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Analysis of Variables Influencing the Antenatal Care Visit in Slawi Primary Health Center, Indonesia

Natiqotul Fatkhiyah[1*], Sri Tanjung Rejeki[1], Dwi Atmoko[1]

1. Department of Midwifery, STIKES Bhakti Mandala Husada, Tegal, Indonesia

ABSTRACT

Background: Complications during pregnancy is one of the variables increasing the maternal death rate. To reduce or prevent maternal and perinatal morbidity and mortality, antenatal care (ANC) visits were implemented. An antenatal care visit is pregnancy monitoring which is intended to inspect the health of the mother in general, including complications of pregnancy. It also aims to prepare a well-born neonate and a healthy mother; therefore, adherence to ANC is important. This study was conducted to determine the maternal determinant variables related to adherence to ANC.

Methods: This cross-sectional study was carried out with an analytical approach. The statistical population of the research consisted of 30 pregnant women who were in the third trimester. The research design indicated the correlation between variables. A univariate data was used for the analysis of variables, namely maternal age, parity, and pregnancy diagnosis. While the bivariate analysis was performed using Fisher's exact test. The study was conducted in Slawi Primary Health Centre, Indonesia.

Results: The results showed that 86.67% of pregnant women conducted ANC visits regularly. According to maternal determinants, it was revealed that ANC had a correlation with age and parity (P=0.02 and P=0.04, respectively). However, there was no correlation between pregnancy diagnoses and ANC (P=0.08).

Conclusion: There were correlations of age and parity with ANC; nevertheless, no correlation was found between pregnancy diagnosis and ANC.

Keywords: Cross-sectional study, Indonesia, Maternal health, Pregnancy

Introduction

Maternal Mortality Rate (MMR), Neonatal Mortality Rate (NMR), Infant Mortality Rate (IMR), and Under-Five Mortality Rate are some indicators of community health status. At present, the MMR and IMR are still higher in Indonesia than other member countries of the Association of Southeast Asian Nations. According to the Indonesia Demography and Health Survey (IDHS) data in 2007, there were 228 MMR per 100,000 live births, 34 IMR per 100 live births, 19 NMR per 1,000 live births, and 44 Under-Five Mortality Rate per 1,000 live births. Global agreement (Sustainable Development Goals/SDGs, 2015) emphasizes the infant mortality reduction in 2030 by 70 per 100,000 live births, through decreasing the NMR to 12 per 1,000 live births and 25 Under-Five Mortality Rate per 1,000 live births (1). Although a decrease of MMR had been observed in

Indonesia within 1994-2012, an increase was found in this rate in 2012 as many as 359 per 100,000 live births. However, IMR was on the track of decreasing as it continued to decline and IDHS showed 32 per 1,000 live births in 2012. According to Inter-Census Population Survey data in 2015, both MMR and IMR showed a decrease with 305 per 100,000 live births and 22.23 per 1,000 live births, respectively. Accordingly, Indonesia has not reached the target in terms of reducing MMR; nevertheless, it has achieved the target in reducing IMR (2). Therefore, MMR will inevitably be a critical issue.

Complication during pregnancy and the labor process is reported to be the main cause of MMR. Approximately, 830 women around the world suffer from this complication every day. Women suffer from complications during and after

* *Corresponding author:* Natiqotul Fatkhiyah, Department of Midwifery, STIKES Bhakti Mandala Husada, Tegal, Indonesia. Tel: +6281548005216; Email: natirozak@gmail.com

pregnancy and labor. Most complications develop during pregnancy which can be both prevented cured. The main complications causing almost 75% of maternal mortality are bleeding, pre-eclampsia or eclampsia, infection, labor-related, and unsafe abortion (3). Pregnancy is a period during which there is a fetus in the womb. Pregnancy is preceded by fertilization, which is the encounter of male sperm cells and the eggs produced by the ovaries. The fertilization period starts a new life of a fetus, which grows in the mother's womb as a safe and comfortable shelter for the fetus. Pregnancy starts from conception until the birth of the fetus with a normal length of 280 days (40 weeks or 9 months and 7 days) (4). A pregnant woman needs to know about antenatal care since it becomes an obligation and stimulates the mother to perform visits of pregnancy and related behaviors.

It has been suggested that adherence is the main variable of good maternal and neonatal outcomes. However, few studies have been published investigating the maternal adherence level to antenatal care (ANC). A Childbirth plan is an effective tool to create a more natural and physiological delivery process; however, the policies are needed to encourage the use of childbirth plans to improve adherence (5). The results of a study performed to analyze pregnant women with only the self-efficacy variable showed that pregnant women with low self-efficacy were more likely to experience practical problems with pregnancy medication (6). A variable of healthcare workers was also examined to ensure antenatal care services in rural areas which reported that those in rural areas failed to perform ANC procedures due to the cost charged to the patients (i.e., pregnant women) (7-9). Another research showed that four out of ten mothers lacked a minimum of four visits, which is recommended by the World Health Organization (WHO) (9, 10). In this research, maternal age, spouse attitude, nuclear family, maternal education, and perceived morbidity were the major predictors of ANC service utilization (11).

A previous ANC was provided by the WHO known as Focus Antenatal Care; however, it was not been employed frequently which then developed into ANC with eight minimum visits. In recent years, there has been considerable interest in adherence during pregnancy (12). Antenatal care is defined as a referral of pregnant women to the healthcare workers to get ANC services following established standards. In this case, the term of visit does not only include the pregnant women's referral to a primary healthcare center but also it encompasses every pregnant woman's contact with healthcare workers, either with Primary Health Center or village maternity facility, and even home visits in order to achieve public health goals (13).

The present study aimed to determine the correlation between the maternal determinants variables of age, parity, pregnancy diagnosis and ANC visit.

A previous study of the antenatal visit was conducted on October 12, 2018, at Slawi Primary Health Center, Tegal Regency, Indonesia. The required data were obtained from all pregnant women referring to this center within January-December 2017. In the mentioned study, a total of 1.367 pregnant women were investigated, of which 93.4% performed first visit (K1) and 84.5% performed fourth visit (K4). Nevertheless, the data obtained in 2018 (January-June) from 1,290 pregnant women showed that the first and fourth visits were conducted by 82.1% and 79% of the subjects, respectively. Subsequently, the results of interviews carried out on five pregnant women about ANC revealed that one pregnant woman had good knowledge, and the rest of them had sufficient knowledge.

Methods

This cross-sectional research was performed based on an analytical approach in 2019. The research design indicates the correlation between variables. The population of this study (n=1,290) was all pregnant women in the area of Slawi Primary Health Center. The inclusion criteria were being in the third semester pregnancy and willing to participate in the research. The sample size was measured using the Slovin formula (14) and resulted in 93 cases. However, due to the geographical location, the researchers used an accidental sampling technique resulted in a minimum sample of 30 pregnant women residing in the area of Slawi Primary Health Center. Table 1 shows the operational definition of variables investigated in this research consisting of age, parity, pregnancy diagnosis, and ANC visit.

The data collection was carried out by secondary data that were taken indirectly from the respondents. In this case, the researchers took the data from the number of pregnant women and ANC visit data in Slawi Primary Health Center.

Statistical data analysis

In this research, two analysis methods were employed for each function. First, univariate

Table 1. Operational definition of research variable

Variable	Operational definition	Source	Measurement result	Scale
Age	Current age of being pregnant	Medical record	a. Reproductive age (20-35 years) b. Risky age (<20 and/or >35)	Nominal
Parity	Number of deliveries (born alive and died)	Medical record	a. Safe parity (second or third delivery) b. Risky parity (never delivered a baby and/or more than three times delivery)	Nominal
Pregnancy diagnosis	Detecting normal or complicated pregnancy	Medical record	a. Normal, as normal vaginal delivery b. Complication, as life-threatening situation during pregnancy and after delivery (pre-eclampsia, eclampsia, infection)	Nominal
ANC visit	Regularity on ANC visit	Adherence to ANC visit measured by questionnaire in unit of times	a. Good, if ANC visit ≥ 4 times during pregnancy b. Bad, if ANC visit < 4 times during pregnancy	Nominal

ANC: antenatal care

analysis was used to analyze variables from each result. Categorical variables were given in frequency and percentages. Secondly, bivariate analysis was performed to understand the correlation of variables to ANC visit using Fisher's exact test.

Results

The results were summarized in two tables indicating univariate analysis and bivariate analysis (tables 2 and 3, respectively). According to Table 2, the highest percentage of maternal reproductive age was obtained at a range of 20-35 years old with 66.67% of the cases. It was also found that 60% and 66.67% of the cases had multigravida parity status (second and third pregnancies) and normal pregnancy diagnosis, respectively. Moreover, 83.33% and 86.76% of the subjects fulfilled the standardized first visit (K1) and fourth visit (K4), respectively.

Based on the results of Table 3, showing the bivariate analysis, 80% of pregnant women who

Table 2. Univariate analysis of maternal determinant variable

Variable	F	%	n
Age			
<20	0	0.0	
20-35	20	66,67	30
>35	10	33,33	
Parity			
Primi (1)	8	26.67	
Multi (2-3)	20	66.67	30
Grande (≥4)	2	6.66	
Pregnancy Diagnosis			
Normal	18	60.0	30
Complication	12	40.0	
K1			
Standardized	25	83.33	30
Unstandardized	5	16.67	
K4			
Standardized	26	86.67	30
Unstandardized	4	13,33	

Table 3. Antenatal care (K4) regularity with maternal determinant variables

Variable	ANC>4x		ANC<4x		P-value
	F	%	F	%	
Age					
<20	0	0.0	0	0.0	
20-35	16	80.0	4	20.0	0.02
>35	7	70.0	3	30.0	
Parity					
Primi (1)	3	37.5	5	62.5	
Multi (2-3)	17	85.0	3	15.0	0.04
Grande (≥4)	2	100	0	0.0	
Pregnancy Diagnosis					
Normal	18	100.0	0	0.0	
Complication	7	58.33	5	41.67	
K1					0.08
Standardized	24	100.0	0	0.0	
Unstandardized	6	100.0	0	0.0	

ANC: antenatal care

regularly perform ANC were at the range of age 20-30 years old. Furthermore, the highest percentages of multigravida women and normal pregnancies were reported as 85% and 100% cases, respectively.

The Fisher's exact test, performed in the SPSS software (version 20), resulted in the Asymp. Sig value of 0.02 ($P<0.05$). Therefore, there was a correlation between reproductive age and adherence to ANC visits. Regarding the parity status, the Asymp. Sig was estimated at 0.04 ($P<0.05$), showing that there was a correlation between parity and adherence to ANC visits. Nonetheless, it was revealed that there was no relationship between pregnancy diagnosis and adherence to ANC visits as the Asymp. Sig value was obtained at 0.08, which was more than the standardized p-value of 0.05 ($P>0.05$).

Discussion

Antenatal care is a service provided for pregnant women regularly to take care of both the

mother and the neonate during pregnancy and the labor process. It includes pregnancy examination and corrective measures for basic interventions (11, 15). Antenatal care is also provided to prepare mothers for labour, so the baby is well-born, having good health status. Besides, antenatal care is intended for preparing for baby care and lactation as well as restoring optimal maternal health at the end of the puerperium (16-18). The knowledge of pregnant women about ANC (prenatal care) is highly important since it will decrease maternal and neonatal mortality rates. Considering the benefits of ANC for pregnant women, it is necessary to know whether there are diseases, risks, and complications of pregnancy and to ensure a normal and healthy delivery process, both for the mother and the neonate (19).

The results showed that the pregnant women performing ANC regularly were in the age range of 20-35 years old. This finding noted that most pregnant women were in the healthy reproductive age. Since the subjects in this age group were mature enough, they were highly curious and concerned about the pregnancy and highly aware of making regular ANC visits. Pregnant women who carry out ANC examinations regularly are mostly at the age of 20-35 years (20-21).

The results were indicative of the existence of a correlation between age and adherence to ANC visits. Likewise, a study performed at the Suruh Primary Health Centre in Semarang, Indonesia, reported that there was a correlation between age and adherence to ANC visits (22). An individual's age is one of the variables that influence changes in health behavior. Age affects the person's perception and mindset. An individual's comprehension and mindset develop by aging; therefore, their knowledge and understanding improve, which is the result of experience and mental maturity (23).

The maternal mortality rate of pregnant women increases 2-5 times at the age of under 20, compared to the age range of 20-35, and follows an increasing trend above 35. The results of some pieces of research showed that pregnant women aged 20-35 years had regular ANC visits to ensure the health status of the mother and fetus, as well as early detection of complications in pregnancy (24-26).

The results of this study showed that 85% of pregnant women who regularly conducted ANC visits were in multigravida pregnancy. Additionally, pregnant women with more than one parity taking advantage of the service showed that they faced risks in previous pregnancies;

consequently, they are required to have regular pregnancy checks (27). Mothers with the first pregnancy will be motivated to conduct ANC visits since it is a new experience having a baby.

The results also indicated that there was a correlation between parity and adherence to ANC. Parity was found to have a relationship with ANC examinations in pregnant women (15, 28). Pregnant women with high parity have a higher risk of complications and death than those with low parity. Therefore, pregnant women with high parity will have their pregnancy checked regularly by healthcare workers.

The results of the present study demonstrated that pregnancy diagnosis had no relationship with adherence to ANC. It is because pregnant women have adhered to ANC visits routinely, either their diagnosis is normal pregnancy or not. Pregnancy in its development is at risk of complications. Consequently, antenatal care must be carried out routinely, integrated, and according to the standards of quality ANC. Services must meet quality standards, such as weighing and measuring height, measuring blood pressure, measuring upper arm circumference, measuring uterine height (uterine fundus), determining the status of tetanus, and giving tetanus toxoid immunization according to immunization status, giving additional tablets as much as 90 tablets during pregnancy, determining fetal presentation and fetal heart rate, holding talks, providing simple laboratory test services, performing a minimum of blood hemoglobin tests, and proving case management (29-30).

In an attempt to reduce the maternal mortality rate due to the postpartum period, the mother's comfort during this period has been given great attention. No wonder that ANC is a must for pregnant women (31). As a result, the adoption of appropriate measures can prevent causes of maternal death among pregnant women. Services of maternity care in the form of ANC can vary, including maintaining personal hygiene, fulfilling nutritional needs, engaging in appropriate physical and sexual activities, and taking enough sleep and rest (32).

Based on the results of the study, most of the pregnant women routinely conducted ANC visits. Previously, it was necessary to make four ANC visits during pregnancy. The first visit was conducted in the first trimester with a gestational age of 1-12 weeks to get ANC, first-trimester postpartum planning, and health services. The next visit was in the second trimester at 13-24 weeks of gestation to get

standard ANC. Afterward, two visits were made in the third trimester with a gestational age of more than 24 weeks to establish a delivery plan and recognize signs of labor. The increase in the number of ANC visits for pregnant women without complicated pregnancies to more than four times has not been found to have a correlation with improving delivery outcomes. In contrast, reduced and goal-oriented ANC performed very well (33-34) and for some women, the gap between visits was considered long when the frequency of visits was found lower than what traditionally was offered (35).

The objectives of ANC are as follows: 1) monitoring the pregnancy to ensure the maternal health and neonatal growth and development, 2) improving and maintaining the physical, mental, and social health of mothers and newborns, 3) recognizing any abnormalities or complications that may occur during pregnancy, including general medical record, obstetrics, and surgery, 4) preparing for the postpartum for months and giving birth safely with the minimal trauma for both the mother and neonate, 5) providing healthcare to the mother facilitating the postpartum period being run normally and breastfeeding exclusively, and 6) preparing the role of mothers and families in receiving a neonate to achieve the normal growth of neonate. Every pregnant woman's contact with a healthcare worker, whether it is from a maternal and child health center, a village maternity facility, or a home visit, can be considered as a visit of the pregnant mother (36). Antenatal care visit schedules are based on the gestational age or trimester, and the first ANC visit should be conducted within the first 10 weeks (37, 38). Antenatal care visits in the first and second trimesters are performed once a month. From the visits, laboratory data are taken, of which is an ultrasound examination (midwife contribution) performed. In addition, a diet recommendation (balanced nutrition) of 0.5 g of protein per kg body weight is also given or the addition of one egg per day. The purpose of the observation is to detect diseases that can affect pregnancy and pregnancy complications. The plan aims to cure the disease, prevent pregnancy complications, and first tetanus immunization. Treatment in the third trimester is carried out every two weeks until a week before the delivery where signs of labour are started to appear. In this step, laboratory data are evaluated for treatment results. Afterward, a balanced nutritional diet, ultrasound examination, and second tetanus immunization are performed.

The observations are conducted to diagnose diseases accompanying the third trimester of pregnancy. The treatment plan consists of providing advice and instructions about the sign *in partu* and place of referring to give birth. The total schedule for ANC is 12-13 times during pregnancy. However, in developing countries, four times would suffice: once in the first and second trimesters and twice in the third trimester.

Conclusion

Based on the results of this study, among all the studied pregnant women (n=30), 86.67% of the cases performed ANC regularly. Based on maternal determinants, pregnant women having regular ANC were found to be mostly in healthy reproductive age (80%), multigravida (85%), and normal pregnancy (100%). Furthermore, adherence to antenatal care visits had a relationship with age and parity, while it showed no relationship with pregnancy diagnosis. It is expected that pregnant women routinely carry out ANC as an effort to detect early complications in pregnancy; consequently, healthcare workers can provide ANC services according to standard operational procedures. For future work, researchers can conduct research related to risk variables that affect the adherence of pregnant women in carrying out ANC.

Acknowledgments

Conflicts of interest

The authors declare that there is no conflict of interest.

References
1. Indonesia Health Profile. Profil Kesehatan Indonesia. Jakarta: Ministry of Health of Indonesia; 2018.
2. Barat B, Payung K, Syafrani P, Diliarosta S, Heriyadi P. Laporan tahunan direktorat Kesehatan Keluarga Tahun. Jakarta: Direktorat Kesehatan Keluarga; 2016. P. 1-63.
3. Syalfina AD. Analisis faktor risiko komplikasi kehamilan trimester III. Seminar Nasional Hasil Penelitian dan Pengabdian Masyarakat dengan tema Kesehatan Modern dan Tradisional, Indonesia;

2017.
4. Prawirohardjo S. Obstetric sciences. Jakarta: Bina Pustaka Sarwono Prawirohardjo; 2010.
5. Hidalgo-lopezosa P, Hidalgo-maestre M, Rodríguez-borrego MA. Birth plan compliance and its relation to maternal and neonatal outcomes. Rev Lat Am Enfermagem. 2017; 25:e2953.
6. Barker M, Angelo SD, Ntani G, Lawrence W, Baird J, Jarman M, et al. Europe PMC funders group the relationship between maternal self-efficacy, compliance and outcome in a trial of vitamin D supplementation in pregnancy. Osteoporos Int. 2017; 28(1):77-84.
7. Conrad P, Schmid G, Tientrebeogo J, Moses A, Kirenga S. Compliance with focused antenatal care services : do health workers in rural Burkina Faso, Uganda and Tanzania perform all ANC procedures ? Trop Med Int Health. 2012; 17(3):300-7.
8. Jo Y, Alland K, Ali H, Mehra S, Lefevre AE, Pak SE, et al. Antenatal care in rural Bangladesh : current state of costs , content and recommendations for effective service delivery. BMC Health Serv Res. 2019; 19(1):861.
9. Islam MM, Shahed M, Id M. Determinants of frequency and contents of antenatal care visits in Bangladesh : assessing the extent of compliance with the WHO recommendations. PLoS One. 2018; 13(9):e0204752.
10. World Health Organization. Trends in maternal mortality: 1990 to 2015. Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Geneva: World Health Organization; 2015.
11. Abosse Z, Ababa A, Woldie M, Sinkie SO. Variables influencing antenatal care service utilization in Hadiya Zone. Ethiop J Heal Sci. 2010; 20(2):75-82.
12. Mchenga M, Burger R, Fintel D Von. Examining the impact of WHO's focused antenatal care policy on early access, underutilisation and quality of antenatal care services in Malawi: a retrospective study. BMC Health Serv Res. 2019; 19(1):295.
13. Hajizadeh S, Tehrani FR, Simbar M, Farzadfar F. Variables influencing the use of prenatal care : a systematic review. J Midwifery Reprod Health. 2016; 4(1):544-57.
14. Saryono, Setiawan. Metodologi Penelitian Kebidanan. Yogyakarta: Nuha Medika; 2010.
15. Ali SA, Dero AA, Ali SA, Ali GB. Variables affecting the utilization of antenatal care among pregnant women: a literature review. J Preg Neonatal Med. 2018; 2(2):41-5.
16. Muchie KF. Quality of antenatal care services and completion of four or more antenatal care visits in Ethiopia: a finding based on a demographic and health survey. BMC Pregnancy Childbirth. 2017; 17(300):1-7.
17. Nachinab GT, Adjei CA, Asamoah R, Attafuah PA, Ziba FA. Exploring the determinants of antenatal care services uptake : a qualitative study among women in a rural community in northern Ghana. J Pregnancy. 2019; 2019:3532749.
18. Berhan Y, Berhan A. Antenatal care as a means of increasing birth in the health facility and reducing maternal mortality: a systematic review. Ethiop J Health Sci. 2014; 24:93-104.
19. Ahmed H, Manzoor I. Knowledge about the importance of antenatal care among females of child bearing age living in a suburban community of Lahore. Pak J Med Sci. 2019; 35(5):1344-8.
20. Amoakoh-coleman M, Agyepong IA, Zuithoff NPA, Kayode GA, Grobbee DE, Klipstein-grobusch K, et al. Client variables affect provider adherence to clinical guidelines during first antenatal. PLoS One. 2016; 11(6):e0157542.
21. Dairo MD, Owoyokun KE. Variables affecting the utilization of antenatal care services in Ibadan, Nigeria. Benin J Postgrad Med. 2010; 12(1):3-13.
22. Dewi S, Putri K, Christiani N, Nirmasari C. Hubungan usia ibu hamil dengan kepatuhan ANC di puskesmas suruh kabupaten semarang. J Keperawatan Matern. 2013; 3(1):33-41.
23. Short SE, Mollborn S. Social determinants and health behaviors: conceptual frames and empirical advances. Curr Opin Psychol. 2016; 5:78-84.
24. Nove A, Matthews Z, Neal S, Camacho AV. Maternal mortality in adolescents compared with women of other ages: evidence from 144 countries. Lancet Glob Health. 2014; 2(3):e155-64.
25. Bomela NJ. Maternal mortality by socio-demographic characteristics and cause of death in South Africa : 2007–2015. BMC Public Health. 2020; 20(1):157.
26. Blanc AK, Winfrey W, Ross J. New findings for maternal mortality age patterns: aggregated results for 38 countries. PLoS One. 2013; 8(4):e59864.
27. Rauf NI, Amir MY, Akk B, Masyarakat FK. Variables related to the utilization of antenatal care at public health center of minasa Upa Makassar. Makassar, Indonesia: PHC Minasa Upa; 2013. P. 1-11.
28. You H, Yu T, Gu H, Kou Y, Xu X, Li X, et al. Variables associated with prescribed antenatal care utilization : a cross-sectional study in Eastern Rural China. Inquiry. 2019; 56:46958019865435.
29. Solnes Miltenburg A, van der Eem L, Nyanza EC, van Pelt S, Ndaki P, Basinda N, et al. Antenatal care and opportunities for quality improvement of service provision in resource limited settings : a mixed methods study. PLoS One. 2017; 12(12):e0188279.
30. The Partnership for Maternal Newborn & Child Health. A global review of the key interventions related to reproductive maternal and child health (RMNCH). Geneva: Partnership for Maternal, Newborn & Child Health; 2011.
31. Ismainar H, Triana A, Marlina H. Maternal compliance during antenatal care visit at primary health care Pekanbaru, Riau. International Conference on Public Health, Universitas Ahmad Dahlan, Yogyakarta, Indonesia; 2018. P. 27-34.
32. Rashad WA, Essa RM. Women's awareness of danger sign of obstetrics complications. J Am Sci. 2010; 6(10):1299-306.
33. Hijazi HH, Alyahya MS, Sindiani AM, Saqan RS,

Okour AM. Determinants of antenatal care attendance among women residing in highly disadvantaged communities in northern Jordan : a cross-sectional study. Reprod Health. 2018; 15(1):106.

34. Muhwava LS, Morojele N, London L. Psychosocial variables associated with early initiation and frequency of antenatal care (ANC) visits in a rural and urban setting in South Africa: a cross-sectional survey. BMC Pregnancy Childbirth. 2016; 16:18.

35. Dowswell T, Carroli G, Duley L, Gates S, Am G, Piaggio G. Alternative versus standard packages of antenatal care for low-risk pregnancy (Review). Cochrane Database Syst Rev. 2015; 7:CD000934.

36. Lattof SR, Tunçalp Ö, Moran AC, Bucagu M, Chou D, Diaz T, et al. Developing measures for WHO recommendations on antenatal care for a positive pregnancy experience : a conceptual framework and scoping review. BMJ Open. 2020; 9(4):e024130.

37. Barry P, Cowman T. Antenatal care in uncomplicated pregnancies. London: National Institute for Health and Care Excellence; 2020.

38. Ebonwu J, Mumbauer A, Uys M, Wainberg ML, Medina-Marino A. Determinants of late antenatal care presentation in rural and peri-urban communities in South Africa: a cross-sectional study. PLoS One. 2018; 13(3):e0191903.