

Perceived and Real Costs of Antenatal Care Seeking and their Implications For Women's Access to Intermittent Preventive Treatment of Malaria in Pregnancy in Rural Tanzanian Districts

Godfrey Martin Mubyazi^{1*}

¹National Institute for Medical Research (NIMR) Headquarters, Tanzania

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*Corresponding author

Godfrey Martin Mubyazi, National Institute for Medical Research (NIMR) Headquarters, Tanzania, Fax: +255-22-2121360; Email (s): gmmubyazi@yahoo.co.uk; gmmubyazi@gmail.com

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Abstract

Background: Debate about the influence of costs of seeking Antenatal Care (ANC) on the maternal health service utilization in Africa has remained controversial and generally inconclusive, calling for more systematic, robust and reliable evidence. A study was done to assess the influence of real and perceived costs of ANC seeking on pregnant women's access to Intermittent Preventive Treatment in Pregnancy (IPTp) against malaria in two rural districts in Tanzania.

Methods: Exist interviews were administered to 823 pregnant women leaving ANC clinics, among which 417 and 406 came from Mkuranga and Mufindi districts, respectively. Data analysis was executed using STATA 8 statistical software.

Result: Of all interviewees, 66.2% and 89.3% of respondents in Mkuranga and Mufindi, respectively, previously contacted government clinics during their current pregnancies; less than 20% and 15% of these districts, respectively, had contacted private clinics. Respondents reporting to have paid user-fees on the study day accounted for 36.7% and 7.0% in both districts, respectively. Few (<2%) of the respondents in each district reported unofficial payments asked of them by clinic staff for the services sought. In both districts, long travel distance was identified as the main disappointing factor against ANC seeks, followed by health care user-fees. Apparently, perceived low quality of care at particular clinics had more influenced the respondents found in public clinics to visit private clinics than it had influenced those found at private clinics to contact public ones. Respondents from wealthier families and those with decision-making autonomy for spending family income were less likely to have faced user-fee payment hardship than those without such opportunities. Lack of money for user-fees or transport delayed 12.6% and 12.4% of the respondents in Mkuranga and Mufindi, respectively to register for the ANC and receive IPTp during the recommended period.

Conclusion: Evidently, real and perceived costs together with perceived quality of care influence rural women to seek ANC and determine their chance to access malaria IPTp in Tanzania.

Background

Timely delivery and utilization of appropriate health care services is important as emphasized by the World Health Organization (WHO). One of the services recommended for women against in their fight against Malaria in Pregnancy (MiP) is an intermittent preventive/presumptive treatment during pregnancy (IPTp). The drug recommended in this case is Sulfadoxine-Pyrimethamine (SP). The guideline suggests a systematic administration of IPTp-SP at the recognized Antenatal Care (ANC) clinics and this should be done by health care staff working at such clinics. It is insisted that the staff IPTp administering to every eligible woman should adhere to the Directly Observed Therapy (DOT) strategy in order to ensure compliance in the uptake of the recommended dose [1]. The IPTp-SP intervention strategy for MiP officially began at the beginning of the last decade in most countries of Sub-Saharan Africa (SSA) where malaria has continued to be highly endemic. While SP remains a drug of choice for IPTp, the guideline is given by the WHO specifies a standard dose to be administered to every eligible pregnant woman attending the ANC clinic in the recommended period at specified interval of one month between one dose and another. Although emphasis is put on two doses, the guideline makes it clear that administering three or four doses is possible depending on the time the client booked at the clinic and whether she continues attending the clinic by complying with the recommended visits. The first dose of SP for IPTp (abbreviated as IPTp-1) is supposed to be administered immediately after quickening, and this is the period starting from the 16th week of pregnancy [2,3]. However, field experience has shown that generally less than half (<50%) of the ANC clinic attendees eligible for IPTp in SSA countries manage to receive two doses. One of the reasons for this is the actual or perceived costs of seeking and accessing ANC perceived quality of care delivered at the Health Care Facilities (HFs) where the ANC services are delivered. The

cost of seeking care mainly is reported to include the inconvenience faced when one has to travel long distances to and from the HF/clinic of interest as those who do not have money for transport are forced to walk a long ways leave, hence spending time on their go and return trips, leave alone the additional financial costs they might be obliged or compelled to incur while on the way or at the HF as well as other psychosocial barriers as detailed in the summary below.

A great deal of evidence indicates that a considerable number of pregnant women hesitating to visit clinics mainly relate to the shortage of the desired services and other facilities at such clinics in developing countries. The specific elements of the service mainly valued by the target health service clients include availability of essential medicines, space for the clients to settle while waiting for the services, supportive conditions of places to relieve oneself such as lavatories/latrines and washing facilities, laboratory diagnostic services, and immediate and courteous attention from Health Workers (HWs). Absence or shortage of any of these services has a negative effect on health service utilization by the target clients. For instance, long waiting time at the HF for service associated with or actually resulting from health caregivers' laxity at work or understaffing levels at the facility that makes it difficult for the few available staff to attend all the clients immediately, combined with impoliteness of HWs who may be using discouraging languages to the clients they attend or not handling the patients will contribute making the clients feel uncomfortable or disappointed to attend particular clinics. Moreover, the actual or perceived implementation of user-fees for the services, especially those expected to be officially recommended as free services contributes discouraging a considerable number of target clients to contact HFs [4-7].

As evidence and discussions on the health care cost impact on health care service use remains, the issue of costs of seeking and accessing care has remained one of the priority topics in research and policy communities. Various analysts, especially those with economics background or orientation have been looking at the issue of cost of care in two categorical dimensions or perspectives, namely direct costs and indirect costs. For an outpatient, direct costs of care are counted in situations whereby the client has to pay money out-of-pocket for the service and these include payment of official user-fees such as money paid for medical consultation (if any), lab diagnostic services, patient registration card, and prescribed medicines. Unofficial payments occasionally asked by dishonest workers as bribery from the patients on the ground by providing them with preferential services could be part of direct or indirect cost depending on the interpretation made about it, but seems to be more direct so long as one pays money directly out of pocket to access the service. Other costs are associated with payment for boarding, motor vehicles during a one way or round trip (to and return) from contacting the service provider and any other form of expenditures made during travelling, for example, procuring drinks or something to eat while waiting for service at the HF may also be part of the direct costs of seeking care [8,9]. Indirect costs are equally important to influence a person's decision to visit or not visit a health care provider. Economists look at the indirect costs, mainly from the angle of the time for production that is lost by the decision or action made by an individual to take an alternative course of action, other than participating directly in economic activities either of income generation nature or other purposes such as food production for domestic uses. This may include the time lost by the

client or a client-caretaker/escort while visiting a service provider. In addition, the time lost and sometimes the money spent on travel to and from seeking the care as well as the money spent for buying such things as food or beverages for drinking while waiting for service at the HF are another category of indirect cost important to influence target service users' decision to seek or not seek the care [6,10].

Tanzania officially began to implement the IPTp strategy in 2001. This strategy has since then been integrated as one of the essential elements of the national focused ANC program strategy. This strategy has a guideline that adheres to WHO's protocol for delivering malaria IPTp, family planning, services for Sexually Transmitted Infections (STIs), and other ANC services in favor of pregnant women attending reproductive and child health (including ANC) clinics [11]. Since IPTp-SP strategy's official introduction of the national health care system, questions have continued to be raised regarding the ability of HWs and pregnant women to comply with the guideline for IPTp administration. One of the key research and policy concerns in relation to IPTp's implementation feasibility in terms of HWs' ability to deliver the optimal service and its effectiveness in terms of users' ability take the recommended doses has remained to be whether or not the costs of service provision and consumption are affordable. Therefore, the prevailing debate has been whether IPTp is affordable to target users in the presence of cost related barriers and this includes whether the costs are real, speculated or perceived [5,6,8]. The IPTp-SP's strategy was officially introduced with the initial aim of covering all pregnant women attending ANC the clinic with at least two doses. The first national IPTp guideline recommended IPTp-1 to be administered to the eligible ANC client between the 20th and 24th weeks of gestational age of her pregnancy. The second dose (IPTp-2) was recommended to be taken in the period falling between the 28th and 32nd weeks. The same guideline recommended voluntary counseling for laboratory screening/test for STIs including syphilis and HIV to each client that would be followed by a post-screening/test counseling and provision of Antiretroviral Therapies (ART) to all those found HIV infected. Other services insisted include the taking of blood smear for checking malaria parasites, examining stool where necessary, and testing urine albumen and that these services should be made available and accessible for all the clients at the existing HFs using the HWs available [11]. For this to be possible, the authorized/accredited HF for delivering ANC services are supposed to have an optimum number of HWs, sufficient amounts of essential supplies and medical equipment at each HF, although the actual use of such services would depend on the timing of pregnant women to visit the HF/clinic and follow the scheduled visits, as well as the skills, passion and motivation of frontline HWs. In conditions whereby the HF is understaffed, one would expect the time taken to deliver the recommended services to be longer than expected by patients/clients and this has negative implications for the clients' decision to revisit the facility in the future [5-9].

Concern about the possibility that IPTp accessibility and uptake by pregnant women in Tanzania might be constrained by demand and supply determinants is based on history and experience. History shows that since independence up to around mid-1990s, basic health services in government (public) HFs in Tanzania were delivered to all citizens free of user-charges. This was done so irrespective of one's income and social status. In 1993, the government officially announced the national cost-sharing policy for the services that were

previously delivered for free in public HF. However, the national guideline in cost-sharing policy implementation retained the emphasis on free delivery of primary ANC and other Maternal and Child Health (MCH) service delivery in public HF [12-14]. Even in private HF, the guideline recommended the basic ANC services to be provided free of charge to all the clients so long as the government could top up the private care providers with some subventions if their contribution to deliver such services to eligible clients was recognized [9]. In principle, the government has not restricted people to seek care from private providers as it recognizes and respects the freedom people have when it comes to choosing a health care provider. The government recognizes and admits that there are situations whereby public/government HF are located far away from where some people live, hence causing inconvenience to those having to walk long distances or pay money for transport in order to reach such HF. For those living closer to the latter kind of facilities, and in recognition of the fact that the number of people living in conditions of financial poverty is still high, the government has continued encouraging the community members to opt for contacting public HF on the ground that the services delivered at such facilities are either for free or cheaper as compared to those delivered at the majority of private HF. Otherwise, option to visit a private care provider might be regrettable if the client comes to face the inconvenience related to one being required to pay user charges for the services needed [15]. However, experience demonstrates that in some situations private providers have been attracting public members who visit them for services more than public care providers could do. On one hand, the main reason for this attraction is that the public expresses trust in private care providers as they find or perceive them to deliver the services with better quality than those delivered by public HF [16-18]. On the other hand, some of the services, proclaimed to be delivered and accessed for free as per the government's recommendation in HF are occasionally found being delivered with some charges to the client(s), and such charges being either official as per the existing cost-sharing policy or unofficial as some mistrustful HWs ask bribes or forced financial presents from the clients. These forms of payments are what is referred to in literature as payments under-the-table [14].

In cognizance of the above anecdotal and empirical evidence documented in the literature reporting actual or suspected existence of cost related barriers to ANC seeking eventually undermining the target for delivering and up taking IPTp-SP doses, a study was conceived and then conducted to establish the experiences and perceptions of pregnant women in relation to costs of seeking ANC in general and specifically on ultimate access to IPTp-SP in two districts located in different regions in Tanzania [9].

Methodology

Study Design, Population and Areas

The design of the main study from which data shown and discussed in the present paper were taken was cross-sectional in nature, having adopted a survey conducted in Mkuranga and Mufindi districts. The study's broad objective was to collect, analyse and report evidence from the two districts as representative cases that would shed light on the economic and other contextual determinants of acceptability and practicability of IPTp-SP against malaria during pregnancy for the women attending ANC clinics in rural Tanzania [19]. After the pilot surveys in some peripheral parts of Dar es Salaam

region that shown several characteristics resembling those typically found in rural district settings between November 2005 and January 2006, the actual survey for the main study was undertaken between March 2006 and February 2007 in two districts, each identified from a different region in Tanzania. The two districts were Mkuranga from Coast (Pwani) region and Mufindi from Iringa (but now Njombe) region. Nevertheless, the data reported in the present paper were gathered between March and October 2006 as the remaining period (November 2006 – February 2007) covered collection of the data aimed to show the pattern of ANC attendances and coverage of IPTp-1 and IPTp-2 doses [20]. Selection of the two districts was based on their location in two regions, far apart from each other, with some social-cultural differences and differences in climatic and economic conditions as the main criterion. The sub-criteria considered relate to the following: (i) their differences in malaria transmission intensities whereby Mkuranga is characterized to face a stable and the perennial malaria transmission intensity while Mufindi faces an unstable and seasonal malaria transmission; (ii) their predominant rural nature, with the majority of their residents engaging themselves in small-scale farming as the main occupation and means of earning a living. The slightly or largely differently demographic characteristics, including distribution of main ethnic groups, and literacy rates, as well as their differences in terms of distribution of HF owned by private and public authorities, have also been considered, as documented elsewhere [9,20].

Sampling Methods

Health facilities with ANC clinics: In each district, a list of HF was obtained from the office of the District Medical Office (DMO). Using this list, the study team identified different levels of HF, to include dispensaries, Health Centres (HCs), and hospitals. The initial plan was to select at least a third of all dispensaries in each district, and this made 10 dispensaries per district, mixing public and private ones. Some of the HF was identified by employing a simple random sampling method and this was possible if the list showed a sufficient category and the number of HF to allow random selection. The rest of the HF were selected through a convenience sampling method and this happened if the number of the HF listed was too small, for instance, in the case of HCs as there was only three HCs in Mkuranga where only 2 were fully functional. In the case of hospitals in both districts, also there was only 1 available in Mkuranga and only 2 available in Mufindi. In the latter district, one of the hospitals was private and this along with only one district public hospital (Mafinga) was automatically selected for inclusion in the study. There were 5 HCs out of which 3 were randomly selected to come up with 1 faith-based HCs and 2 public HCs in the latter district. As for the dispensaries, a total of 10 were covered in each district. Of the covered dispensaries in Mkuranga, 5 were public and the rest 5 were private (2 faith-based, 3 private-commercial). In Mufindi, the 10 dispensaries covered included 5 owned by the public and 5 were private of which 2 were faith-based and 3 were public. One of the hospitals and one dispensary in the latter district were private, owned by a Tea Company. In total, 28 HF were covered from both districts [9,20].

ANC clients: Likewise, identification of the individual pregnant women at the identified ANC clinics was done through either a simple random sampling strategy or a convenient sampling one depending on the number/rate of such women's ANC clinic

attendance at a specific study day. The Decision to adopt a particular sampling selection method was informed by the experience gained by the present study team during the study pilot stage/phase whereby the study instruments were being tested for their use in the main study. The initial number of interviewers per district estimated using a statistical formula was 415. But, practically this came to be impossible in the field due to uneven distribution of HFs. Until last date of the data collection session, 406 and 417 clients in Mufindi and Mkuranga districts, respectively, were covered. As reported repeatedly in the results section, the answers to specific questions as appearing on the questionnaire varied more or less depending on how the respondents understood the questions which depended on the competence of the interviewer/enumerator and how the respondents were prepared/ready to answer such questions. Several questions on the questionnaires that appeared to be poorly/wrongly filled in were eventually abandoned either at the data entry or analysis stage so long as they were found not to provide useful output. That is why the ultimate computation of the frequencies of the responses to specific questions showed variations that could not be controlled or avoided as shown under the results section. That is, in some instances, the total sample actually covered seems less than total originally estimated to be covered per district [9].

Data Collection Approaches

As documented elsewhere [9], data gathering was involved exist interviews using a questionnaire with the every woman leaving the clinic among those identified through a random sampling strategy detailed above. The questionnaire included a combination of closed and open-ended questions and was interviewer-administered. Initially the questions were designed in English language, but were translated later into Kiswahili for easy use by the enumerators and for the study participants to understand. Among the main issues investigated include the self-reporting of individual interviewees' experiences with, and perceptions of the costs associated with ANC seeking at either at the specific HFs where they were found during the present study survey days or at other HF located elsewhere in each district. The aim was to categorize or identify direct costs and indirect costs of seeking care. However, the interviewees were asked a set of questions without subjecting them to categorize the costs as this was left to the data analysts at the end of data collection and entry. Direct cost elements of interest were related to official user-fees for ANC services if paid by the clients on such elements of care as drugs (including the SP designated for IPTp purposes) and antipyretics such as panadol, paracetamol and aspirin, as well as laboratory services such as screening for malaria, HIV, other STIs, urine and any other pathogens. Other elements include the cost of ANC card or exercise books patients had to have for recording their personal and ANC attendance information. Indirect cost elements considered include unofficial claims for money by the dishonest health service givers or any other frontline HWs (e.g. receptionists) claimed from their clients with promise to giving them the favour or preferential attention when attending them, especially when the number of clients visiting the clinic on specific dates/days was too high to allow every client leave back home early and when there seemed shortages in medicines at the HF level on particular days. The feedback obtained by asking clients during the tools pilot survey days helped to inform the researchers on this. Another indirect cost considerations were related to the waiting time for ANC services, and money spent on buying something to eat

(e.g. lunch or breakfast bites) or something to drink while waiting for the service at the clinics. Additionally, interviewees were pleased to express themselves about how they perceived the influence of real or suspected costs of seeking ANC on women's attendances and ultimate use of IPTp-SP for malaria based on their own experiences. In connection to this question, the respondents had to specify what prompted them to visit a particular clinic at which they were found and interviewed under this study instead of contacting other clinics; whether they were comfortable with the distance between the places where they were residing (place of living) and the nearest ANC clinic; the perceived or actual effect of traveling whatever distance found on the ANC seeking behavior of themselves or of other pregnant women; existence and affordability of user-fees during one's current pregnancy; how often has they ever failed to afford paying fees during their current pregnancies; their knowledge on and perception of government user-fee exemption policy in relation to ANC services; and finally reasons for late registration at the clinic by the women who could not attend clinic and receive the service during their pregnancy for better health outcomes.

To be able to calculate/determine the actual travel distance reported by the respondents, the interviewees were asked to state the name of the villages from where they had come on a particular study day. This name was then recorded on the questionnaire and later on the frontline HWs who were found at the respective clinics or the district level officers such as district Reproductive And Child Health Coordinators (RCHCo) and District Cold Chain Coordinators (DCCOs) were consulted for help in an attempt to know the actual distance in terms of kilometres from the villages to the HFs mentioned by the clients. This approach was found to be the most reliable instead of relying on reports from the respondents [10]. Moreover, each respondent's ANC card was observed to confirm the time they were first registered at the clinic for the first time they had visited such clinics during their current pregnancies so that identification of those who delayed could be made. In the present study case, it was regarded that any client registering at the clinic later than the national officially recommended period of receiving IPTp-1 (i.e. 20th-24th weeks of pregnancy gestational age) as specified above had booked late. This was done while knowing that the official definition of late booking as noted by other authors is that late booking refers to the situation whereby the client, initiate the visit to an ANC clinic later than the first four weeks of pregnancy's gestational age [21,22].

At the end of each of data collection day, the Principal Investigator (PI) met with the data gathering research for debriefing of the data collection process and field experiences, reviewing the data collected by each person in an attempt to check for accuracy, consistence and relevance and making the necessary corrections, and then agreeing on how to improve the data gathering process on the following days during the fieldwork.

Data Management and Analysis

The reviewed data after collection were assigned to one data entry clerk hired for this purpose and then the PI entered the same data to ensure double entry and to allow for comparisons and validation of the data entered through checking for errors made by each entrant. Data entry was done using EPI-data 6.1 program. Some of the brief notes taken from the open-ended questions used to supplement the questions with pre-coded answers (close-ended questions) on the

questionnaire were also coded where necessary to allow easy entry and later on tabulations in order to obtain statistical results. Multiple answers/responses, especially to some of the open-ended questions were allowed, for example, those requiring the client to state what they know about health service costs, quality and national policy or reasons for attending or avoiding to attend particular clinics. Both data cleaning and analysis were performed with the aid of Stata version 8 software (STATA Corporation Inc., Texas, and USA). As mentioned above, the answers obtained varied among the questions, by districts and types of HFs as indicated/shown under the results section below, whereby the sub-sample number of respondents/responses and their corresponding frequencies vary for the different questions posed. After noting these variations during a pilot survey to test the research instruments, it was found more realistic to compute the frequencies of responses/answers for each individual question by taking the number of answers/responses to a given question as the numerator while the total number of the individuals who responded to that particular question being the denominator. Only in a few cases was the overall sample number of the interviewees in both districts taken to be the denominator.

Most of the questions aimed to extract descriptive statistics were designed with categorical answers that were coded in advance and appearing on the questionnaire used for data gathering. Testing if there were significant statistical differences between the categorical answer variables of interest was performed. This involved the use of either a Pearson's chi-square (χ^2) test for sample data if the number of respondents/responses reached 30 or above and a Fisher's Exact test for samples below thirty (<30). The Student's t-test was performed for some continuous data while Logistic Regression Analysis (LRA) were employed to establish the effect of selected independent (predictor) variables on selected dependent (outcome) variables.

The LRA approach started with the carrying out of Univariable (Bivariate) Analysis (UVA) before moving on to a Multivariable Analysis (MVA). The reason for employing both levels of analysis was based on the analyst's attempt to get a picture of the output from each level of analysis since bivariate analysis may also be meaningful depending on the way the data is interpreted to answer the study objective(s) at hand. This approach was adopted in cognizance that statisticians and econometricians recommend use of results from MVA that are more preferred to results based on UVA because of certain limitations. Therefore, the decision to look at both UVA and MVA results was made in order to learn and compare the effect of some individual explanatory variables over a given outcome variable first of all when fitting such variables in a UVA model and when the same explanatory variable was fitted together with other variables in the MVA model to determine their combined effect over the same outcome variable as one used in a UVA. However, in the MVA case, all the identified predictor variables were fitted in the model at the same time without regard whether each of them had indicated some levels of significance based on their indicative p-values observed from the UVA. These methodological steps are allowed so long as they were found to meet the interests or intentions of the analyst, particularly the PI [23].

The outcome variable was defined based on the following study question as appearing on the questionnaire: (i) *Have you ever faced any hardship in paying user-fees at this clinic during your current pregnancy?* This question was designed with dichotomous answer

options as the respondent was required to say Yes (Y) that was assigned code 1 or a No (N) that was assigned code 0. Thus, dummy variables were defined and coded accordingly, depending on the nature of the question posed, and were dichotomized by assigning them a 1 or 0 code. In all cases and as per the procedure, code 1 represented the variable of interest while code 0 represented a reference variable when it came to the interpretation of the results obtained after analysis in comparison.

Payment difficulties were defined by considering a condition whereby the respective respondent reported to have either ever failed totally to afford paying the required fees for the service in question or to have been forced to pay unwillingly while attending ANC clinic. The demographic, household and several socio-economic characteristics of the respondents were also looked at in order to provide a good ground for interpreting the results given by those who testified to have faced or not face user-fee payment hardship while attending the clinic for an ANC. For instance, number of pregnancies or births the respondent has ever had in her lifetime, until the time she came to be interviewed under the present study, and this is what is referred to in this paper as, 'gravidity frequency'. Other characteristics considered were related to one's marital status, age, cash money income earned in the past one month, nature of household in which the respondent was living during the present study period (i.e. whether modern or traditional and whether the family was owning some wealthy property indicating one being in the position of having been holding cash money and these include such materials as vehicles for transport as well as performing other possible income generating activities of business nature). Another consideration was gender relations in the family or within the respondent's households (referred to as intra-household decision-making power) between women and men. However, each of these variables was examined in isolation rather than in combination form as normally applied in Principal Component Analyses (PCA), but this was not performed after the database with the original data was lost when the computer saving the data crashed. The shortcoming of not carrying out a PCA and suggested way-forward for this case has been discussed at the end in the present paper. It was decided to select a few variables seeming to have a likely close relationship with (or those seeming to have a possible influence on) the individual ANC clients' decision to attend clinic or use certain ANC services based on their ability to pay for such things as transport to and from the clinic and/or user-fees at the HF level (Tables 1 & 3).

In the question regarding reasons for having contacted the present study clinic, the possible predictor variables identified include the perception of the respondents about (i) travel distance from home to the clinic; (ii) government cost-sharing policy including policy specifications user-fee exemptions to vulnerable groups for basic MCH services sought at public or private HFs in comparison with the real world situation including the presence of absence of practices by service providers of user fees; and (iii) quality of care at the HFs delivering ANC services. Inclusion of the quality of care as a study variable was informed by the evidence that normally health care target users tend to weigh-out the financial costs incurred when seeking care and time lost while seeking care on one hand, meanwhile thinking about the specific elements of services that define the quality of the care from their own point of view. These are key considerations they make for them to decide whether or not to visit a health care provider [10,24,25].

All monetary costs in the present study were recorded in Tanzanian shillings (Tsh) at the data collection stage and later on were converted into US dollars (US\$) at the ruling official average exchange rate of US\$1 = Tsh. 1,200. A similar analytical approach for LRA as the one presented in this paper has been adopted based on data gathered from frontline HWs interviewed in the same study as reported elsewhere [26].

Ethical Considerations

The study received national ethical clearance and was issued a certificate with reference No. NIMR/HQ/R.8a/Vol. IX/400 from the Medical Research Coordinating Committee (MRCC). The latter is a national medical research ethics granting body under the Ministry of Health and Social Welfare (MoHSW), the Secretariat of which is hosted by the National Institute for Medical Research (NIMR). Informed and written consent to participate in the study by all participants was sought using a special guide after receiving approval for conducting the study in the districts from the regional, district and lower level central and local government authorities. Of all interviewees approached, 31 declined participation in the study for various reasons. The Majority of them claimed to be in haste, having to rush back home to attend an important cooking and other domestic commitments after having stayed at the clinic for a long time; their decision was final and was respected by the study team [9].

Results

Demographic and Socio-Economic Characteristics of the Respondents

Of the 821 respondents from both districts, 71.9% (n=590) were found in the government clinics, 17.4% (n=143) at faith-based clinics, 8.7% (n=71) at commercial (private-for-profit) clinics whereas 2.1% (n=17) at the Tea Company clinic. Most of the interviewees were married and family women. Of all the 417 women interviewed in Mkuranga district, 344 (82.5%) reported to be married, 44 (10.6%) were single whereas the rest (6.9%, n=29) included cohabiters, separated and widows. Of the 406 women interviewed in Mufindi, 359 (88.4%) were married, 43 (10.6%) were single whereas only 4 (1%) included cohabiters, separated and widows.

Generally, the respondents came from poor households that earned less than US\$1 per day on average. In this case, it was found that 63.3% (n=264) and 62.6% (n=256) of the respondents found in Mkuranga and Mufindi, respectively, had not earned any cash money within one month preceding the day they were traced for interview in the present study. The mean monthly income of the respondents to the question about their monthly cash income as reported by only 153 interviewees in Mkuranga amounted to Tanzanian shillings (Tsh.) 15,753.3 which under the exchange rate of the day by then accounted to US\$ 13.1. In Mufindi, the mean monthly income reported by only 151 respondents was Tsh. 26,780.1 shillings (US\$ 22.3). Comparing the two districts, the observed difference in the mean income was found to be statistically significant, with a lower level in Mkuranga than in Mufindi ($t=-4.125$; $p<0.001$).

The Majority of the respondents in both districts reported small-scale farming as their chief occupation and major source of earning a living. These accounting for 72.84% (n=303) and (n=340 84.2%) in Mkuranga and Mufindi districts, respectively. Formal sector

employees among whom were public (civil) sector servants were found to be 13.7% (n=57) and 1.9% (n=8) in Mkuranga and Mufindi, respectively; retail business employed 12.5% (n=52) and 5.7% (n=23) in these districts, respectively. The rest of the respondents in both districts reported to be jobless, although it was unclear to separate these from those engaged in farming.

The question of one's current age was answered by only 407 and 402 interviewees in Mkuranga and Mufindi, respectively. In Mkuranga, 72.1% (n=294) were as old as 20 years or above while the rest were below 20 years, range being 15-46 years. In Mufindi, 88.8% (n=357) were aged 20 years or above, the rest being below 20 years; the range being 15-47 years. The mean age was significantly higher in Mufindi than in Mkuranga ($t=2.6475$; $p=0.0083$).

The mean family size as calculated from the answers given by 807 respondents from both districts was 4. In Mkuranga, 53.9% (n=225) of the respondents were coming from households with at most four people while the rest was coming from large sized families. In Mufindi, 47.0% (n=190) of the respondents were coming from small sized families, the rest from large sized ones. The observed difference was statistically significant ($\chi^2(1)=3.9$; $p=0.047$), indicating family sizes in Mkuranga to have been larger than those in Mufindi.

Currently living in a house roofed with corrugated aluminum sheets or tiles was affirmed by 32.9% (n=137) and 50.6% (n=202) of the respondents in Mkuranga and Mufindi, respectively, and the difference observed found to be statistically significant ($p=0.001$). Meanwhile, coming from a family, keeping and selling poultry as a source of cash income for urgent expenditures in the family was affirmed by 16.6% (n=69) and 42.9% (n=173) of the respondents in these districts, respectively, and the difference found to be statistically significant ($p<0.001$). The differences between the two study districts with respect to each of the identified elements or characteristics are as shown in Table 1 below that also summarizes the statistical results indicating a few other key variables.

Choice of an ANC clinic and reasons for the choices

A larger number of respondents in both districts confirmed to have visited government clinics than those visiting non-government (i.e. Private) ones during their current pregnancies. Statistically, this care seeking practice was found to be significantly higher in Mufindi where 89.3% (n=360) of the respondents reported so than 66.2% (n=276) of their counterparts reporting the same in Mkuranga ($p<0.001$). More reports about the experience of one having visited

Table 1: Selected demographic characteristics of the study respondents indicating their socio-economic statuses based on inter-district comparisons using Chi-square tests.

	Mkuranga	Mufindi	P-value
	n (%)	n (%)	
1. Family size (1 =small i.e. £ 4 people)	225 (53.9%)	190 (47.0%)	0.047
2. Cash earned one month prior to this study interview (1=if income ≥30,000 shillings)	51 (33.3%)	80 (52.9%)	<0.001
3. Age of respondent (1=Age<20 years)	114 (27.9%)	45 (11.2%)	0.0083
4. Marital status (1=married/cohabiting)	363 (87.1%)	364 (90.5%)	0.103
5. Home house roofed with Aluminum/tiles (1=Yes)	137 (32.9%)	202 (50.6%)	<0.001
6. Home family engaged in poultry keeping and selling business (1=Yes)	69 (16.6%)	173 (42.9%)	<0.001

a private-for-profit (commercial) or faith-based clinic was obtained. Of the reporters in this case, 23% (n=97) came from Mkuranga and 4.7% (n=19) came from Mufindi, the observed difference being highly significant (p<0.001). Those reporting to have visited faith-based clinics accounted for 29.9% (n=116) and 13.7% (n=55) in Mkuranga and Mufindi, respectively. The observed difference in the latter case was also highly significant (p<0.001). In Mufindi, 8.7% (n=34) respondents reported to have contacted the Tea Company's clinics that were private, but mainly used by the company's employees and their close relatives, such as family members although community members around were also allowed to make use of them. These types of clinics did not exist in Mkuranga where there was neither any factory nor large plantation run either by the government or a private corporation. Meanwhile, there were respondents in both districts who could not recognize whether the HFs they had visited were public or private in nature.

In the first general question 'Why have you decided to visit this clinic?' (i.e. where one was found and then interviewed), 70.2% (n=292) in Mkuranga straightway identified short travel distance as the main motivating factor. In the same district, 2.3% (n=32) respondents stated to have postponed or delayed attending clinic due to transport problems, including, lack of money for paying the fare that could force one to walk long distances to and from seeking the care needed. In Mufindi, the closeness of the clinic being the main motivating factor was reported by 67.3% (n=270) of the respondents; the rest (2.3%, n=9) claimed to have delayed attending clinic due to transport difficulties. The same category of the respondents from both districts identified other factors influencing them to visit particular clinics where they were found for interview under the present study instead of visiting other clinics. The factors identified related to their perception of the 'availability of health care of better quality than one delivered at the facilities not visited' as well as the knowledge or suspect of the 'availability of health care services delivered for free (i.e. absence of user fees)' at the clinic where one was found and therefore motivating them to avoid visiting other HFs where user fees were being practiced. In Mkuranga, the issue of 'better quality care at the clinic of interview' was explicitly mentioned by 11.3% (n=47) of the interviewees as compared to only 5.8% (n=24) reporting the 'absence of user-fees' as a driving factor for them to visit the respective HFs/clinics. In Mufindi, the presence of 'better quality care' was explicitly mentioned by 5.9% (n=24) of the respondents, but none of the respondents pointed out 'absence of user fees' as the driving factor for them to visit a particular HF/clinic.

In an attempt to investigate deeper and maximize information on the factors prompting women to visit particular clinics instead of visiting other clinics, the above question was transposed or fine-tuned whereby the respondents were asked to state the reasons for not visiting the HFs other than those where they were found during the present study days. Here, the PI's interest was to examine in the comparison the responses obtained from the clients who were found at different types of HFs (private-commercial, public/government and faith-based). Categorically, the final answers obtained from these types of facilities were as follows: From the women found at public HFs these accounted for 145 in Mkuranga and 30 in Mufindi]; at private-for-profit (commercial) HFs (n= 276 in Mkuranga; n=352 in Mufindi); and at faith-based HFs (n=331 in Mkuranga; n=338 in Mufindi). The leading reason stated by the respondents found at each

of these facilities was related to long travel distance from home to the facilities not contacted; and this was followed by other reasons (including an attempt to avoid paying user fees at other facilities or desire to seek better quality care at the current facilities where one was found for interview). For this answer case, the respondents who were found at public and at private-commercial dominated. The condition of existence of user-charges at the other facilities un-visited by the respondents was mentioned only with reference to faith-based clinics and private-commercial clinics (Figure 1).

The 'other reasons' indicated in Figure 1 was found to have had prompted the respondents concerned to avoid visiting other clinics because of what was reported to fall under the following two drivers: (i) the respondents' unawareness of other ANC clinics that were closer or near to, their living/home places and (ii) the respondents having been visiting/using the clinic at which one was found in an interview under the present study for many years throughout all her pregnancy times. A Chi-square test indicated that long travel distance and the existence of user fees for ANC services had significantly hindered the respondents to attend clinics other than those where they were found, although this appears to have been more so in Mkuranga than in Mufindi (p<0.05) (Table 2).

Reports were also obtained in response to the question on whether or not there were pregnant women in the study villages who were delaying to attend the clinic in fear of long walking distances. The

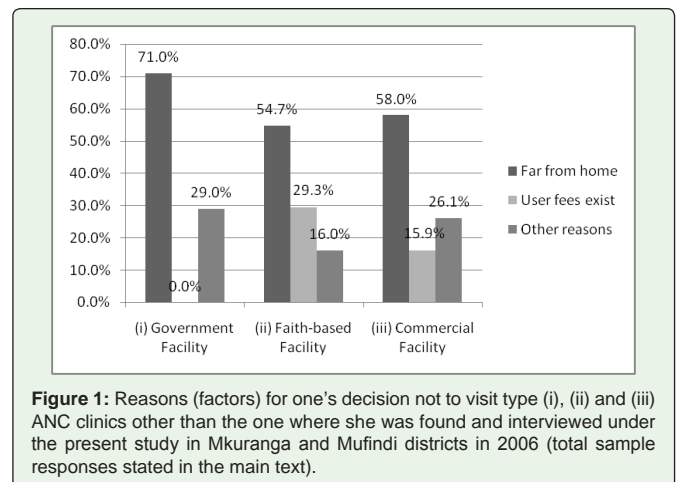


Figure 1: Reasons (factors) for one's decision not to visit type (i), (ii) and (iii) ANC clinics other than the one where she was found and interviewed under the present study in Mkuranga and Mufindi districts in 2006 (total sample responses stated in the main text).

Table 2: Respondents' views/knowledge about what the government policy say in relation to user-fees for ANC services in Tanzania (multiple responses were allowed).

Knowledge related- response given	Mkuranga	Mufindi
	n (408)	n (393)
1. Free services anywhere (govt. private)	83 (20%)	81 (20.6%)
2. Free only at government clinics	58 (14%)	51 (16%)
3. Public free services; don't know elsewhere	43 (11%)	46 (12%)
4. Charge some services anywhere	18 (4%)	28 (7%)
5. Don't know it well, but in practice we pay	24 (6%)	3 (1%)
6. Charge for the services generally anywhere	0 (0%)	29 (7%)
7. Generally, I don't Know	182 (45%)	155 (39%)

'Yes' answer indicating the respondents affirming this to have been so was shown by 30.9% of the respondents in Mkuranga (n=391) and 32.5% of their counterparts in Mufindi (n=357). The respondents to the latter question include those who had traveled seven kilometers or more (≥ 7 km) from home to the clinic where they were found during the present study days.

Means of Transport Used, and Time and Money Spent While Travelling to Seek Antenatal Care

Data showed that overall, 64.5% (n=265) respondents in Mkuranga and 79.3% (n=315) in Mufindi had walked from their home villages to the study clinics for care seeking purpose. More than half of these complained about the time lost in travelling to and from clinics. For those testifying to have paid for transport, the amount paid depended mainly on the means of transport used. Of the respondents in Mkuranga and in Mufindi, 60.8% (n=90) and 38.6% (n=32), respectively, stated to have paid for motor car transport. On average the payment made amounted to Tsh. 129 (approx. US\$ 0.1) in Mkuranga and Tshs. 936 (approx. US\$ 0.8) in Mufindi; the cost of a one-way trip ranging in shillings 200 - 2000 (US\$0.2 -1.7) in both districts. The mean payment for a bicycle hire was Tsh. 233.3 (US\$0.2), ranging between Tsh. 300 shillings and 2000 (US\$ 0.3-1.7) in both districts. These payments were confirmed by the HWs interviewed in the same study [26]. Thus, those who avoided to pay more for a hired bicycle if they held such bicycles for more time than agreed upon by the renter were forced to leave the clinic earlier before receiving some of the health services. Episodes of late contact of clinics due to lack of money for transport were reported by 6.0% (n=25) respondents in Mkuranga and 2.3% (n=9) of their counterparts in Mufindi. Use of a donkey-cart was reported by 2 respondents in Mkuranga and only one in Mufindi. This happened when it was found difficult for the client concerned to walk a long distance, particularly if the client was facing some illness or felt physical exhausted as the pregnancy was aging. However, this category of the care users reported to have not incurred any monetary costs if the donkey-cart used was owned by their own family, and the only main cost concern for this case was that of the productive time lost by postponing farm duties or other businesses while another family member escorted the pregnant mother to the clinic.

Money Spent While Waiting for Service and for Paying User Fees at the Clinic

Overall, 5.4% (n=44) out of all respondents from both districts indicated to have at least bought something to take in order to reduce hunger while waiting for the services at the clinic or while on their way to the clinic. Some of them reported to have also procured exercise books that were being used for personal record keeping in place of missing antenatal cards at the clinic. As reported, it occasionally happened to the clinics run out of stock of such cards, and he was later confirmed by the frontline HWs [26] and district health managers [27]. The average amount of the money spent on exercise books was Tsh. 146.7 (US\$0.1), ranging between Tsh. 20 and Tsh. -600 (US\$0.02-0.5). This was in accordance with the reports from both the ANC clients interviewed that were validated by inter-temporal observation done by the study team in the study field. However, the majority of the interviewees perceived this cost rate to be generally affordable to most of the antenatal clients and not to being an issue in terms of discouraging ANC attendances.

Very few reported to have paid user-fees for ANC services on the study day. Of those reporting to have done so, a significantly higher number of reporters came from Mkuranga (36.7%, n=151) than those coming from Mufindi (7.04%; n=28; $p < 0.001$). Payment for blood smear check for malaria and urine albumin test mainly for urinary tract infections at the study clinic's laboratory were reported by 27.3% (n=112) of the respondents in both districts. Meanwhile, 28 respondents and only 5 of their counterparts in Mkuranga and Mufindi respectively, reported to have experienced user fee payment hardships in the past at the study clinics. Having faced user fee payment hardship before at clinics other than the ones one was found from an interview under the present study was more reported in Mkuranga, as indicated by 12.9% (n=54) and 4.0% (n=16) of the interviewees in Mkuranga and Mufindi districts, respectively. Statistically, this difference was significant ($p < 0.001$). Other respondents, including 20.0% (n=32) and 9.4% (n=5) in Mkuranga and Mufindi, respectively, claimed that the user-fee payments they had made would discourage them to attend the clinic in the future, and the observed difference in this case was statistically significant ($p = 0.078$). Moreover, 5.6% (n=19) respondents in Mufindi reported to have avoided contacting clinics owned by the Mufindi Tea Company (a private company under the Unilever Group of Companies) and the reason given, being that such clinics were imposing fees to the clients who were neither the employees of the company nor family members of the Company's staff.

Knowledge About the User Fee Structure and Possible Influence on Antenatal Visits

Some of the respondents failed to recall or specify the kind of ANC services for which they paid user-fees. Arguments like 'I was told to pay for a needle in order for them to check my blood' meaning an injection syringe used during screening for HIV or a finger prick for taking blood smear (B/S) for confirming malaria or haemoglobin tests were common. The HWs at private clinics confirmed the user-fees practice to exist, as documented elsewhere [26]. However, even some of such HWs could not depict the nature and magnitude of the user-fee structure in relation to IPTp-SP or for treatment of non-severe malaria. A follow up made later by the study team to the in-charges of the user fee system at the respective HFs revealed that one full therapeutic dose of SP (three tablets) was costing between Tshs. 300 and 500 (US\$0.25-0.41); B/S for malaria or stool/urine screening cost Tsh. 200-300 (US\$0.16-0.25); HIV screening cost Tshs. 1200 (US\$1), Venereal disease screening Laboratory (VDRL) for syphilis cost Tshs. 500 (US\$0.41); while pregnancy test (PT) to confirm pregnancy or gestational age cost Tshs. 2000 (US\$1.7). These records were taken at one faith-based dispensary in Mkuranga. Ferrous/folic acid tablets were found to cost Tshs. 100 per dose at one commercial dispensary in the latter district. Save for the PT, the cost of the rest of the services listed above were perceived to be affordable among most of the clients, despite the experience with episodes of some clients occasionally asking for a waiver or exemption having been reported.

Knowledge of the Government Cost Sharing Policy in Relation to ANC Services

Uncommon perceptions were noted to exist among the respondents in both districts with regard to government cost sharing policy. These include, among other things the issue of

user-fee exemption for ANC services (Table 2). Combined data from both districts indicated that 42% (n=337) of the respondents were uninformed of the government's policy in relation to IPTp for malaria. As reported before in the paper published elsewhere [26], some respondents did not know if the exemption policy existed and whether user fees actually existed in practice even at private clinics in relation to IPTp services.

Unofficial payments in the form of bribery asked by some of the frontline HWs from the patients were reported to have been experienced by less than 1% of all respondents in Mkuranga and by only 1.7% of their counterparts in Mufindi. However, it was claimed that some clients would pay between Tshs. 500 and 1000 (US\$ 0.41-0.83) voluntarily (un-forcefully) as a way of persuading the HWs attend them preferentially immediately for early leaving home, and some were also paying that money out of their pockets as a reward to HWs who pleased them in one way or another while delivering the service on particular ANC scheduled days.

Waiting Time for ANC Services at the Clinic

Complaints about long waiting time were expressed throughout in both district cases, albeit individual complaints seemed too small to report herein. The Majority of the answers indicating the time one has spent at the clinic were assumed/guessed by the respondents since, some of the respondents seemed to be inconsistent with the answers or explanations they were given; after all, the majority of the respondents did not possess wristwatches to be used for reference while estimating the time they had arrived and stayed at the facility for the services sought. Regardless of the precision of the answers obtained, the data tested (not shown using Chi-square test indicated clients' dissatisfaction with long waiting times as being more significantly reported in Mkuranga than in Mufindi ($\chi^2(1)=26.8$; $p<0.001$).

ANC Initiation/Booking Time Noted Based on Inter-Temporal Observations on the Clients' Cards

Observations made by the study team on the individual respondents ANC cards/exercise books indicated that 87.4% (n=361) of the clients in Mkuranga and 87.6% (n=346) of their fellows in Mufindi had initiated their ANC visits when they reported their current pregnancies for the first time within the first six months (24 weeks); the rest (12.6% and 12.4% in the latter districts, respectively, had booked later after 6 months. The prime factors for this to delayed ANC visit were reported to relate to the client lacking money either for paying user-fees at the clinic or for transport or for both purposes especially for those living in far villages.

Results From Logistic Regression Analyses

Perceptions Related Determinants

LRA results indicated that the clients who were interviewed at government clinics were: significantly less likely than those found in private clinics to visit a clinic due to reasons relating to one perceiving that the quality of care at the former HFs was much better than at the latter facilities. That is to say that indicatively, the perception that the quality of care at a particular clinic was better to motivate the respondent visit that particular clinic instead of visiting other (public or private) clinics was significantly less likely to be expressed by the

interviewees found at public HFs than those found at private clinics (OR=0.51; 95% CI: 0.32-0.82). When the same variables were fitted in combination at the same time in the model aimed for an MVA, it was observed that the individuals found in government clinics were more likely than their private clinic counterparts to have pinpointed 'the short travel distance' as a leading factor in their choice to contact the clinic concerned (where they were found). Looking at a combination of one's experience with 'access to ANC services for free (i.e. absence of user-fees) and the 'perceived better quality of care' as a factor influencing the individual women approached to contact a particular clinic, a smaller number of affirming answers were obtained. The majority of the respondents affirming so were those found in government clinics as compared to those found in private clinics, the observed difference in this case being statistically significant (OR=0.82; 95% CI: 0.31-0.82).

Influence of Income/Wealth and Intra-Household Decision-Making Power Predictors

UVA performed using combined data from both districts indicated that the respondents coming from the relatively wealthier households were less likely to report personal experience with user-fee payment hardship than those from poorer households (Table 3). Clients from households running a poultry business were significantly less likely to have faced user-fee payment hardship than those not involved in the same business (OR=0.37; 95% CI: 0.19-0.74). The likelihood of reporting experience with user-fee payment difficulty was significantly lower among the primigravidae than multigravidae (OR=0.42; 95% CI: 0.19-0.93). User-fee payment difficulty was more likely to be reported by the respondents from the households/families in which they did not have final decision-making powers when it came to using the household monetary income for spending on basic needs of their personal or household nature (for instance, spending on health) than those from the households where they had such powers. Similarly, respondents indicating to have come from households whereby they had to seek and obtain permission from their husbands/spouses to enable them attend clinic were more likely to report personal experience with user-fee payment hardship than those not having to seek permission. However, in the latter two scenarios, the observed difference was not statistically significant.

The results from an MVA were generally quite similar to those noted in the UVA case. Having faced user-fee payment hardship was more likely to be reported by the respondents from families with the following characteristics: (i) where the woman interviewed possessed the final decision-making power (or do participate in making decisions) when it comes to expenditure of family income on health and other basic needs; (ii) the respondents' who had to seek permission from their male spouses for them to attend the clinic. In each of the two latter cases, however, the observed difference was not statistically significant. Conversely, user-fee payment hardship was significantly less likely to be experienced by (iii) the women who were in their first pregnancy carriage (primigravidae) than those with two or more pregnancy carriages so far (multigravidae) (OR=0.36; 95% CI: 0.16-0.84); and (iv) respondents from poultry keeping and selling households than those from households not engaged such kind of business (OR=0.73; 95% CI: 0.20-0.84).

Table 3: Logistic regression analysis results indicating the relationship between some socioeconomic characteristics of the respondents that were used as explanatory variables and the same respondents' stated experience with user-fee payment difficulties at ANC clinics in Tanzania, based on combined data (N=821) from Mkuranga and Mufindi districts. The outcome variable of interest was defined based on the question – 'Have you ever faced difficulty of paying user fees for ANC services?' Frequencies of responses to the questions posed for each individual socioeconomic variable that have been stated in the main text above have not been indicated in the Table to avoid packing it with too much congested data and making complicated to read.

Socioeconomic characteristic of the respondents who affirmed to have faced payment hardship (Those who said 'Yes')	Univariable Model				Full model (multivariable) Model			
	Unadjusted OR	P-Value	95% CI		Adjusted OR	P-value	95% CI	
1. Small Family Size (1= household contained ≤ 4 people); ref. 0=if household contained ≥ 5 people).	0.69	0.191	0.39	1.21	0.73	0.282	0.4	1.3
2. Gravidity frequency (1=Primigravidæ); (ref. 0=Multigravidæ)	0.42	0.032	0.19	0.93	0.36	0.017	0.16	0.84
3. Marital status (1=Married or cohabiting; ref. 0=unmarried)	0.95	0.896	0.44	2.05	0.72	0.444	0.31	1.66
4. Final decision maker on household income being the husband? (1=Yes; ref. 0=No, myself)	1.21	0.672	0.5	2.92	1.05	0.924	0.43	2.57
5. Have to seek permission to attend ANC clinic? (1=Yes; ref. 0=No)	1.44	0.182	0.84	2.47	1.28	0.378	0.74	2.23
6. Income earned in last one month (1=≥30,000 shillings (US\$25; ref. <30,000 shillings))	0.56	0.16	0.25	1.26	0.69	0.385	0.3	1.58
7. Living in a household having a Bicycle? (1=Yes; ref. 0=No)	0.63	0.061	0.38	1.02	0.73	0.22	0.44	1.21
8. Living in a household doing poultry-business? (1=Yes; ref. 0=No).	0.37	0.005	0.19	0.74	0.41	0.015	0.2	0.84
Correctly predicted					91.50%			

Discussion

Influence of Costs Related to Travel and Waiting Time for Antenatal Services

It is evident from the present study that long travel distance disappoints potential clients of the antenatal services (hence leading to low access to IPTp doses). As a matter of fact, nearly a third of the respondents in both districts lived farther than 5 kilometers from the nearest clinics. Therefore, under normal circumstances the choice of these clients to contact clinics located far away would depend on whether they found the inconvenience of travelling, including the time lost and financial costs incurred outweighing the perceived quality of services at the clinic of their choice. Otherwise, the clients feeling of such an inconvenience might have discouraged them to attend the clinic either at all or regularly. Vast empirical evidence on the demand for health care as documented widely in the econometric literature confirms the influence of a combination of travel distance, user fees and perceived quality of care variables on people's care seeking and utilization behaviors. However, it is argued that the significance of each these variables may vary, depending on the model specifications [10,24]. This conclusion is partly reflected by the present study results obtained from the LRA, particularly when looking at the UVA results separately in comparison with the MVA. Evidence similar to this based on previous studies in Tanzania has been documented elsewhere. For instance, in one study the use of maternal health services was found to be highly sensitive to the official fees, although it was also noted that under certain conditions such fees might not be as important as the travel distance [12] or quality of the health care as perceived by the clients/general population [28]. In another study it was found that the quality of care was more valued by the clients/study population than the travel distance [29]. However, the latter finding was contradicted by another study indicating travel distance associated with time and financial costs as an important often influencing clients' health care seeking behavior [30].

Costs and Quality of Care Related Influences on Clients' Choice of Clinics

From the present study it is noted that proportionately, a larger number of respondents in both districts were found at the public HFs,

a situation which one would expect, since, the number and distribution of the public HFs delivering ANC services in the study was larger than that of private facilities in each district if the sample sizes drawn for the study HFs is looked at. The same picture of the HF distribution is noted for the country as a whole [31]. The Choice to include a balanced number of HFs through a random sampling method could not be possible given this condition. This implies from the present study findings that there is not any direct conclusion that public HFs were more contacted because of reasons relating to absence or rate of user-fees or the perceived quality of care. Nevertheless, the results still show some of the clients mentioning the issue of quality of care as one the driving factors in their choice of private clinics instead of public ones or vice versa. This clients' view is another revelation confirming a large volume the literature reporting that it is not uncommon for public members in SSA to build much more trust in the quality of services provided at private facilities [32]. In Tanzania, high public trust in private (especially faith-based) providers influence some public members to bypass public HFs even if such providers have to be followed at farther places than the closer public facilities [18,33]. From Ghana also experience shows that pregnant women presented greater satisfaction with the quality of care delivered in private facilities than in public facilities [34].

Meanwhile, elements of user-fees disappointing clients attending the clinic (or those eligible for an ANC, but not visiting clinics) were pinpointed to exist in both present study districts. This is validated by the vast literature-based evidence on user-fees' effects upon poorest segments of the community in various places of Tanzania [12,35,36]. More specific reports on factors constraining IPTp uptake indicate this disappointment to exist even for the services relating to malaria chemo prevention in pregnant women through IPTp-SP strategy [6,37,38]. Moreover, the debate about whether primary health care services should continue to be delivered for free to poor people (including services relating to malaria, family planning and other reproductive and child health dimensions) prevails, although critics challenge this by arguing that the free service provision does not a guarantee free access to services intended [16,39]. It has been evident from several studies that even when the services are delivered free of user-fees, the costs associated with travel and waiting time for service

do matter to the service user and may deter service use [40-42]. The issue of payment under the table reported in the present study may sound insignificant given the frequencies of the reported cases, but it should not be underrated. Entertaining HWs who ask for the bribe from the clients (if the reported events are true) is dangerous to the society for it may grow over time and may continue being practiced by HWs who feel underpaid by their employers and therefore use this as a ground for asking for the bribe. Episodes of service staff asking payment under the table from patients in Tanzania have been documented by previous researchers [18,14,39,43]. However small the number of the reporters on the issue of unofficial payments was in the present study in both districts, the point to note is that there was an element of dissatisfaction among the respondents that prevalence of the practice of corruptive service delivery for basic maternal services including ANC was against the government policy recommending pregnant women to access basic MCH services for free, an indicative of the failing policy enforcement especially in the public sector where most of the services are subsidized or delivered by the government itself. There is also possibility that a considerable number of respondents shied away to state their true experience on this issue so long as they were interviewed closer to HFs/clinics or felt that even the interviewers were among the HWs who would not feel happy to hear the respondents disclosing their experience on this.

Knowledge of Government Cost-Sharing System in Relation to ANC Services

Presence of respondents who were unsure or unaware of government ANC fee exemption policy mirrors the possibility that some of the women refrained themselves from attending the clinic by suspecting user fees, implementation even in public clinics as were in private ones. Experience from other reporters in the present study indicates that while the Tanzanian government encourages private sector providers' involvement in an MCH service provision, not always such providers comply with the free service delivery guideline due to various limitations on their side including lack of support from district or central level authorities [15,26,27,33]. It is interesting to note from the present study that at most 30% and 14% of the ANC clients approached in Mkuranga and Mufindi, respectively, had contacted private clinics before, hence confirming the contribution of the private sector on public health service provision and acting as an alternative source of care in Tanzania [15,26,33,44]. These authors suggest that equipping private sector providers with essential supplies, equipment and human resources would be much welcome as a support for MCH services in the country and would reduce the cost burden placed/shifted to poor people contacting such providers.

Study Limitations

The major shortcoming of the present study lies in its design, the sampling approaches employed, interview schedules conducted, response rates and analytical techniques employed.

Cross-sectional nature of the study: The data presented represent the views of the respondents interviewed once and based on particular study days in this cross-sectional study, so they lack representation of the respondents' experiences on events and income statuses over a range of time period throughout the year that might influence their health seeking behavior and perceptions on the affordability and quality of health care services.

Adoption of convenience sampling method: This method of sampling to identify the study facilities was subject to shortcomings, including lack of representation of the population and introducing bias. The number and type of the selected HFs was imbalanced, another indication of results biased to representing more of public facilities than private ones in both districts.

Interview schedules: The questionnaire was generally long. This practically exhausted the enumerators who had to be efficient enough not to hold the respondents for a long time and create fatigue to them. In the course of doing so, still boredom was noted among some respondents meanwhile compromising the quality of the data gathered. Interviewing or discussing with community/village based clients using the same data collection tool might have produced the information required by engaging the participants who would feel more free to express themselves, thus narrowing the response gap and bias created by those interviewed around HFs. Nonetheless, a separate collection of community based clients and HWs was done using other techniques even though such techniques were more qualitative in nature [9,15,45] and were supplemented by qualitative in-depth interviews with national and district level managers [15,27]. Also, as mentioned before under the methodology section above in this paper, responses to different questions and sub-questions varied because not all interviewees responded to every question and eventually, this affected the frequency/percentage distributions of specific issues under investigation or analysis. Although the focus of the present paper is on cost related issues, the experience by this study as also experienced during the pretesting of the research instruments showed that some of the respondents tended to mention the issue of costs in connection with issues of perceived quality of care even though they personally were unable to distinguish between the two. That is why such issues are interchangeably reported in this paper and an element worthwhile to consider in future studies attempting to assess the association between health care costs and demand for the health care services or a particular health intervention of interest.

Analytical Methods Employed: The results from UVA done as presented under LRA section are not much more informative compared to those coming from an MVA. It remains obvious that the UVA results presented a weak basis for drawing sound conclusion regarding the association between the identified outcome variable and some predictor variables. However, such results may be of help as they show the reader the effect of one variable over another in a crude manner when there is not any control for other variables in the model of analysis [23]. Had a PCA been performed, the investigator would probably have come up with study findings that are more detailed analyzed and much better illustrating to enable the audience learn more and better about the observed similarities and differences among clients interviewed in the two study districts and at different HFs. Some of the currently reported LRA results regarding respondents' experiences with user fee payment difficulties and other cost related elements of ANC seeking would be better informing if they were linked with the socioeconomic and HF characteristics identified in Tables 1 and 3 as mentioned in other sections of the paper. Admission of this weakness implies a call to future analysts to consider employing a PCA and multilevel analysis approach to disentangle the different socio-economic characteristics of the respondents (e.g. age, parity/gravidity frequencies, marital status, occupation, income, type of the facility contacted, etc.) and the responses given to the key research question [46-48].

Conclusion and Policy Implications

The present study confirms that real and perceived costs coupled with perceived quality of care influence rural women's ANC seeking behaviors and ultimate access to IPTp in Tanzania. It suggests that effective provision and high coverage of ANC services including those related to malaria IPTp require, among other things, the timely and regular contacts of ANC clinics by pregnant women. Sadly, the present study evidence reveals that the accomplishment of the latter goal could be constrained by such factors as user fee exemption policy's unpopularity, long waiting time at HFs mainly due to HF understaffing, occasional stock-outs of essential materials for free delivery, long travel distances in remote settings, women's low autonomy to decide in the family, as well as low support given to private sector providers for free service delivery. Thus, using this evidence, among other things, the district and central authorities are in a better position to take concerted measures toward improving the ANC situation in HFs meanwhile ensuring that they engage key players from other sectors dealing with gender issues in an attempt to tackle various MCH problems.

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Conflict of Interest

The author declared no conflict of interest in relation to this paper.

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