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Research Article

Knowledge and Attitudes Toward the Use of Antenatal Care Contacts among Pregnant Women Attending a Reproductive Health Clinic in Dar Es Salaam, Tanzania

Tainoi Kayu[1,2]*, Lucy Kisaka[1] and Tumbwene Mwansisya[1]

[1]*School of Nursing and Midwifery, The Aga Khan University, Dar es Salaam, Tanzania*

[2]*Kimara Health Center, Dar es salaam, Tanzania*

***Corresponding Author:** Tainoi Kayu, School of Nursing and Midwifery, The Aga Khan University, Dar es Salaam, Tanzania.

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Abstract

Background: Antenatal care (ANC) is a key intervention to address maternal mortality. ANC helps identify and avoid pregnancy-related problems and saves the lives of mothers and babies. A minimum of eight ANC contacts is recommended to promote healthy motherhood and positive pregnancy outcomes. Despite efforts to reduce maternal and neonatal mortality, ANC use remains low in middle- and low-income countries, including Tanzania.

Objective: This study aimed to determine knowledge and attitudes toward ANC use among pregnant women attending a reproductive health clinic in Dar es Salaam, Tanzania.

Methods: This study used a cross-sectional design to assess pregnant women's knowledge and attitudes toward the use of ANC and the impact of these factors on ANC use. Data were gathered from 200 pregnant women using self-administered questionnaires. Data were entered, analyzed, and interpreted using SPSS version 25. Chi-square tests were used to examine relationships between categorical variables and ANC use. Binary logistic regression was used to determine predictors of ANC use. P-values of 0.05 were considered statistically significant.

Results: The findings showed that in terms of women's sociodemographic characteristics, education, and occupation were statistically significantly associated with ANC use (p = 0.05). There were also statistically significant relationships between ANC use and women's knowledge (p = 0.00) and attitudes (p = 0.01). Moreover, marital status and residence were significant predictors of ANC use.

Conclusion: This study demonstrates that women's knowledge, attitudes, occupation, and education status are associated with their ANC use. Marital status and residence are predictors of women's ANC use. Further research should investigate these relationships across a variety of populations to inform targeted interventions and improve maternal and neonatal health outcomes.

Keywords: *Antenatal Care Contacts; Pregnant Women; Knowledge; Attitude; Service Use*

Abbreviations

ANC: Antenatal Care Contacts; RCH: Reproductive and Child Health Clinic; TDHS: Tanzania Demographic Health Survey; WHO: World Health Organization; UMC: Ubungo Municipal Council

Introduction

Antenatal care contact is the care provided by skilled healthcare professionals to pregnant women and adolescent girls to ensure the best health conditions for both mother and baby during pregnancy [1,2]. Identification of risks, the prevention, and treatment of illnesses associated with pregnancy or other conditions that may occur at the same time, as well as health advocacy and education, are all elements of ANC [3]. An essential proximate predictor of maternal and infant results is the use of healthcare facilities [4]. Using ANC can help prevent some obstetric complications that directly cause maternal and neonatal fatalities as well as better the outcomes of other pregnancy complications [5,6]. Maternal healthcare services have long been recognized for their importance in lowering maternal mortality and morbidity [6]. It is, however, difficult to implement and ensure the use of effective maternity care for women in developing countries [7]. Focused Antenatal Care was designed to be a client- and goal-focused program that mandated pregnant women to attend at least four ANC appointments throughout each pregnancy [8]. Although the terms visit and antenatal contacts suggest a passive relationship between a pregnant woman and a healthcare provider, the World Health Organization requires that all pregnant women receive a minimum of eight antenatal care contacts (ANCs). Allows for the opportunity to reach pregnant women with interventions that may be crucial to their health and well-being and that of their unborn children, as opposed to the current standard of four visits to effectively identify complications as they arise and significantly lower perinatal and maternal mortality [3].

Globally its only 36% of pregnant women still visit antenatal clinics fewer than four times throughout their entire pregnancy, and some don't even go to antenatal visits, despite the availability and significance of ANC services [9]. However, a study conducted in Indonesia ANC utilization is accounted for 95% of pregnant women have a high ANC utilization due to factors of maternal age, husband/partner involvement, education level, wealth, and insurance [10], compared to a study carried out developing countries whereby 16.6% of Indian women having no ANC contacts, 31% having one to three contacts, and just over half receiving four 52% [11]. Higher household income, parental education, and household wealth standing affected the study's results [11].

Only 9% of women in Cameroon adhered to new antenatal care contacts, according to a study that was conducted in that nation of sub-Saharan Africa. Non-compliance with a minimum of eight contacts is also very common in SSA, and the main causes are poor economic standing, living far from a health facility, and the cost of traveling to a health facility [6,12]. In 2015, around 303,000 women and teenage girls died as a result of pregnancy- and childbirth-related complications (e.g. postpartum hemorrhage, infection, pre-eclampsia, and anemia); 98% of these deaths occurred in low- and middle-income countries, the majority of which were preventable [3].

Only about 71 percent of pregnant women in sub-Saharan Africa visit an ANC clinic at least once, and only about 44% of them visit an ANC facility four or more times [1]. Additionally, according to TDHS 2016, only 43% of women attend more than four contacts, and this is affected by women's education, household wealth, informal employment, and radio listening [13]. This study was conducted in a reproductive health center where from the health data system of January 2023 women with the utilization of ANC 419 participants out of 1221 and indicated that prevalence of 34% this influenced me to assess the knowledge and attitude towards utilization of antenatal care contacts among pregnant women [18].

Materials and Methods

Study design

This quantitative study used a descriptive, cross-sectional design in which data were gathered at one point in time. This design allowed the examination of associations between ANC use and other variables.

Study setting and participants

This study was conducted at a reproductive health clinic in Dar es Salaam, Tanzania. Participants were pregnant women aged 18-45 years who attended the participating reproductive clinic.

Data collection

Participants completed a paper-based, self-administered, structured questionnaire containing closed-ended questions. The questionnaire took 20-30 minutes to complete. The questionnaire was adapted and designed in English based on a review of relevant literature [12] and then translated into Swahili, which was the participants' native language.

Data analysis

Data was entered, cleaned, coded, and evaluated using SPSS version 25.0. Data analysis involved both descriptive (e.g. percentage, frequency, mean, standard deviation, range) and inferential (e.g. chi-square tests) statistics. Relationships between independent and dependent variables were examined using logistic regression analysis. The level of statistical significance was set at a p-value of 0.05%.

Ethical considerations

Ethical clearance for this study was obtained from the Aga Khan University Ethical Research Committee. In addition, approval to conduct this study was obtained from the District Medical Officer and authorization for data collection was obtained from the participating health facility. Participants expressed their willingness to participate in this research by providing written informed consent before data collection started. To preserve participants' privacy, names were not used in data collection; instead, participants were assigned numbers.

Results

Sociodemographic characteristics

Participants' mean age was 26.76 ± 5.898 years (range 17-42 years). The mean parity was 1.42 ± 0.937 (range 0-4) and the mean gravidity was 2.4 ± 0.967 (range 1-5). More than half of the participants were married (n = 119, 59%) and 36 (18%) were unmarried. All participants were literate and had completed primary, secondary, or tertiary education. Sociodemographic details are shown in table 1.

Variable	Category	Frequency	Percentage
Marital status	Single	36	18.0
	Married	119	59.5
	Cohabiting	44	22.0
	Divorced	1	0.5
Education level	Primary	72	36.0
	Secondary	109	54.5
	Tertiary	19	9.5
Occupation status	Employed	16	8.0
	Self-employed	95	47.5
	Housewife	89	44.5
Partner's education	None	4	2.0
	Primary	49	24.5
	Secondary	99	49.5
	Tertiary	48	24.0
Partner's occupation	Employed	74	37.0
	Self-employed	126	63.0
Residence	Urban area	109	54.5
	Rural area	14	7.0
	Semi-urban area	77	38.5
Distance from the health facility	<5 km	162	81.0
	≥5 km	38	19.0

Time to reach the health facility	<1 hour 1 hour 2 hours 3 hours	119 54 21 2	59.5 27.0 10.5 1.0
Religion	Islamic Christian	76 124	38.0 62.0

Table 1: *Participants' sociodemographic characteristics.*

Relationships between sociodemographic characteristics and ANC use

Chi-square tests were used to examine relationships between categorical sociodemographic characteristics and ANC use (Table 2). Education (p = 0.02) and occupation (p = 0.05) had statistically significant relationships with participants' ANC use.

Variable	Category	ANC use		Statical test		
		Good	Poor	X^2	df	p-value
Education level	Primary Secondary Tertiary	50 75 9	22 34 10	3.67	2	0.02
Marital status	Unmarried Married Cohabiting Divorced	22 82 29 1	14 37 15 0	1.277	3	0.735
Occupation	Employed Self-employed Housewife	10 63 61	6 32 28	0.26	2	0.05
Partner's education	No Primary Secondary Tertiary	2 35 68 29	2 14 31 19	2.026	3	0.047
Partner's occupation	Employed Self-employed	49 85	25 41	0.033	1	0.857
Residence	Urban area Rural area Semi-urban area	70 12 52	39 2 25	2.608	2	0.271
Religion	Islamic Christian	55 79	21 45	1.598	1	0.206
Distance to the health facility	<5 km ≥5 km	112 22	51 15	1.168	1	0.280

Table 2: *Sociodemographic characteristics and ANC use.*

Relationship between knowledge and ANC use

Chi-square tests were conducted to determine the association between participants' knowledge of ANC and their ANC use (Table 3). Knowledge was statistically significantly related to ANC use (X^2 = 200, df = 4, p = 0.00).

1.00		Knowledge category		Statistical test		
		2.00	X^2	df	P-value	
Total knowledge	5.00	22	0	200	4	0.00
	6.00	0	61			
	7.00	0	84			
	8.00	0	25			
	9.00	0	8			
Total		22	178			

Table 3: *Relationship between women's knowledge and ANC use.*

Relationship between attitude and ANC use

There was a statistically significant relationship between participants' attitudes toward ANC and their ANC use (p = 0.05) (Table 4).

	Use of ANC				
	Poor	Good	X^2	df	p-value
Good attitude	37	140	3.130	1	0.05
Poor attitude	9	14			

Table 4: *Participants attitudes toward ANC and ANC use.*

Predictors of ANC use among pregnant women

The binary regression analysis conducted to identify predictors of ANC use (Table 5) showed participants' place of residence (p = 0.01, df = 1) and marital status (p = 0.00, Df = 1) predicted their ANC use.

	B	SE	Wald	Df	Sig.	Exp(B)
Marital status			0.449	3	0.930	
Single	−20.204	40193.113	0.000	1	1.000	0.000
Married	−20.379	40193.113	0.000	1	1.000	0.000
Cohabiting	−20.037	40193.113	0.000	1	1.000	0.000
Age category	0.106	0.063	2.825	1	0.093	1.112
Education level			0.484	2	0.785	
Primary	0.287	0.716	0.161	1	0.689	1.332
Secondary	0.435	0.662	0.432	1	0.511	1.545
Occupation status			1.431	2	0.489	
Employed	−0.842	0.729	1.335	1	0.248	0.431
Unemployed	−0.056	0.437	0.017	1	0.897	0.945
Partner's education	0.165	0.457	0.131	1	0.717	1.180
None			1.751	3	0.626	
Primary	−0.778	1.615	0.232	1	0.630	0.459
Secondary	0.334	0.659	0.257	1	0.612	1.396
Tertiary	−0.302	0.532	0.321	1	0.571	0.740

Place of residence			13.552	2	0.001	
Urban area	1.384	0.407	11.543	1	1.054	8.669
Semi-urban area	−19.943	40192.447	0.000	1	1.000	.000
Religion	0.085	0.410	0.043	1	0.836	1.089
Distance to the health facility	0.335	0.690	0.236	1	0.627	1.398
Time to reach the health facility			0.621	5	0.987	
<1 hour	−19.943	40192.447	0.000	1	1.000	0.000
1 hour	−19.559	40192.447	0.000	1	1.000	0.000
2 hours	0.323	41055.205	0.000	1	1.000	1.381
3 hours	−0.150	44484.997	0.000	1	1.000	0.861
4 hours	−0.933	56841.073	0.000	1	1.000	0.394
Parity category	0.608	1.029	0.349	1	0.555	1.837
Gravidity category	−1.134	0.970	1.368	1	0.242	0.322
Gestational age status	0.019	0.030	0.426	1	0.514	1.020
Constant	38.397	56841.426	0.000	1	0.999	47380778120021792.000

Table 5: *Predictors of ANC use.*

Discussion

The study discovered that education level and occupation had a statistically significant relationship with ANC utilization. Pregnant women with higher levels of education (secondary and tertiary) were more likely to use ANC services than those with lower levels of education (primary education). This result is consistent with previous research [14-16]. Research suggests that educated women are more aware of health issues, have better access to healthcare facilities, and use information more effectively than less educated women. However, there are studies with contrasting findings, indicating that women with lower levels of education typically know less about ANC services and have more barriers to accessing them, also some studies have reported that pregnant women have a high level of knowledge about ANC but still exhibit low utilization rates [4,17,18]. This implies that the relationship between education and occupation on ANC utilization may differ depending on the context and population under study.

The study found a statistically significant relationship between knowledge and ANC utilization. Pregnant Women who are well-informed on the value and advantages of ANC are more likely to make wise choices about their health. This knowledge gives them the confidence to look for and make use of ANC services to protect their unborn child's health as well as their own. This result is consistent with another research [17,19,20]. However, there are studies with contrasting findings pregnant women have a high level of knowledge about ANC but still exhibit low utilization rates these barriers can include financial constraints, lack of transportation, and long distances to healthcare facilities [21-24]. This discrepancy highlights that knowledge alone may not be sufficient to drive behavior change.

The study's findings indicate a statistically significant relationship between attitude towards Antenatal Care (ANC) and its utilization, underscoring the importance of consistency in healthcare behavior. When individuals hold positive attitudes towards ANC, they are more likely to utilize the services consistently throughout their pregnancy. This finding supports other studies that have emphasized the importance of a positive attitude in promoting healthcare-seeking behavior [25,26]. A positive attitude toward ANC may reduce fear and anxiety, leading to increased utilization of ANC services. However, there are studies with contrasting results [22,27]. In other research,

individuals may have a good attitude toward ANC but face difficulties that prevent them from using it consistently. Financial constraints, a lack of transportation, cultural or societal standards, and fear or mistrust of healthcare practitioners are all possible hurdles. This implies that the relationship between attitude and ANC utilization is not universal and can be influenced by a variety of contextual factors.

The binary regression analysis revealed that residence (urban/rural) and marital status were significant predictors of ANC utilization. Urban areas typically offer better access to healthcare facilities, including more available ANC services, healthcare professionals, and resources such as health education. This improved accessibility leads to higher utilization rates among pregnant women living in urban while Married women often have higher ANC utilization rates due to social and economic support from their spouses. This finding agrees with several studies [4,22,27]. Moreover, in contrast [28,29] fewer healthcare facilities, longer travel distances, and inadequate healthcare resources can overshadow the impact of domicile and marital status.

Economic constraints, cultural traditions, and a lack of mobility may be more important in these. This suggests that the predictors of ANC utilization may differ across populations and settings.

Conclusion

This study demonstrated that women's knowledge, attitudes, occupation, and education status are significantly associated with their ANC use. In addition, marital status and residence are significant predictors of ANC use. Further research should continue to investigate these relationships across a variety of populations to inform targeted interventions and improve maternal and neonatal health outcomes.

The present findings suggest that policy initiatives should target rural areas to bridge the urban-rural gap in ANC use through improved healthcare accessibility. Furthermore, healthcare providers should engage in community outreach programs to educate women about the benefits of ANC services. Finally, it is necessary to create user-friendly educational materials and resources about ANC that are accessible in the local language to ensure broad awareness and understanding of these services.

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Conflict of Interest

The authors declare no competing interests.

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