

# Discrepancy Evaluation of 10 Antenatal Care Services (10T) at the Dinoyo Health Center, Malang City

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ARTICLE INFO	ABSTRACT
<b>ORCHID ID</b> Author 1: - Author 2: <a href="http://orcid.org/0000-0002-6748-2556">http://orcid.org/0000-0002-6748-2556</a> Author 3: <a href="http://orcid.org/0000-0003-2883-1191">http://orcid.org/0000-0003-2883-1191</a> Author 4: <a href="http://orcid.org/0000-0003-2663-8232">http://orcid.org/0000-0003-2663-8232</a>	One of the goals of the Antenatal Care (ANC) program is to identify abnormalities or complications early that may occur during pregnancy. The quality of antenatal care contributes to better outcomes for pregnant women. Meanwhile, at the Dinoyo Health Center, the coverage of antenatal care visits showed a decreased trend. Furthermore, the quality of ten antenatal care services (10T) was still unknown. This study aimed to evaluate the implementation of ten antenatal care services (10T) at the Dinoyo Health Center. This descriptive qualitative study was conducted at the Dinoyo Health Center on April 2022. Data were obtained from ten informants that were purposively selected and also from secondary data. Data analysis was carried out using the Discrepancy Evaluation Model (DEM) approach. The data triangulation process was also done. This study found that one of ten antenatal care services (10T) did not meet the standard. It was a counseling session.
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## 1. Introduction

Antenatal Care (ANC) is a health service intended for pregnant women during pregnancy to optimally improve the physical and mental health of pregnant women. The services provided include promotive, preventive, curative, and rehabilitative services. Antenatal Care (ANC) aims to assist mothers in knowing the development of the fetus in the womb so that if they find something odd related to pregnancy, they can be helped immediately (Safmila et al., 2021; Yuliani et al., 2021).

The indicators that are used to measure the access to Antenatal Care (ANC) service among pregnant women are the K1, K4, and K6 visits. The K1 is the mother's first visit to a health facility. The K4 is the number of standard visits to Antenatal Care (ANC) service and the K6 is a visit of pregnant women to the health center where they have to make direct contact with a midwife or doctor. Standards that must be met in service Antenatal Care (ANC) include 10 T, namely measuring body weight and height, measuring blood pressure, measuring Upper Arm Circumference (LiLA), determining fetal presentation and Fetal Heart Rate (DJJ), measuring fundal height (TFU), getting Tetanus Toxoid (TT) vaccination, consuming Fe tablets, laboratory testing, case management/handling, and counseling (Kementerian Kesehatan Republik Indonesia, 2015).

Based on Malang Health Profile 2020, the K1 coverage reached 88.10%. While the coverage of the K4 was lower, which was only 83.41% or around 10,863 pregnant women in Malang had accessed the antenatal care service four times throughout their pregnancy (Dinas Kesehatan Kota Malang, 2021). Besides the low coverage of antenatal visits, Maternal Mortality Rate (MMR) in Malang was also high enough, with approximately 86/per 100,000 live births. It might be due to several factors, such as bleeding, hypertension during pregnancy, premature rupture of membranes, premature birth, eclampsia, marked edema, sepsis, and breech position in primigravidas (Dinas Kesehatan Kota Malang, 2021).

The quality of antenatal care also contributes to the health condition of pregnant women. A study that was conducted by Marniyati & Soebyakto (2016) found that there were antenatal care services that had not been carried out according to existing standards, such as anamnesis related to the history of the mother's disease, the counseling session, measuring the Upper Arm Circumference (LiLA), and also measuring of the mother's height. On a visit to Antenatal Care (ANC), pregnant women receive some services, including nutrition counseling, appropriate health education, comprehensive examination of pregnancy, and receiving folic acid and iron supplements (Hendarwan, 2018). These services help mothers in maintaining their pregnancy, preventing giving birth prematurely, preventing anemia, and also preventing Low Birth Weight (LBW) (Hutasoit et al., 2020; Mardiana et al., 2021).

Dinoyo Health Center is one of the health facilities in the Malang City area. Based on preliminary data, it was reported that in the last four years, the K1 and K4 visit coverage at the Dinoyo Health Center had not reached the target. In 2018, the K1 and K4 visits coverage at the Dinoyo Health Center was the lowest coverage among all the health centers in Malang City (Dinas Kesehatan Kota Malang, 2019). The K1 dan K4 visits coverage continued to show a downward trend. In 2019, the K1 and K4 visits coverage was 83% and 75.90%, respectively. In 2020, the K1 visit coverage dropped to 66%, while the K4 visit coverage was 63%. In 2021, the K1 and K4 visits coverage decreased by 9-10% than the previous year. Besides the decreased trend of antenatal care visits, between July-December 2021, it was found 2 cases of neonatal with asphyxia, 9 cases of Low Birth Weight (LBW), 5 cases of Congenital Hypothyroidism (SHK), and 2 cases of stillbirth.

The low coverage of antenatal care visits and the unknown quality of ten antenatal care services (10T) at the Dinoyo Health Center prompted the need for this study. Using the Discrepancy Evaluation Model (DEM) was expected to give many advantages in assessing a program that centered on the objectives previously made. Therefore, this study was conducted to evaluate the implementation of ten antenatal care services (10T) at the Dinoyo Health Center by using Discrepancy Evaluation Model (DEM) approach. Thus, this study will be able to find out what services should be improved to provide optimal services to pregnant women for getting better health outcomes.

## **2. Method**

In April 2022, this descriptive qualitative study was carried out at Dinoyo Health Center. The implementation of weight and height measurements, blood pressure measurements, measurements of the upper arm circumference (LiLA), the fundal height (TFU), laboratory tests, measurements of the fetal heart rate (DJJ), checks for Tetanus Toxoid (TT) vaccination status, distribution of Fe tablets, case management, and counseling sessions were the ten variables examined in this study. Interviewing the informants and observing the

implementation of 10 antenatal care services were allowed to collect those data. To complete the information, secondary data was also acquired from the record of the antenatal care visit. Purposive sampling was used to choose the informants. Ten informants participated in this study, including the leader of the ANC program, five midwives who provided antenatal care, the head of the Antenatal Care (ANC) program, the Head of Dinoyo Health Center, and three pregnant women. The six steps of the data analysis process were approach (approach), extracting information (deepening), matching (matching), meaning (interpretation), and presentation (presentation). Data analysis was carried out using the Discrepancy Evaluation Model (DEM) approach. The data triangulation process was also done to compare the information from one informant with other informants. This research passed the ethical review with number 161/HRECC.FODM/IV/2022 from Faculty Dental Medicine, Universitas Airlangga.

### 3. Result and Discussion

Antenatal Care (ANC) services in health facilities must be able to adhere to the standard. The Ministry of Health Regulation No. 97 of 2014 regarding pre-pregnancy, birthing, and postpartum health services, the implementation of contraception services, and sexual health services lends credence to this. The ten antenatal care services (10T) are as follows: weight and height measurement; upper arm circumference (LiLA) measurement; determining fetal presentation and fetal heart rate (DJJ); blood pressure measurement; the fundal height measurement; tetanus toxoid (TT) vaccination; iron supplements; laboratory tests; case management and handling; and counseling (Kementerian Kesehatan Republik Indonesia, 2015). Table 1 presents the evaluation of the ten antenatal services (10T) implementation based on the Discrepancy Evaluation Model (DEM) approach.

**Table 1. The Discrepancy Evaluation Model (DEM) in 10 Antenatal Care Services (10T) at The Dinoyo Health Center**

No	Standard	Result	Note
1	Body weight weighing is carried out every time when the pregnant woman makes an Antenatal Care (ANC) visit.  Height measurement is done during the first time visiting Antenatal Care (ANC) visit.	All midwives had taken weight measurements for every pregnant woman who visited Dinoyo Health Center and had measured the height of the pregnant woman at her first to Antenatal Care (ANC). This finding was supported by the results of data triangulation from informants.	Compliance with standards
2	Blood pressure measurement can be done every time when a pregnant woman visits Antenatal Care (ANC).	Based on the data that had been obtained, all midwives had checked the blood pressure at the time of the pregnant woman's visit.	Compliance with standards
3	Measurement of Upper Arm Circumference (LiLA) is carried out when the pregnant woman makes her first Antenatal Care (ANC) visit.	All midwives had measured the Upper Arm Circumference (LiLA) of the pregnant women at her first Antenatal Care (ANC) visit to measure her nutrition status.	Compliance with standards
4	The fundal height (TFU) measurement is carried out at gestational age of 24	Beginning at 24 weeks of gestational age, all midwives had measured the fundal height.	Compliance with standards

No	Standard	Result	Note
	weeks, whether using fingers or measuring tape.		
5	Check out the fetal presentation at the end of pregnancy (third trimester) to find out the baby's position.  Check out the fetal heart rate (DJJ) at least 14 weeks of gestational age.	The midwives checked out the fetal presentation at the end of the third trimester. The fetal heart rate (DJJ) also been checked by the midwives when the gestational age was above 14 weeks. Then, it was carried out routinely whenever the pregnant woman visited the Antenatal Care (ANC).	Compliance with standards
6	The pregnant women had received two doses of Tetanus Toxoid (TT) vaccine (T2).	The midwives screened the Tetanus Toxoid (TT) vaccination status of the pregnant woman. If she had incomplete TT vaccination status, the TT vaccine was given when the gestational age was above five months. All informants (the pregnant women) had complete TT vaccination status (T5).	Compliance with standards
7	All pregnant women should get at least 90 tablets of iron supplements during pregnancy.	All midwives gave at least 90 tablets of iron supplements to pregnant women. That statement had been confirmed by all pregnant women that participated as informants.	Compliance with standards
8	Laboratory tests that are performed on pregnant women include blood group examination, Hb, uric acid, blood protein, HbsAg, VTC, and syphilis.	All midwives conduct laboratory tests on pregnant women in the first and third trimesters of pregnancy. The midwife's statement had been verified by other informants. It was also confirmed by the mother's book record.	Compliance with standards
9	Case management service is provided for pregnant women who need medical treatments because of abnormalities or prenatal issues that occurred. The case can be referred to an appropriate level of care when it is needed.	Midwives gave special attention to every pregnant woman who had problems during her pregnancy. If the condition did not get better, it was referred to a hospital or other health facility. It had been confirmed by informant 5. She reported that the midwife had referred her to the hospital when she experienced premature rupture of membranes.	Compliance with standards
10	Counseling is given to the pregnant woman at any time when she visits Antenatal Care (ANC). The number of essential counseling topics that are given to pregnant women is at least 11 materials.	Not all the essential counseling topics were given to the pregnant woman. This study found that the midwife only provided information that was asked by pregnant women. In addition, it was found that the midwife only instructed pregnant women to read the information that was already available in the mother-child handbook without giving any explanation.	Not compliance with standards

Based on the in-depth interview result and direct observation at the Dinoyo Health Center, it was known that all midwives measured pregnant women's weight at every antenatal visit as well as height measurements were taken at the beginning of a pregnant woman's visit. Weight measurement is the first thing that should do by the midwife when a mother visits the Antenatal Care (ANC). According to the Ministry of Health (2015), weighing aims to determine whether there is interference with the fetus, and measuring height aims to screen for risk factors in pregnant women. Weight gain must be monitored continuously to assess the mother's nutritional status, thereby the risk of Low Birth Weight (LBW) can be prevented. Significantly, the possibility of having a baby with Low Birth Weight (LBW) occurs in mothers who rarely visit the Antenatal Care (ANC) (Banchani & Tenkorang, 2020). During each visit, the health worker (midwife) is required to take an anamnesis regarding the mother's weight during pregnancy (Puspadewi & Kusbandiyahi, 2020).

Measuring blood pressure is very important in detecting the incidence of hypertension in pregnancy as soon as possible. Based on the results of in-depth interviews and observation, all midwives had checked blood pressure at every visit of pregnant women to detect high blood pressure (blood pressure  $\geq 140/90$ ) in pregnancy and preeclampsia (proteinuria or hypertension accompanied by edema of the face and or lower limbs) (Ministry of Health, 2015). Preeclampsia is a major predisposing factor in pregnancy that can cause stillbirth. Preeclampsia can also cause intrauterine growth restriction, low birth weight (LBW), premature labor, and neonatal respiratory distress syndrome (Situmorang et al., 2016; Vest & Cho, 2014).

Nutrition in pregnancy is essential for both the mother and the fetus. Therefore, it is necessary to have an accurate assessment at every Antenatal Care (ANC) visit. Based on Barker's theory in Fakier (2017), a fetus that is exposed to malnutrition while in the womb experiences adaptations that permanently change its physiology and metabolism. These changes cause the fetus to have risk factors for coronary heart disease, diabetes, hypertension, and stroke in the future. The measure that can be used to show the nutritional status of the mother during pregnancy is the Upper Arm Circumference (LiLA). Research conducted by Harjanti and Ninik (2016) found that mothers are at risk of experiencing Chronic Energy Deficiency (CED) if they have an Upper Arm Circumference (LiLA)  $\leq 21$  cm. In this study, it was found that all midwives at the Dinoyo Health Center had conducted LiLA examinations on the first visit of pregnant women. The LiLA measurement was performed by using the measurement tape. If the results of the LiLA measurement show that the mother has CED, the mother will be given the nutritional counseling.

Checking fetal growth is one of Antenatal Care (ANC) goals. It is aimed to identify the fetal body size and the growth rate by gestational age. At every antenatal visit, the midwife will measure the fundal height (TFU) of pregnant women to monitor fetal development. The fundal height (TFU) can be performed from 24 weeks of gestational age using measuring tape (Harianis et al., 2020). This study found that the fundal height (TFU) measurement had been carried out by the midwives. The examination was performed using measuring tape or fingers. The implementation of fundal height measurements in antenatal care services at the Dinoyo Health Center is in accordance with the standards.

Determining the presence of the fetus and fetal heart rate (FHR) in pregnant women is very important, especially at 14 weeks of the gestational age or above. It is done to assess the

adequacy of oxygen in the womb. Factors that affect FHR are the mother's position at the time of examination, the anxiety felt by the mother, fetal stress, gestational age, and uterine activity (Chabibah & Laela, 2017). Based on the data obtained, three midwives calculated FHR above 16 weeks, 1 midwife answered above 14 weeks, and 1 midwife answered that she examined FHR in every visit of antenatal care. This is appropriate with the existing standards. This measurement is good to monitor the condition of the fetus. Monitoring fetal well-being is useful for seeing fetal development (Hodijah et al., 2018).

Newborns can be protected from the tetanus virus by vaccinating their mothers with Tetanus Toxoid (TT). Tetanus in neonates can occur when acquiring infection through contamination of the umbilical stump. The mother is at risk, especially when labor is unhygienic, and the mother does not have enough antitoxin because there is no suboptimal immunization to protect the mother and baby while in the womb (Khan et al., 2022). Tetanus Toxoid (TT) vaccination with a predetermined distance during antenatal care can protect mothers and prospective babies from tetanus (Purnamawati, 2022). The successful implementation of TT vaccination can be influenced by several factors, namely the attitude of pregnant women regarding TTT vaccination and their knowledge (Aswan et al., 2020). Screening of TT vaccination status at the Dinoyo Health Center had been carried out according to standards. The midwives conducted an initial screening of pregnant women regarding what immunizations have been obtained to determine the mother's current TT status.

Physiological changes during pregnancy, growth, and development of the fetus can increase the need for iron and folic acid. Pregnant women are said to be anemic if their hemoglobin level is less than 11 mg/L (Bundarini & Fitriahadi, 2019). Lack of iron and folic acid causes the mother to experience anemia. This condition is related to low body weight, premature birth, heart failure, bleeding, poor cognitive development, decreased work capacity, and folic acid deficiency can cause an increased risk of neural tube defects, preeclampsia, and fetal malformations (Assefa et al., 2019). Blood supplement tablets or iron (Fe) tablets are nutritional supplements that contain 60 mg of elemental iron and 0.25 mg of folic acid and function to prevent and treat iron nutritional anemia. Providing iron and folic acid supplementation before pregnancy can prevent iron and folate deficiency more than increasing supplement doses at later stages of pregnancy (Wildayani et al., 2018). World Health Organization (WHO) recommends 60 mg of iron and 400 mg of folate to be consumed every day (World Health Organization, 2016). Based on this research, the mother was given iron (Fe) tablets at every antenatal care visit. If iron (Fe) tablets was not available, they would be given in the next visit. It can be concluded that the midwives at the Dinoyo Health Center had routinely given iron (Fe) tablets to pregnant women.

Complete laboratory examination is required for pregnant women to find out abnormalities in pregnancy early. Therefore, they can be treated immediately. In this study, laboratory tests was carried out properly. Laboratory tests that was conducted for the pregnant women at Dinoyo Health Center include a complete blood count urine test (Albumin and Reduction), blood sugar check, and anti-HIV test. Based on the Permenkes No. 97 of 2014, there are two types of laboratory tests that are recommended for pregnant women, namely routine laboratories and specific laboratories. The routine laboratory test means laboratory examination that must be carried out for every pregnant woman, namely blood type, blood hemoglobin, and other examinations for endemic/epidemic areas (malaria, HIV, etc.). Specific laboratory examination is laboratory test for indications for pregnant women who make

Antenatal Care (ANC) visit (Kementerian Kesehatan Republik Indonesia, 2015). If abnormalities are discovered based on the outcomes of laboratory tests performed on pregnant women, they are treated right away in accordance with service regulations. This study demonstrated that all midwives had handled case management well. Women who had issues had been referred right away. Pregnant women with mild cases, such as hypertension, anemia, CED will be given counseling and medication, whereas if they find severe cases, such as infectious diseases, they are immediately referred to more appropriate health facilities (Wiyandani, 2019).

The Dinoyo Health Center did not routinely provide a counseling to pregnant women during their antenatal care visits. This study found that several midwives provided counseling only according to complaints from pregnant women. Some midwives only asked the mother to read the information that are available in the mother-child handbook. This finding was in contrast to the antenatal care indicators where each visit is required to provide at least 11 counseling topics which include Birth Planning and Complication Prevention, danger signs of pregnancy, increasing intelligence in pregnancy, Clean and Healthy Behavior, childbirth and postpartum, signs dangers of pregnancy, balanced nutrition intake, the role of husband and family in pregnancy and pregnancy planning, postpartum family planning, immunization, symptoms of communicable and non-communicable diseases, IMD, and exclusive breastfeeding. The information obtained during counseling will change the mother's behavior (Rani et al., 2022)

#### 4. Conclusion

This study found that one of the ten antenatal services (10T) at the Dinoyo Health Center did not fulfill the required standards, namely a counseling service. Pregnant women should have access to counseling services so that they can experience pregnancy and the postpartum period safely and healthfully. All essential topics should be presented to pregnant women in every counseling session at the Antenatal Care (ANC) visit. Therefore, prenatal service providers must maximize counseling services to give pregnant women the knowledge that they require to preserve their health.

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