

# Reported knowledge, attitude and practice of antenatal care services among women in Dodoma municipal, Tanzania

## Abstract

Antenatal care service is an important goal concerning in the health status of the pregnant women during their reproductive period and its health beneficial accounting for nearly one quarter of all pregnant worldwide. Early booking has an advantage for proper pregnancy information sharing and pregnancy monitoring. Unfortunately, adverse pregnancy outcome can occur even in women without identifiable risk factors. The objective of this study was to describe knowledge, attitudes and practices towards women seeking antenatal care from their previous pregnancy in Dodoma Municipal Tanzania. This was a cross sectional community based descriptive survey study. A pre-tested structured questionnaire was applied. Among the 500 women included, 299(59.8%) was from the age group of 19 to 25 years. A total of 477(95.4%) were at the level of primary education. About 341(68.2%) of them were housewives while 155(31%) of them worked as Petty business and only 4(0.8%) worked at the public work. 101(20.2%) of women having more than three children and categorized as multipara. A total of 104 women (20.8%) had history of home delivery and only 4 women (0.8%) had history of assisted by traditional birth attendance, however highest interviewed women 257(51.4%) had the hospital delivery and 117(23.4) had delivery at the health centre. Regarding of the reproduction history, 78(15.6%) of them had experienced episode of eclampsia, 235(47%) had episode of involved with perineal tear. Only 1(0.2%) of them had history of one stillbirth before while 186(37.2%) of the interviewed women had history of postpartum haemorrhage. The highest first antenatal clinic attendance of pregnancy were 28weeks of gestation age 169(33.8%) with the few of the women had attended at 36weeks of gestation age 20(4%). Only 62(12.4%) of the women admitted that they did come for antenatal visit during the first three months and others had the late visit. However, only 92(18.4%) admitted that they had delivery by caesarian section on their previous pregnancy while 408(81.6%) of them had spontaneous vaginal delivery. Only 60(12.0%) of women had one visit of antenatal clinic and 270(54.0%) were the highest which had two visit, three were 93(18.6) and four visit were 77(12.4%). In Conclusion, ANC services, awareness and the use of supplements therapy are promising in the pregnancy women. To achieve maximum ANC services and practices among pregnancy women with high and low risk groups, there is a need to integrate public and private sector concerning ANC services planned and conducted in order to improve their maternal health and eventually improve the health status of newborn child.

**Keywords:** ANC services, KAP, multiparous, Dodoma

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**Abbreviations:** CCBRT, comprehensive community based rehabilitation in Tanzania; ANC, attending antenatal clinics; SPSS, statistical package for social sciences; SP, sulphadoxine pyremethamine

## Introduction

Antenatal care service is an important goal concerning in the health status of the pregnant women during their reproductive period and its health beneficial accounting for nearly one quarter of all pregnant worldwide.<sup>1</sup>

Through the antenatal care service attempts have been made to identify pregnant women not at risk and those at risk group based on their previous pregnant or currently historical or clinical factors and steps are planned to prevent it in this allegedly high-risk group of women to reduce adverse pregnancy outcomes.<sup>2</sup>

Unfortunately, adverse pregnancy outcome can occur even in women without identifiable risk factors. Numerically, more pregnant women without risk factors have seen to end up with serious adverse outcome compared to those with risk factors during the attendance

of antenatal care service.<sup>3</sup> In order to prevent pregnancy adverse outcome world wide as well as in developing countries, interventions should therefore be targeted at all pregnant women attending antenatal care service and during childbirth.<sup>4</sup>

Early attendance intervention at the antenatal care service in those with and without risk group pregnant women seems to beneficially in relation of their health and this intervention that has been promoted as an effective intervention in preventing adverse pregnant outcome.<sup>5</sup>

The need of implementing knowledge, attitude and practice of ANC intervention in pregnant women it has been showed that as a package comprising the following interlocking system includes interventions, early screening, administration of a preventive prophylactic therapy and curative of the various detected risk conditions effectively on the basis of reduced maternal complications.<sup>6</sup>

Additionally, antenatal care service is not a single intervention; instead, it represents a series of assessments and interventions over time that is not uniformly applied effectively by different health care providers found in developing countries.<sup>7</sup>

Although not only the “quantity” of antenatal care service is relatively easy to measure through the required timing and number of visits adjusted for gestational age at delivery but also the “quality” of antenatal care service and the effectiveness of individual components on outcome are quite difficult to measure.<sup>8</sup> However, the major goal of antenatal care service is to ensure the birth of a healthy baby with minimal risk for the mother.

Despite high ANC attendance in Tanzania, only 14% of pregnant women start ANC during the first trimester as per the national guidelines. The median number of months that women are pregnant at their first visit is 5.4 months. One third of women do not seek ANC until their sixth month or later.<sup>9</sup> However, early booking has an advantage for proper pregnancy information sharing and pregnancy monitoring.

In everyday approximated 800 women worldwide die due to pregnancy and pregnancy delivery complications and most of these deaths occur in poor resource countries.<sup>10</sup> Tanzania is one of the ten countries contributing to 61% and 66% of the global total of maternal and newborn deaths, respectively (“CCBRT Strategy-Changing Lives, Changing Communities,” 2013).

In Tanzania, the estimated annual number of maternal deaths is 13,000, the estimate for under-fives is 157,000, and newborn deaths are estimated at 45,000.<sup>11</sup> In committing to MDGs 4 and 5, the Government of Tanzania agreed to reduce the under-five mortality rate by two-thirds and reduce the maternal mortality ratio by three-quarters, by 2015.<sup>12</sup>

**Table 1** Demographic characteristics of women with history of previous pregnancy antenatal care attendance in Dodoma municipal

Characteristics	Frequency	Percentage (%)
<b>Age Group</b>		
19-25	299	59.8
26-31	200	40
>47	1	0.2
<b>Marital Status</b>		
Single	8	1.6
Married	422	84.4
Cohabiting	69	13.8
Divorced	1	0.2
<b>Education</b>		
Primary	477	95.4
Secondary	20	4
University	2	0.4
College	1	0.2
<b>Occupation</b>		
Housewives	341	68.2
Petty Business	155	31
Public Work	4	0.8
<b>Residency</b>		
Urban	418	83.6
Rural	82	16.4
<b>Religions</b>		
Muslim	83	16.4
Christian	417	83.6

## Material and methods

### Study area, design and population

This cross sectional community based descriptive survey conducted between August 2014 and February 2015 in Dodoma municipal where

by majority of the interviewed women were from the urban area surrounding in the region, Dodoma region and is centrally located, well connected to the other regions, northern and the central-coastal areas of Tanzania. The study focused on women attending antenatal clinics (ANC) from their previous pregnancy history. Women who were at least 18 to 40 years old and consented to be interviewed were eligible to participate in the study. Participants were recruited consecutively until the sample size of 500 pregnant women was reached. Study participants were interviewed in Kiswahili language by the principal investigator, using a pre-tested structured questionnaire. The questionnaire covered socio-demographic information, questions on knowledge, attitudes and practices about antenatal care services. To guarantee privacy of the information from the participants, pregnant women were interviewed individually by the investigator in a room which was allocated at ANC. The interview was conducted after pregnant women had received all the ANC services.

### Data management and analysis

Analysis was performed using Statistical Package for Social sciences (SPSS) version 17. Data obtained were entered into computer and cleaned. The frequency to obtain prevalence of women attended to antenatal clinic from their previous pregnancy was done. Some of the independent variables were categorized according to objectives and Descriptive analysis was performed by using percentages, means and standard deviations.

### Ethical considerations

Ethical clearance was obtained from the university of Dodoma research committee and permission for research conduction was sought from local authorities of research site. Confidentiality was ensured and autonomy observed and the respondents were assured that the information obtained will not be exposed to any non-concerned member. Thorough information was given to the individual before obtaining consent for research. Whenever necessary medical advice and counseling was given to respondents so as to make sure that they not only benefit indirectly but also directly from the study.

## Results

### Socio-demographic characteristics of the study population

A total of 500 women agreed to participate in this study. The socio demographic characteristics are shown in Table 1. The largest number of the respondents 299(59.8%). The mean age was 25.5 years (SD=3.1 years) and ranged between 19 to 31 years. A total of 477(95.4%) were at the level of primary education. Quite a low proportion of the women 20(4%) receive secondary education and only 2(0.4%) and 1(0.2%) had highest education level. About 341(68.2%) of them were housewives while 155(31%) of them worked as Petty business and only 4(0.8%) worked at the public work.

### Reproductive history

The number of the respondent’s children ranged between one and four per women with 101(20.2%) of them having more than three children and categorized as multipara. A total of 104 women (20.8%) had history of home delivery and only 4 women (0.8%) had history of assisted by traditional birth attendance, however highest interviewed women 257(51.4%) had the hospital delivery and 117(23.4) had delivery at the health centre. Regarding of the reproduction history, every women have had at least one episode of high risk pregnancy before and among of the interviewed women, 78(15.6%) of them had

experienced episode of eclampsia, 235(47%) had episode of involved with perineal tear. Only 1(0.2%) of them had history of one stillbirth before while 186(37.2%) of the interviewed women had history of postpartum haemorrhage. Mean while the highest first antenatal clinic attendance of pregnancy were 28weeks of gestation age 169(33.8%) with the few of the women had attended at 36weeks of gestation age 20(4%).

### Knowledge on antenatal care

Table 3 shows the interviewed women's responses to the question on knowledge regarding antenatal care. There were 14 questions on knowledge, each correct answer was given one mark Yes and NO mark was given for wrong answer.

Further analysis of the questions on knowledge revealed that majority of interviewed women knows that, woman needs at least five visits of antenatal follow up throughout her pregnancy 461(92.2%). However, only 264(52.8%) interviewed women know that the important of using contraceptives methods. About 39(7.8%) of the women didn't know that pregnancy women needs at least five visits of antenatal follow up throughout her pregnancy. About 199(39.8%) of the women didn't know the complication which may arise with hypertension, that women with high blood pressure will affect the fetus growth in pregnancy. Only 399(79.8%) of the interviewed women know that first antenatal check-up and examinations should be done by midwives in the antenatal clinic.

**Table 2** Regarding reproduction history of previous pregnancies among women in Dodoma municipal

Reproductive history of previous pregnancy	Frequency	Women with specific response in (%)
<b>Previous High Risk Pregnancy</b>		
Post partum haemorrhage(PPH)	186	37.2
Eclampsia	78	15.6
Intra Uterine Foetal Death (IUFD)	1	0.2
Perineal tear	235	47
<b>Number of Previous Parity</b>		
One	6	1.2
Two	136	27.2
Three	257	51.4
Four	101	20.2
<b>Place of Delivery</b>		
Home	104	20.8
Traditional Birth Attendance(TBA)	4	0.8
Hospital	275	55
Health centre	117	23.4
<b>Gestational age during the antenatal clinic</b>		
12weeks	62	12.4
28weeks	169	33.8
32weeks	165	33
34weeks	84	16.8
36weeks	20	4

**Table 3** Knowledge on antenatal care among women in Dodoma municipal

Questions	Knowledge on antenatal clinic	Women with different answers about antenatal clinic	
		Yes (%)	No (%)
1	Does pregnancy woman need to know the important of coming at antenatal clinic?	371(74.2)	129(25.8)
2	Does the pregnancy with high blood pressure affect the fetus growth?	301(60.2)	199(39.8)
3	Does pregnancy woman know that she needs at least five visits of antenatal follow up throughout her pregnancy?	461(92.2)	39(7.8)
4	Does the first antenatal check-up and examinations done by midwives?	399(79.8)	101(20.2)
5	Does the pregnancy woman know the important using contraceptives methods	264(52.8)	236(47.2)
<b>Does pregnant woman need to undergo the following test during her antenatal clinic check-up?</b>			
6	Blood screening for HIV infection	326(65.2)	174(34.8)
7	Blood screening for syphilis infection	158(31.6)	342(68.4)
8	Blood screening for hemoglobin level	112(22.4)	388(77.6)
9	Blood pressure examination	68(13.6)	432(86.4)
10	Urine test for Protein	144(28.8)	356(71.2)
<b>Does pregnant woman need to be provided the following drugs during her antenatal check-up?</b>			
11	Vaccine for Tetanus Toxoid(T.T)	380(76.0)	120(24.0)
12	SP antimalarial prophylaxis	280(56.0)	220(44.0)
13	Ferrous sulphate	116(23.2)	384(76.8)
14	Albendazole	315(63.0)	185(37.0)

**Table 4** Selected practices on antenatal care among women in Dodoma municipal

Antenatal clinic practices	Frequency	Response in practices (%)
<b>Attendance number of antenatal clinic visit follow up</b>		
One	60	12
Two	270	54
Three	93	18.6
Four	77	15.4
<b>Contraceptive methods used among the women</b>		
COC	309	61.8
IUCD	92	18.4
NORPLANT	83	16.6
None	16	3.2
<b>Provided of the information regarding the uses of contraceptives</b>		
Health workers	176	35.2
Husband	228	45.6
Coworker	45	9
Media	51	10.2
<b>Mode of the previous delivery among the women</b>		
SVD	408	81.6
C/Section	92	18.4
<b>Gestational age during the antenatal clinic</b>		
12weeks	62	12.4
28weeks	169	33.8
32weeks	165	33
34weeks	84	16.8
36weeks	20	4

### Attitude on antenatal care

Table 2 & Table 3 for the individual interviewed questions YES and NO, it was noted that there was a good response to the statement on the importance of early antenatal booking where 371(74.2%) of the interviewed women agreed to it. However only 62(12.4%) of the respondents women agreed to go for their first antenatal booking at the gestation age of 12 weeks of their pregnancy regardless of agreed the important of early antenatal clinic. Almost all of the respondents 280(76.0%) out of 220(44.0%) agreed that given of sulphadoxine pyremethamine (SP) treatment are important for prevention of Malaria during their pregnancy. In terms of their attitude regarding contraceptive uses after delivery of their pregnancy, about 309(61.8%) of the women agreed to use oral combine contraceptives and accepting to be safe to use in advised of properly health care personnel and type of family planning both have not harmful effect to their health. Majority of the women 326(65.2%) to 174(34.8%) agreed to be screened during their attendance to antenatal clinic visits this show the successful awareness and willingness concerning the understanding of HIV transmission from the mother to child in the community.

### Selected antenatal practices

Table 4 shows the women were asked about their gestation age during their antenatal clinic follow up attendance only 62(12.4%) of the women admitted that they did come for antenatal visit during the first three months and others had the late visit for antenatal clinic follow up that signified poor understanding the important of antenatal visiting regarding their gestational age of their previous pregnancies. However, only 92(18.4%) admitted that they had delivery by caesarian section on their previous pregnancy while 408(81.6%) of them had spontaneous vaginal delivery. In general, all 500 interviewed women claimed that they had receive a good health care and service during their attendance at the antenatal clinic which was provided by the well trained health care provider during their all previous pregnancy. Only

60(12.0%) of women had one visit of antenatal clinic and 270(54.0%) were the highest which had two visit, three were 93(18.6) and four visit were 77(12.4%).

### Discussion

The current rate of ANC visits among pregnancy women in Africa are undoubtedly decreasing because of poor improvement in reproductive health services, individual ignorance and community unawareness increase.<sup>13</sup>

Currently, ANC visit still remain burden in all pregnancy women and as well as those who expecting to be pregnancy, this need an effort globally as well as Tanzania to eliminate the concept of not understanding the important of ANC visit in the near future.<sup>14</sup> However, the initiation of the program of ANC services requires good knowledge and awareness of appropriate preventive measures among the general public to ensure positive health behavior changes and reproductive health seeking habits in both partners.<sup>15</sup>

This study revealed that women have inadequate knowledge regarding the importance of coming early for their first antenatal check-up. Their ignorance resulted in late antenatal booking where only 12.4% of the women came for their antenatal booking in the first trimester. This is lower as compared to findings in another study done in Ghana where 63.6% of the women interviewed admitted going for their first antenatal check up in the first trimester.<sup>16</sup>

ANC service if could be uses according to the standard required by WHO among pregnant women its sequelae could have been found to be decreasing in different areas of Africa.<sup>17</sup> In community surveys of six sub-Saharan countries, use of ANC service by pregnant women varied from 32% to 69%.<sup>18</sup>

In another survey in Sudan where pregnant women were interviewed in ANC clinics and Delivery Units, 58% reported to attend at least 3 visits during their pregnancy.<sup>19</sup>

Majority of the pregnant women in the present study 54% reported to have two visit of ANC from their previous pregnancy and about 15.4% only reported to have 4 visits of ANC visits. This observation gives a promising future to attain the Focused Antenatal Care campaign failure to reach a goal of at least 80% visit coverage in pregnant women.<sup>20</sup>

At the time of this study, ANC service visit were only 60% in the country and few delivery at the health centre and hospital left the other with home delivery end up by delivery complications, as part of the Tanzania government strategies to promote the important of ANC visit is needed in order to overcome with this burden.<sup>21</sup> This could partly explain the high level of unawareness the important of ANC services.

The women in this study has face similar characteristic with other study done in Malawi attend ANC women in terms of education, marital status and occupation where majority of them had primary level of education, on the other hand were function as fulltime housewives.<sup>22</sup> These conditions pose a greater health risk to them toward the awareness of ANC important during their pregnancy.

Various studies have also demonstrated that lack of formal education, poor infrastructure and poverty had resulted decreasing number of ANC attendance and risk of developing nutritional deficiency anaemia among the population including women of reproductive age group which subsequently may lead to unfavorable pregnancy outcome.<sup>23</sup> In this instance, effective poverty eradication programme would be very important to act as the source of spreading in breaking the linked of poverty and poor health.

The overall understanding of PMTCT status and effective means to prevent transmission from mother to child were good in this study. However 34.8% of the women reported being worried about screening for their HIV-AIDS status during their pregnancy.<sup>24</sup> Reason for this was due to avoid conflict and divorced between their husband, cohabiting relationship and partner.

In this study, it was noted that high risk pregnancy was common among the women of reproductive age group between (19-25years) 59.8%. In this instance, effective counsel regarding appropriate action to be taken during the pregnancy at the early reproductive age should be emphasized in order to eradicate the risk of adverse pregnant outcome.

The proportion of grandmultipara 51.4% was also reported to be high in this study which needs an intervention program planned for these women since they will be in reproductive period for the next 20 years or more. These vulnerable women can easily end up with high risk pregnancy resulting in poor maternal and fetal outcome if no proper antenatal care is offered to them early. Therefore, it is imperative to educate these women and her family on appropriate family planning methods regarding their health status.<sup>12</sup>

In terms of access to family planning services, the findings of this study revealed that majority of the women used oral contraceptive method 61.8% for preventing from unwanted pregnancy resulting in good awareness followed important antenatal follow up among the women. This is probably due to availability of proper counseling and education connecting the uses of family planning methods to the nearest antenatal clinic service.

As an effort to reduce the high incidence of iron deficiency anaemia among the pregnancy women all over the world, iron supplements were given to them antenatal. This study revealed that few numbers of the women 23.2% has good knowledge and attitude regarding iron

supplement during pregnancy. This fact ferrous sulphate is needed to be strengthened its supply by reaching the high proportion of women to be provided good haemoglobin level in their body from the clinic during their antenatal follow-up.<sup>25</sup>

The practice of home delivery is still common act as additional risk if they ever want to conceive again. About half of the women did not know the complications that might arise among women delivery at home. These high risk women need specific antenatal care and recommended for hospital delivery.<sup>24</sup> However, home delivery is still a preferred practice among women seen in this study where about 20.8% of the women reported having experience of home delivery in their previous pregnancies contradicting to the good attitude demonstrated regarding hospital delivery.

Result showed quite a high proportion of women 56% who receiving SP under supervision when they attended antenatal clinic for their antenatal bookings. This is an important point to be considered in every pregnancy women and as usually in high proportion of them receiving SP very late during their antenatal booking.<sup>26-36</sup> These practices were significantly associated with poor pregnancy outcome regarding intermittent presumptive treatment against malaria in pregnancy during antenatal care.

The findings of this study, however has its own limitations as it based only Dodoma urban in Tanzania, different findings might be seen if the study could conducted in another regions apart from Dodoma therefore cannot reflecting the entered population of Tanzania toward the ANC services. However, this study may act as a preliminary survey due to the scarcity of published data regarding the reproductive health regarding the important of ANC services.

In conclusion and recommendation, acceptability of ANC services, and awareness and use of supplements therapy should be promising implemented in the population. To achieve maximum ANC services and practices among pregnancy women with high and low risk, there is a need to integrate public and private sector concerning ANC services planned and conducted in order to improve their maternal health and eventually improve the health status of newborn child. Empowered of women toward the primary level of education should be focused in order to have good maternal health outcome.<sup>36-48</sup>

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## Conflicts of interest

The authors declare there is no conflict of interests.

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