

Antenatal Care: Utilization Rate and Barriers in Bosaso-Somalia, 2019

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Abstract: Mothers and children are among the most vulnerable population groups requiring special attention and care. The fourth and fifth Millennium Development Goals (MDGs) address child mortality and maternal health, respectively. Although maternal mortality rate (MMR) has declined globally between 1990 and 2015 by 44%, the World Health Organization (WHO) estimates that 99% of global maternal mortality takes place in the developing countries. Somalia has one of the highest maternal and child mortality rates in the world, with 732 mothers dying in every 100,000 live births. Mainly, such high MMR is the outcome of the devastating civil wars that disrupted the country's health infrastructure with limited antenatal care (ANC) coverage (26% only). We conducted a community-based cross-sectional study using a quantitative approach to identify ANC utilization rate and barriers among mothers having a child less than one year of age in Bosaso from October – November 2019. A sample size of 384 mothers was interviewed by using a structured questionnaire, and SPSS was used to analyze the collected data. This study found that (84.1%) of the respondents utilized ANC services during their last pregnancy, but only 28% of them completed the recommended number of ANC visits for pregnant women. The main barriers hindering the utilization of ANC services were identified to be distance of the health centers, financial constraints, inadequate knowledge and attitude of the respondents and their husbands, poor attitude of the healthcare providers, and time and family-related issues. Based on the findings of the study, we recommend uplifting the awareness of the family/mothers for the utilization of antenatal care services in health facilities.

Keywords: Antenatal Care Utilization, Mothers, Antenatal Care Barriers, Bosaso

1. Introduction

There is no doubt that health is a human right [1]. Mothers and children are among the most vulnerable population groups requiring special attention and care. The fourth and fifth Millennium Development Goals (MDGs) address child mortality and maternal health, respectively [2]. Although the

maternal mortality rate (MMR) has declined globally between 1990 and 2015 by 44% [3], the World Health Organization (WHO) estimates that 99% of global maternal mortality takes place in the developing countries [4].

Because of the civil war and political setbacks, Somalia is one of the least developed countries in the world [5]. This political turmoil has had negative impacts on its development,

particularly the health sector [6]. This sector remains weak, poorly resourced and inequitably distributed since 3.2 million women and men in Somalia are in need of emergency health services. Despite the international and national efforts in restoring Somalia's health system, the country has one of the highest maternal and child mortality rates in the world [7, 8], with 732 mothers dying in every 100,000 live births [7]. Such high MMR is, mainly, the outcome of the devastating civil wars that disrupted the country's health infrastructure [9–12], resulting in limited antenatal care (ANC) with 26% coverage only [8].

Because the available reproductive health services in Somalia are limited [8, 14], mothers' utilization of those services is a significant concern [15, 16]. Underutilization of already scarce reproductive health services will only make the maternal health status in Somalia worse. Therefore, to improve maternal and child health, reproductive health services, such as ANC [13], should be in place.

In general, the utilization of maternal health services is affected by several factors, including its availability, accessibility, affordability, timely care delivery, mothers' health literacy, and the attitude of healthcare providers [17–22]. Although universal access to ANC services is essential, however, if utilization barriers are not identified and removed, progress towards reducing maternal morbidity and mortality will be hindered.

Unfortunately, there is minimal literature on the specific factors associated with mothers' utilization of ANC and its consequences in Somalia. Only one study, conducted in Hargeisa – Somalia [16], has reported that mothers' literacy, health workers' attitude, waiting time, male decision-making influence, and other factors impacted mothers' ANC utilization.

Since health research capacity in Somalia is limited [23], studies on reproductive health services utilization are scarce. This study will, therefore, hopefully, contribute to filling this gap. The study aims to identify the ANC services utilization rate and barriers among mothers in Bosaso, Somalia. Such information is crucial in planning for more effective maternal health services to yield a better utilization rate and eventually reduce MMR.

2. Methods and Materials

2.1. Study Design and Study Area

A community-based cross-sectional study was conducted with a quantitative approach to identify ANC utilization rate and barriers among mothers having a child less than one year of age in Bosaso from October – November 2019. Bosaso, which is located in the northeast of Somalia, is the headquarter of the Bari Region. Also, it is the principal commercial city of Puntland State of Somalia.

2.2. Sample Size and Sampling Method

A single population proportion formula for sample size determination was used. The antenatal care (ANC) coverage

was unknown; therefore, it was taken as a 50%.

The sample size became 385, and it was determined by using the formula below:

$$N = Z^2 (P) (1-P) / D^2$$

Where

N=desired Sample size Z=1.96, the factor from normal distribution

P=estimated period of prevalence D=absolute sampling error.

A multi-stage sampling technique comprising of a simple random sampling method and convenience sampling technique was used. Simple random sampling was used to select the villages, and the convenience sampling technique was used to identify households with mothers having a child less than one year. The names of all the 16 villages of Bosaso were written on pieces of paper, folded, put in a container, and shaken thoroughly. Eight of them were picked to get the villages for the study. The study participants were selected equally from the eight villages. In each village, 48 respondents were selected using a convenience sampling technique. In any house entered, Mother in the household who had a child less than one year was interviewed. This process was continued until the entire 384 sample size was selected.

2.3. Data Collection and Analysis Methods

Data was collected through face to face interviews of the mothers with children aged less than one year in the selected households. A structured questionnaire was used as a data collection tool.

After the fieldwork, the data was analyzed by using the SPSS program of data analyzing, version 21.

3. Results

3.1. Socio-Demographic Characteristics of the Respondents

Table 1 summarizes the socio-demographic characteristics of the respondents. For instance, the mean age of the respondents was 29 years old and about 50% of the mothers were the age group between 27-37 years. concerning the marital status of respondents, most of the mothers 87.8% were married, whereas 11.2% were divorced and the rest were widowed. Regarding education level of mothers, the majority 40.9% had primary level of education, whereas 35.7% were illiterate, and 13.5% of the mothers had secondary level of education, while the rest (9.9%) were college and university level of education. regarding to husbands' educational status of the respondents, 24.5% had college and university level of education, 21.6% had primary level of education, 21.1% had secondary level of education, and the rest 20.6% were illiterate. Concerning the occupation of the respondents, most of the mothers 74% were housewives, 4.9% were employees, whereas 13% were self-employed, and the rest 8.1% were unemployed. A significant number of mothers 67.2% stated that their family monthly income was below 250 dollars per

month, 25.3% had an income from 250 to 500 dollars per month and the rest 7.6% had an income of above 500 dollars. Finally, 43.8% of the respondents reported that their family consists of more than 6 members; 37.8% had 2-4 members, and the rest 18.5% had 4-6 members.

3.2. Knowledge Level of Respondents on ANC Beneficiaries and Recommended Number of Visits

In investigating the know-how of the respondents on ANC beneficiaries and recommended number of visits (Table 2), it was found that the majority of the respondents 31.8% didn't know the minimum required ANC visits, whereas 27.3%, 21.9%, and 11.7% of the mothers responded, respectively that three, four and two times are needed for minimum ANC visits. Only 7.3% of them believed that one visit is enough for ANC during pregnancy. Most of the mothers 78.9% knew that both mother and fetus are ANC beneficiaries, while 12.5% of them thought that only the mother is considered as an ANC beneficiary and 3.1% responded that ANC services are only for the fetus. The rest (5.5%) stated that they didn't know ANC beneficiaries (Table 2).

3.3. Utilization of ANC Services Among Mothers

Table 3 shows that 84.1% of the mothers visited health facilities for ANC during their last pregnancy, while the rest (15.9%) of the mothers didn't visit health facilities for ANC. As presented in Table 3, of the total respondents 84.1% attended ANC because of various reasons. Of the given reasons, about (58.5%) of the respondents reported that they seek ANC for regular health checkups, while (41.5%) had a specific health problem. Regarding Number of ANC visits in last pregnancy, majority of the respondents, (59.8%), visited 2-3 times at health facilities for ANC, (27.9%) of them attended health facilities for ANC four times or more than,

while the rest (12.4%) mothers indicated that they visit ANC centers only one time during the period of their last pregnancy. When asked about the ANC utilization in their previous pregnancy, most of the mothers 48.6% attended their first ANC during the second trimester, while 26.6% attended their first ANC during the third trimester of gestation. The rest 24.8% attended their first ANC during the first trimester of gestation. As to the nature of ANC used, most of the mothers 91% received ANC from primary health care centers and 9% got ANC services at hospitals. Further, of the women who attended ANC, only 3.5% decided by their own to attend ANC, while 15.2% were advised by their husbands and 13.3% were motivated by their family members. The rest 8% were encouraged by friends.

3.4. Accessibility of ANC Services

In relation to the accessibility of the ANC services and time taken to reach the health facilities (Table 4), the respondents answered as follows: About 43.7% of the respondents took less than 30 minutes to reach health facilities, where as 43.3% of them travelled in 30 to 60 minutes. The rest 13% travelled more than one hour to reach the nearby health facility. It is worthwhile to note that most of the mothers 69.3% travelled on foot to get the service, 17.6% used public transportation and 13% travelled using private transportation including taxis or personal cars. Regarding the waiting time of the respondents for ANC services, about 45.5% of the mothers took less than 30 minutes to wait ANC service, 43.7% for 30 to 60 minutes and 10.8% waited for more than one hour to receive ANC service. The time that the respondents spent with the health care provider varied from 5 to more 25 minutes (Table 4).

Table 1. Socio-Demographic Characteristics of the Respondents.

Variables	Categories	Frequency	Percent
Age of Mothers	16-26	152	39.6
	27-37	192	50.0
	38-49	40	10.4
Marital status of Mothers	Married	337	87.8
	Divorced	43	11.2
	Widowed	4	1.0
	College/University	38	9.9
Education Level of Mother	Secondary	52	13.5
	Primary	157	40.9
	Illiterate	137	35.7
	College/University	94	24.5
Education Level of Husband n=337	Secondary	81	21.1
	Primary	83	21.6
	Illiterate	79	20.6
	Employee	19	4.9
Occupation of Mothers	Self Employed	50	13.0
	Jobless	31	8.1
	Housewife	284	74.0
Monthly Family Income	<\$250	258	67.2
	\$250-\$500	97	25.3
	> \$500	29	7.6
Family Size	2-4	145	37.8
	4-6	71	18.5
	>6	168	43.8

Table 2. Knowledge level of Respondents on ANC beneficiaries and recommended number of visits.

Variables	Categories	Frequency	Percent
Regular Number of ANC visits	1 time	28	7.3
	2 times	45	11.7
	3 times	105	27.3
	4 times	84	21.9
	I don't know	122	31.8
Beneficiaries of ANC services	Mothers	48	12.5
	Embryo	12	3.1
	Both Mothers and Embryo	303	78.9
	I don't Know	21	5.5

Table 3. Utilization of ANC services.

Variables	Categories	Frequency	Percent
ANC attendance	Yes	323	84.1
	No	61	15.9
	Total	384	100.0
Reasons for ANC usage;	Health Problem	134	34.9
	Regular health Checkups	189	49.2
	1 time during the pregnancy period	40	10.4
Number of ANC visits in last Pregnancy;	2-3 times	193	50.3
	more than or equal to 4	90	23.4
	1-3 months (first trimester)	80	20.8
First ANC visit in last Pregnancy	4-6 months (second trimester)	157	40.9
	7-9 months (third trimester)	86	22.4
	Hospital	29	9.0
Places of ANC services	Primary Health Care centers	294	91.0
	Husband	49	15.2
	Family Member	43	13.3
Motivating Person to visit ANC services	Friends	26	8.0
	No one	205	63.5

Table 4. Accessibility of ANC services.

Variables	Categories	Frequency	Percent
Time taken to reach Health Facility	less than 30 minutes	141	43.7
	30 minutes-1hour	140	43.3
	More than 1 hour	42	13.0
	Total	323	100.0
Transportation means to ANC services	Walking	224	69.3
	Public transportation	57	17.6
	Private	42	13.0
	Total	323	100.0
Waiting time for ANC services	Less than 30 minutes	147	45.5
	30 minutes to 1 hour	141	43.7
	More than 1 hour	35	10.8
	Total	323	100.0
Time taken with health care providers	5 minutes to 15 minutes	116	35.9
	15 minutes -25 minutes	146	45.2
	more than 25 minutes	61	18.9

3.5. Barriers of ANC Utilization

Finally, figure 1 reports the various reasons that the respondents provided to explain why they did not visit ANC services. These barriers included financial constraints, the bad attitude of the health care providers, lack of accessibility

because ANC services were distant, influence of the husband, long waiting times, family matters, lack of awareness. A good number of them believed that ANC was not essential for their health (see Figure 1).

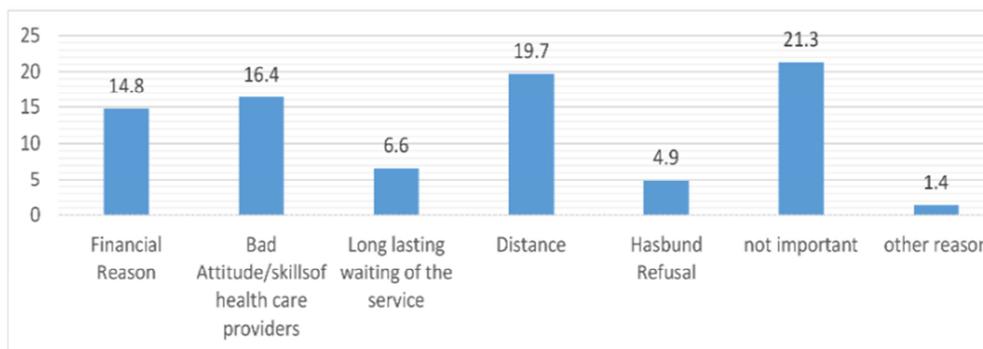


Figure 1. Barriers of ANC utilization.

4. Discussion

This study aims to assess ANC utilization rate, accessibility, and knowledge among mothers in Bosaso city of Somalia. This study revealed that 323 (84.1%) of the mothers utilized ANC services during their last pregnancy, which is higher than previous study conducted in Guriel district of Somalia which stated 54% of the mothers utilized ANC services [24]. The high level of ANC attendance in Bosaso could be attributed to the availability of free primary healthcare services provided by the Ministry of Health of Puntland state of Somalia in collaboration with international organizations. Pregnant women are recommended to attend at least four ANC visits at specific gestational ages during their pregnancy, therefore this study indicates that 28% completed the recommended number of ANC visits for pregnant women which is lower compared to a study conducted in Hargeisa-Somalia which reported that about 37.6% completed the required number of ANC visits [25]. Compared to East African countries, ANC coverage in Somalia was lower than other countries in the region, Somalia was 31%, Kenya was 58%, and Ethiopia was 74% [26-28]. This could be attributed to insecurity in the country, political setbacks, cultural issues and low level of education among Somali women.

In addition, most of the respondents 91% received ANC from primary health care centers. Among 323 women who attended ANC centers, 63.5% decided by their own to attend ANC. Possibly, this is due to awareness conducted by the Ministry of Health and other health organizations to pregnant women on the importance of ANC services, but nearly half of the respondents 48.6% started ANC visits during their second trimester, thus at relatively late stage of pregnancy. This is comparable to a study conducted in Menit-Shasha District of Ethiopia, where it was found that 71.1% of the mothers started ANC during their second trimester [29]. As shown in Table 3, 15.9% of the respondents had never attended ANC due distance of the health centers, financial constraints, poor knowledge of the respondents and husbands, poor attitude of the healthcare providers and time and family related issues.

Most of the middle aged women (27-37 years), about 51%, used the ANC service better than other age groups. Again, this is similar to a study conducted in Nigeria, which showed that there is higher utilization of ANC services among middle age

group than other age groups [30]. It is important to note that the majority of the mothers (88.5%) using ANC services were married. About 88% of the study participants were housewives and most of them attended ANC service. Regarding the education level of mothers, nearly half of them (40.9%) had primary level of education. The findings of this study differs from another study conducted in Ibadan - Nigeria which showed that majority of the mother (55.8%) were of secondary level [31]. This can be attributed to lack of functional government which can provide formal education services to Somali children. In fact, in Somalia, most of the schools are private and most of the parents can't afford their children's education. In addition to that, poverty, long distances to school, security issues, social norms favoring boys' education than girls, and lack of female teachers, impede parents from enrolling children, particularly girls, in schools.

In regard to the respondents' knowledge on required ANC visits and beneficiaries of ANC services, this study revealed that the majority of the respondents 78.1% didn't know the minimum required ANC visits, but most of them 78.9% knew that both mother and fetus are ANC beneficiaries, in contrast to another study in Ethiopia which reported that 68.7% didn't know ANC beneficiaries. [29]

The majority of the mothers who attended ANC services 69.3% travelled on foot to get the service. Comparatively, another study conducted in Ethiopia stated that 93.5% travelled on foot to get the service [30]. Most of the mothers 43.7% travelled less than 30 minutes to reach health facilities for ANC services, whereas (45.2%) of them took with health care provider 15 to 25 minutes.

5. Conclusion and Recommendations

In this study, we investigated the ANC utilization rate, accessibility, and knowledge among mothers in Bosaso city of Somalia. The study revealed that 84.1% of the respondents utilized ANC services during their last pregnancy, but only 28% of them completed the recommended number of ANC visits for pregnant women. The main barriers hindering the utilization of ANC services are due to distance of the health centers, financial constraints, poor knowledge and attitude of the respondents and their husbands, poor attitude of the healthcare providers and time and family related issues.

Women who have some education visit the health centers, and those who live nearer to health facilities were found more likely to visit ANC services. Therefore, based on the study results, we recommend that the responsible bodies should focus on strengthening basic adult education and they should educate the women on income generating skills. It is also essential to uplift the awareness of the family/mothers about the availability of Antenatal care services in health facilities.

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