late of getting a help in giving birth and too late to recognize the danger signs of pregnancy and childbirth (Kemenkes RI, 2010).

Various efforts have been conducted to reduce MMR, including the safe motherhood program that has been implemented in Indonesia since 1997. To achieve the goals of Millennium Development Goals (MDGs) and the Indonesia Strategic Plan for long-term development by 2015, the policy known as Making Pregnancy Safer (MPS) was made (Kemenkes RI, 2015b). At the end of 2015, through the United Nations General Assembly (UN), a new global commitment was created known as Sustainable Development Goals (SDGs) (Hoelman et al., 2015). SDGs is a new development agreement to replace MDGs and it will end in 2030. SDGs contains 17 goals and 169 targets. Maternal and child health problems themselves included in the third goal, whereby in 2030, the target is to reduce the MMR until below 70/100.000 live births. To achieve this target is certainly not easy as reflected in the past experiences of MDGs failures. It requires more active role of local and district governments to achieve SDGs goals, as we already know that the local governments are closer to their citizens and are the spearhead of public service providers including the maternal and child health service programs (Hoelman et al., 2015). Health services for pregnant women in each region are implemented by providing antenatal care for at least four times during pregnancy. The minimum time distribution is once in the first trimester (0-12 week gestation), once in the second trimester (12-24 week gestations), and twice in the third trimester (24 weeks gestation to delivery). This standard is used as a K4 assessment indicator (Kemenkes RI, 2015a).

The K4 indicator is an indicator to see the frequency that refers to the trimester period in applying antenatal care (Kemenkes RI, 2010). It was also explained in the Minister of Health of the Republic of Indonesia (Kemenkes) Regulation No. 741/MENKES/PER/VII/2008 concerning minimum health service standards in each district/city. It is stated that one of the health services measurement is the coverage of K4 visits by 95% (Kemenkes RI, 2008). Nationally, the K4 indicator in 2014 has not reached the target of the Ministry of Health Strategic Plan which only 86.7% of 95% target (Kemenkes RI, 2015b). Meanwhile, the coverage of the K4 indicator in Yogyakarta Province in 2015 was 92.68%, a slight decrease from the previous year (92.81%). Although the coverage of the K4 indicator in Yogyakarta Province from year to year tends to be stable, it still cannot reach the target of 95% (Dinkes Kota Yogyakarta, 2016).

The results of a study conducted by Priani in 2012 showed that there are several factors that influence the regularity of pregnant women on doing antenatal care, including predisposing factors such as the average age of pregnant women 21-35 years (74.4%), the level of high school education (54.9%), no occupation (82.9%), a little parity (78%), high knowledge (76.8%), and negative attitudes (61%). Enabling factors including low income (63.4%), the short distance of residence (63.4%), good media of information (52.4%). However, the reinforcing factor is husband's support (90.2%) (Priani, 2012).

The data obtained from the Yogyakarta Health Profile in 2016, show that the first contact with a health care provider in trimester I (K1) was 100% while the K4 was 91.78%. It shows the disparity between K1 and K4 that is still high (8.21%). Danurejan I Primary Health Center ranked the third lowest rank in terms of K4 indicator by 84% in 2015 after previously at the first lowest rank of 68% in 2014. Although it was increased, the disparity between K1 and K4 in Danurejan I Primary Health Center was still quite high, which was 26% (Dinkes Kota Yogyakarta, 2016). Therefore, the aim of this study is to investigate the predisposing factors related to K4 visits on pregnant women at the Danurejan I Primary Health Center in Yogyakarta.

2.   Method

This study is an observational analytic study with a cross-sectional approach. The cross-sectional approach is a research design by measuring or observing variables at the same time (Hidayat, 2014). In this case, the characteristic identification of the mother with K4 visits is conducted at the same time.

The population in this study was all pregnant women in the working area of Danurejan I Primary Health Center. The sample was taken based on accidental sampling technique with inclusion and exclusion criteria, which are a TM III pregnant women with 28-36 weeks gestation, carrying the Maternal and Child Health (MCH) handbook. The previous ANC was applied in the working area of Danurejan I Primary Health Center, and willing to become respondent of the study. There were 30 TM III pregnant women included in this study.

MCH handbook and checklist were used as the data collection tools, both for the independent and dependent variables. Data collection in this study was conducted by the researcher directly through making direct observations to look for things to be examined by looking at the mother's MCH handbook when the mother carried out antenatal care in the third trimester (Hidayat, 2014).

3.   Result and Discussion

3.1   Frequency distribution of respondents' characteristic

Table 1. Characteristic of Respondents

No	Characteristic	N	%
1	Age		
	1 = not at risk (20-35 years old)	23	76.7
	2 = at risk (<20 or >35 years old)	7	23.3
2	Parity		
	1 = Low (≤ 2)	19	63.3
	2 = High (≥ 3)	11	36.7
3	Education Level		
	1 = High ($\geq$ D3)	6	20.0
	2 = Low (SD-SMA)	24	80.0
4	Work Status		
	1 = do not have a job	18	60.0
	2 = have a job	12	40.0
5	K4 Visits		
	1 = Fits the standard	22	73.3
	2 = Do not fit the standard	8	26.7

The data in Table 1 above shows that the majority of respondents, as many as 22 out of 30 respondents (73.3%) have fit the standard of K4 visits. K4 visits that are considered as fit the standard are the antenatal care visits which at least 1 time in the first trimester, 1 time in the second trimester and at least 2 times in the third trimester. The results of the study show that most of the respondents have not at risk of age (20-35 years). In addition, there are 11 pregnant women who have high parity (36.7%) with ≥3 children. From this study, it is also found that the majority of respondents (60%) have no job or become housewives and have an elementary (SD)-senior high school (SMA) education level (80%).

Thus, domestic work is not included in the type of occupation, because what is meant by work in this study is in terms to earn money or salary to meet the necessities of lives.

3.2   Correlation between Age and K4 Visits

Table 2. The correlation between Age and K4 Visits at Danurejan I Primary Health Center

No	Age	K4 Visits				Total		PV
		Fit the standard		Do not fit the standard				
		N	%	N	%	N	%	
1	Not at risk	21	70.0	2	6.7	23	76.7	0.000
2	At risk	1	3.3	6	20.0	7	23.3	
	Total	22	73.3	8	26.7	30	100	

Age really determines maternal health status. Women considered at high risk if they become pregnant before 20 years or above 35 years old. Age under 20 years is considered to have a risk of complications that are closely related to women's reproductive health. Meanwhile, if it is over 35 years, it is also at high risk due to the decline of reproductive function, and maternal mortality which is higher in women who are pregnant at the risky age (Padila, 2014). Furthermore, age also can affect a person's thoughts and mindset. The more mature a person will also develop the strength of their thought. Thus, they will have better knowledge as a result of the experience and the maturity of her soul (Cholifah and Putri, 2016).

At the age of 20-35 years, pregnant women will tend to check their pregnancy more regularly because they still feel that pregnancy checks or antenatal care are very important. Meanwhile, those aged <20 years tend to not really understand the importance of regular antenatal care and those aged> 35 years tend to be indifferent to antenatal care because they feel that they have had quite good experience, when in fact both of these age groups should routinely check their pregnancy to the health services because of the high risk of pregnancy and childbirth (Pongsibidang and Abdulah, 2013). Therefore, this should be a particular concern to both health workers and especially pregnant women themselves, to prevent pregnancy at a risky age. For example, the efforts to promote the maturing age at marriage, so that women will not get pregnant and give birth when they are still too young age. In addition, it is also necessary to strengthen family planning services to prevent pregnancy when women reach the age of 35.

It should become a particular concern to both health care providers and especially pregnant women. Regular antenatal care is the way to monitor the development of a pregnancy and also to recognize various abnormalities. Hence, it could be ensured that the pregnancy will run well and the labor also can be planned properly to ensure the safety of the mother and baby, and to avoid various complications such as preterm birth, low birth weight (LBW), and etc. (Nimi et al., 2016). The results of statistical analysis as outlined in Table 2 show that there is a significant correlation between maternal age and K4 visit, with p-value=0.000 ($<\alpha = 0.05$). It is in line with the research conducted by Putri et al. (2015) which stated that there is a relationship between the age of pregnant women and ANC compliance at Suruh Primary Health Center, Semarang Regency.

Another research by Hidayatun Mukaromah (2014) also revealed the same result, that there was a relationship between maternal age and four times antenatal care visits (K4) (Hidayatun Mukaromah, 2014). The same result was also shown in a study conducted by Simkhada et al. (2008), who showed that age was a factor related to the utilization of antenatal care services.

In accordance with the Lawrence Green's theory in Notoatmodjo (2010), age is one of the predisposing factors behind the behavior change that provides rational thinking or motivation for an

activity, as well as a factor that facilitates the occurrence of people's behavior. In other words, age has an influence on maternal behavior in utilizing and fit the standard of antenatal care visits (K4).

3.3 The Correlation between Parity and K4 Visits

Table 3. The correlation between Parity and K4 Visits at Danurejan I Primary Health Center

No	Parity	K4 Visits				Total		PV
		Fit the standard		Do not fit the standard				
		N	%	N	%	N	%	
1	Low	18	60.0	1	3.3	19	63.3	0.000
2	High	4	13.3	7	23.3	11	36.7	
	Total	22	73.3	8	26.7	30	100	

Parity is one of the predisposing factors that influences mother's behavior of using health care services. In this case, the four times antenatal care visits (K4) (Notoatmodjo, 2010). Parity is the condition of a mother who has given birth to one or more fetus, the higher the parity, the higher the maternal mortality. Even though, the risk of high parity actually can be reduced or prevented by the family planning program, because most pregnancies at high parity are unplanned (Padila, 2014).

The experience of previous pregnancy influences the motivation of mother to conduct the antenatal care visit. The primigravida pregnant women think that they need more information about pregnancy because they do not have experience of pregnancy before. They are more anxious than multigravida, so the primigravida will utilize more antenatal care services compared to multigravida. Multigravida tends to feel that they have more knowledge and experience than primigravida. While in fact, each pregnancy is different so the conditions would be different (Sari et al., 2015). In fact, the experience of pregnancy and childbirth that the mothers have experienced would not be enough and could not guarantee the current pregnancy is running normally. Pregnancy and childbirth that occur in mothers with high parity are directly proportional to the risks that threaten the well-being condition of both mother and fetus (Saifuddin, 2010).

The results of statistical analysis in Table 3 show that there is a significant relationship between maternal parity and K4 visits, with p-value=0.001 ($<\alpha = 0.05$). The same results of the study conducted by Sari and INDRIANI (2014) also stated that there was a relationship between parity or the number of children with K4 visits. The result of this study is also supported by a study conducted by Agustina (2015) and Sriwahyu (2013) which explained that there was a significant relationship between parity with the standard of antenatal care visits at least 4 times during pregnancy until 36 weeks gestation. A research conducted by Pell et al. (2013) also revealed that parity has a complex influence on initiatives to conduct ANC visits, for instance, due to the ignorance about the signs and symptoms of pregnancy, primigravida will have more effort to find a place to examine and conduct ANC earlier.

The results of this study show that pregnant women with low parity more likely to conduct K4 visits. Pregnant women who have low parity (≤ 2) feel that pregnancy is still a new and very interesting thing. The curiosity about the development of their pregnancy from month to month makes the mother owns high motivation to check her pregnancy regularly (Padila, 2014). Different from pregnant women who have high parity (≥ 3), they tend to feel that they have enough experience in handling pregnancy. Due to that reason, they have low motivation to check their pregnancy and meet the K4 Visits which is the standard of antenatal care visit during pregnancy. It emphasizes that parity influences the ANC visits and even for the first ANC of pregnant women (Agha and Tappis, 2016).

3.4 The Correlation between Maternal Education Level and K4 Visits

Table 4. The correlation between Maternal Education Level and K4 Visits at Danurejan I Primary Health Center

No	Education Level	K4 Visits				Total		PV
		Fit the standard		Do not fit the standard				
		N	%	N	%	N	%	
1	Low	6	20.0	0	0	6	20.0	0.155
2	High	16	53.3	8	26.7	24	80.0	
	Total	22	73.3	8	26.7	30	100	

Based on the data on Table 4 above, it is found that all pregnant women who have high education level (20%) have done K4 visits and met the standards. Meanwhile, there were 8 pregnant women who have a low education level (elementary-high school) (26.7%) that have not done K4 visits as a standard of antenatal care visit.

Basically, Indonesia recognizes three levels of education that are basic education, secondary education, and higher education. Basic education includes elementary school/its equal and junior high school/its equal. Secondary education is a high school /its equal (Notoatmodjo, 2010). Based on this theory, it is known that the majority of pregnant women in this study have secondary education or lower. However, secondary education cannot be categorized as higher education because higher education is obtained through tertiary institutions with at least a diploma degree. According to Notoatmodjo (2010), the level of formal education influences differences in knowledge and decisions. Education determines people's knowledge and insight. The behavioral change provided through counseling is more easily accepted by people with higher education than those with low education. Cholifah and Putri (2016) also said the same thoughts that the level of education can increase women's access to information, increase the ability to accept the new health concepts and have the balanced interaction between health care providers and the client. The education level that a mother has can affect the awareness of utilizing health care facilities. Heredia-Pi et al. (2016) who conducted research on antenatal care in Mexico also revealed that the probability of adequate antenatal care was higher in women with high education and socioeconomic level. The results of the study in Table 4 also show that pregnant women who have a higher education level (20%) have conducted the K4 visits according to the standard. It is consistent with the theory of Notoatmodjo (2010) and Cholifah and Putri (2016) regarding the level of education that it influences pregnant women in conducting antenatal care visits. However, pregnant women with a low education level also have done K4 visits according to the standard with a fairly large percentage of 53.3%. Based on the result of statistical analysis, it is obtained the p-value=0.155 (>α =0.05), which means that there is no relationship between maternal education level and K4 visits. The results of this study are not in line with the concept of Padila (2014), which stated that the role of mothers with low education levels is more resigned, giving up circumstances without any efforts to improve their destinies. They ignored various important signs and symptoms that can cause dangerous conditions because they considered it as normal. The result of this study is also not in line with the research conducted by Wulandari and Ariesta (2015), which argued that there is a significant relationship between maternal education level and the completeness of antenatal care (K4).

However, this study is in line with some previous studies, such as the study conducted by Sarminah (2012), which stated that there is no significant relationship between education level and the completeness of antenatal care visits. The same result was also expressed by Sari and INDRIANI (2014) that there was no meaningful relationship between mother's education level and K4 visits.

The results of the cross-tabulations in Table 4 show that all pregnant women with high education levels have had K4 visits in accordance with the standards. It is indicates a positive relationship,

that highly educated mothers have higher knowledge and motivation to conduct regular pregnancy checks. The results of statistical analysis show that there is no significant relationship between maternal education level and K4 visits (p-value=0.155). It is might be influenced by the presence of cells with a "zero value" on cross-tabulation. Moreover, there are many other factors that also involved. For instance, a pregnant woman who has low education, but it is also the first pregnancy to her, so it will make her more likely to have regular antenatal care, due to the high curiosity about the development and condition of her pregnancy. In line with the theory of Lawrence Green in Notoatmodjo (2010), many other factors also encourage pregnant women to have regular antenatal care visits, including maternal age, parity, and also support from family.

3.5   The Correlation between Maternal Work Status and K4 Visits

Table 5. The correlation between Maternal Work Status and K4 Visits at Danurejan I Primary Health Center

No	Work Status	K4 Visits				Total		PV
		Fit the standard		Do not fit the standard				
		N	%	N	%	N	%	
1	Do not have a job	15	50.0	3	10.0	18	60.0	0.210
2	Have a job	7	23.3	5	16.7	12	40.0	
	Total	22	73.3	8	26.7	30	100	

The maternal occupation considered in this study refers to the work outside or inside the house except for domestic work, in terms of getting money and supporting the family income. Working mothers will have less time to check their pregnancy and spend more time to work. However, mothers who do not work will have plenty of time to check their pregnancy (Notoatmodjo, 2010). Work affects the respondent's ability to spare their time to visit health care facilities for antenatal care. Housewives tend to have more spare time than working mothers (Marullyta and Pudjirahardjo, 2013).

Table 5 above shows that there are 15 people (50.0%) of pregnant women who do not work and have K4 visits according to the standards. Meanwhile, only 23.3% of working pregnant women that meet K4 visits in accordance with the standards. It means that the status of not working can support the mother for antenatal care visits and meet the minimum standard of 4 times antenatal care visits. However in this study, there was no statistically significant relationship between maternal employment status and K4 visit.

The results of the statistical analysis presented in Table 5 show that there is no significant relationship between maternal employment and K4 visits in pregnancy, with a p-value=0.210 ($>\alpha$=0.05). The result of this study is in line with the results of research conducted by Lumempouw et al. (2015) which shows that there is no relationship between maternal employment and the completeness of antenatal care visits (K4).

Similar results were also stated in the studies of Cholifah and Putri (2016), Sarminah (2012) and Sari and INDRIANI (2014), which showed that there was no meaningful relationship between maternal employment and the regularity or completeness of antenatal care visit (K4). Research conducted by Onasoga et al. (2012) in Nigeria also found that there was no relationship between maternal employment and visits to use ANC services during pregnancy.

From the results of this study, researchers argue that as one of the predisposing factors that facilitate health behaviors, maternal employment does affect the mother's opportunity to make the antenatal care visit. However, it does not mean that all working mothers lose their opportunity for regular antenatal care visits. Various other factors revealed by Notoatmodjo (2010), such as age, parity, fam-

ily support, and distance also become factors that enable mothers to conduct antenatal care visits complies with standard (K4).

As in this study, pregnant women who work but are supported by high education, mature age and moreover if this pregnancy is the first pregnancy that has been expected, the mother will have a strong motivation to apply routine antenatal care visits. Conversely, for pregnant women who do not have job, but if the pregnancy is a high-risk pregnancy such as high parity, there is a possibility of mothers to feel that they have enough experience which tends to cause the lack of motivation to check their pregnancy routinely. Therefore, it means that the minimum four times antenatal care (K4) will not be achieved.

In addition to age, parity, education, and employment factors, there is also a cultural factor that can be a barrier to achieving the K4 target. For example, there is a culture of the community when the pregnancy is near to the delivery time, the pregnant women will return to their hometowns because they want to give birth and feel comfortable when close to their parents. Besides that, some pregnant women also frequently move around from one health care facility to another for a pregnancy check. In the end, this will have an impact on non-optimal recording and reporting (Direktorat Kesehatan Keluarga, 2018).

Conclusion

Based on the results of this study, it can be concluded that age (p-value=0.000) and parity (p-value = 0.000) are the predisposing factors that significantly related to K4 visits, but education (p-value=0.155) and occupation (p-value=0.210) are the predisposing factors that have no relation with K4 visits on TM III pregnant women at Danurejan I Primary Health Center in Yogyakarta. Therefore, it requires encouraging and preventive efforts to be able to increase K4 visits of pregnant women, such as health education efforts about maturing age at marriage and efforts to improve family planning programs in order to prevent risky pregnancy. Future studies are expected to be conducted with a larger sample size and different epidemiological approaches.

Conflict of Interest

The authors have disclosed no conflict of interest, financial or otherwise.

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