

Research report

The use of formal and informal services for antenatal care and malaria treatment in rural Uganda

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The study aimed to analyze reasons for the use or non-use of antenatal care services and malaria treatment among pregnant women living in rural areas in Uganda. Focus group discussions with pregnant women, in-depth interviews with key informants (Traditional Birth Attendants (TBAs) and health workers) and a structured questionnaire administered to pregnant women were used to collect the relevant information. Antenatal care attendance was irregular and few women knew that the purpose of attending antenatal care was to monitor both the growth of the baby and the health status of the woman. Parity significantly influenced antenatal care attendance, but level of education, religion and marital status did not. Fifty-five per cent of the women stated that they had delivered outside the formal health delivery system despite antenatal care attendance. All women in their second pregnancy had delivered their first child in the village, despite TBA training to the contrary.

Malaria as perceived by pregnant women is common and multiple health service providers are used for its treatment. About 66% of the mothers reported having suffered from malaria during the current pregnancy; of these more than half had received treatment outside the formal health delivery system. Self-treatment with drugs bought from ordinary shops was commonly reported. Nearly all women (93.3%) knew about the antimalarial drug chloroquine and 83% thought that it was used for the treatment of malaria, not for its prevention. Some women believed that the drug could cause abortion.

Health seeking behaviour was influenced by several factors, including the perceived high cost of antenatal care services, of conducting a delivery and treatment, and perceived inadequacy of services provided by the formal health system. Inadequacy of formal health services was perceived by users to be partly due to understaffing and to irregular supply of essential drugs.

Intensive health education to pregnant women on the safety of chloroquine use in pregnancy, the importance and the need for regular antenatal care attendance are recommended. In addition, training of more TBAs and continued educational efforts to upgrade their knowledge, regular and adequate supply of essential drugs, and free health services for high-risk groups such as pregnant women are recommended to improve antenatal care services and drug prophylaxis use in pregnancy.

Introduction

Information needed to study changes in women's health status is inadequate or unavailable.¹ Antenatal care is an important component of maternal and child health care, to monitor the health of the mother, anticipate difficulties and complications of labour, to ensure the birth of a healthy baby and to help the mother rear the child.² Non-attendance of antenatal care has been observed to be among the principal

risk factors for dying from pregnancy-related causes.³ Socioeconomic factors, different perceptions and lack of motivation have been observed to influence antenatal care attendance.⁴ Studies have also associated distance with the use of the formal health delivery system,⁵ but it has been noted that not all patients use the closest source of health care.⁶ Because of the importance of antenatal care services to both the mother and the baby, and the

low rate of antenatal care attendance, there is a need for alternative approaches to antenatal care delivery.

Plasmodium falciparum malaria infection and anaemia are common in pregnancy⁷ and are of great concern to public health workers in malaria endemic areas due to their deleterious effects on both the mother and the baby. The major adverse outcomes of *P. falciparum* infection are mainly maternal anaemia and reduction in birth weight especially in primigravidae (women with first pregnancy).⁸ Malaria chemoprophylaxis (taking drugs to prevent malaria episodes) is routinely recommended throughout pregnancy for all women living in malarious endemic areas,⁹ although it is not routinely given in some malarious endemic areas, probably due to lack of a clear policy on malaria prophylaxis. Iron and folic acid tablets are also routinely recommended to all pregnant women,¹⁰ but compliance with their use,^{10,13} and use of prophylactic anti-malarial drugs,^{11,12} is not easily assured.

The success of any programme depends not only on the efficacy of the intervention, but also on achieving optimal use by the target population.¹⁴ In Tanzania, mothers recognized the efficacy of chloroquine used for malaria prevention in children and began distributing the supplies to others with fever.¹⁵ It has also been estimated that half of the antimalarial drugs are distributed outside the formal health delivery system.¹⁶ While chloroquine is the most common drug used for prevention of malaria, some studies have noted the belief that chloroquine is harmful to pregnant women.¹²

Based on this background information, a study was designed to analyze factors associated with the use of antenatal care services, the use of drugs used to prevent malaria and anaemia, and health-seeking behaviour regarding malaria during pregnancy. The main objectives were to provide information that could be used to improve the quality of antenatal care services and information on the supply and use of drugs for the prevention of malaria and anaemia among pregnant women. The study tried specifically to analyze:

- (i) the association between basic socioeconomic indicators and antenatal care practices.
- (ii) knowledge of pregnant women with regard to antenatal care services and the use of drugs for prevention of malaria and anaemia in pregnancy;

(iii) barriers to utilization of antenatal care services and use of drugs for prevention of malaria and anaemia in pregnancy;

(iv) availability and adequacy of drugs for prevention of malaria and anaemia in rural health units in Hoima district, Western Uganda.

Materials and methods

Study area

The study was carried out in Kigorobyia sub-county in Hoima district, Western Uganda. Hoima borders Masindi, Kabarole and Kibale districts. According to the 1969, 1980 and 1991 censuses, the population of Hoima district was approximately 112 700, 142 200 and 197 851 respectively. The district covers a land area of 3563 square km with a population density in 1991 of 56 persons per square km.

Ethnically, the majority of the people are Banyoro, speaking a dialect of Runyoro. It is an area of ethnic diversity, including Luo, Alur, Bakiga, Bagungu and Banyarwanda. Some of the people came as immigrants and have become more or less permanently settled. The main economic activity of the area is subsistence farming.

According to the District health report, the area has a number of health problems; the major ones being lack of adequate safe water, malaria, acute respiratory tract infections and epidemics of dysentery, especially on the shores of Lake Albert. There is one government hospital in Hoima District, two health centres (Kyangwali and Kigorobyia), 18 dispensaries and one clinic at the office of the District Medical Officer. Of the 18 dispensaries, four are run by non-governmental organizations and the rest by the government. The health centres provide both curative and preventive health care services. Health statistics from the district indicate that 70–80% of pregnant women attend antenatal care services. However, few women attend regularly and about 74% of pregnant women deliver at their homes assisted by trained or untrained TBAs.

Drugs for prevention of malaria are not routinely given to pregnant women in the area. Mothers are only advised to come to the health unit for malaria treatment when they are sick. Iron and folic acid tablets are routinely recommended for all pregnant

women. They are, however, not routinely given due to irregular and inadequate supply.

Study population

Women of different parity, including primigravidae, who were in the second and third trimester and gave a verbal consent to participate, were enrolled from six different parishes. Four health workers from one health unit and ten TBAs from six different parishes also participated in the study.

Methods

Both qualitative and quantitative methods were used to collect the relevant information. Women were asked for their consent to participate in Focus Group Discussions (FGD) and fill in a structured questionnaire. Women who had participated in a FGD did not fill in the questionnaire. Confidentiality was highlighted; participants were reminded that the research team was not interested in their names, only their honest and frank opinions.

Qualitative data collection

Qualitative data was collected using FGD and in-depth interviews with key informants (TBAs and the health personnel at the formal health delivery system). The guide for FGD was initially written in English and later translated into Runyoro, the major local language. Pre-test of the guide was done to test the nature of the questions, characteristics of the audience, interaction between the participants and the moderator procedures. The FGD guide included questions on places where women go for antenatal care, why they go for antenatal care, antenatal care services provided, medicines given during antenatal care visits and changes the mothers feel should be done to improve antenatal care services and child management. A similar guide was used to conduct in-depth interviews with TBAs.

Focus groups were selected by respondents' socioeconomic and demographic characteristics that could influence perceptions, behaviour and practices of antenatal care. Focus groups composed of eight to twelve women of different parity including primigravidae. Their age ranged from 17 to about 47 years and they were all peasant farmers with poor socioeconomic status. Most of them were illiterate with a few having attained primary level education.

The moderator of the focus groups and in-depth interviews was an anthropologist with expertise in qualitative data collection methods. The notetaker was

the principal investigator. FGD and in-depth interviews were continued until there was no new information gathered. Ten group discussions with pregnant women and four in-depth interviews with TBAs were conducted. Four in-depth interviews with health personnel were conducted to assess factors of health services providers associated with the use and non-use of antenatal care services and drug prophylaxis.

Quantitative data collection

A standardized structured questionnaire designed in English was used. It was translated from English into Runyoro and back into English for checking of possible inconsistencies due to language differences. Pre-testing and pilot testing of the questionnaire was undertaken before it was used. It was administered to the study population by trained interviewers with degrees in social science. The questions included basic socioeconomic indicators, knowledge of antenatal care services, drugs used for malaria prevention and barriers to the utilization of antenatal care services. The questionnaire was administered to a total of 149 pregnant women. The availability of essential drugs was assessed by checking on drug inventories at the health units.

Data analysis

Non-computerized analysis was used to analyze qualitative data. A code sheet was created following the focus group guide, and data were coded. Then a master sheet analysis was done, giving all the responses from the focus groups and in-depth interviews. Responses were interpreted by looking at the patterns in the responses and formulating ideas which could account for those patterns. Methods used included content analysis, ethnographic summaries and use of quotes. Analysis also gave consideration to the actual words used by participants, the context, internal consistency and the specific responses. Quantitative data were entered using Epi-Info software which was also used for analysis. The responses given by the study participants were assigned codes before data entry and data cleaning was done before analysis.

Results

FGD and in-depth interview results

Most mothers indicated that they attend the formal health delivery system for antenatal care services mainly to have the position of the baby checked, for tetanus vaccination, to get treatment when sick, and to get the antenatal card. Some mothers just attend

once to get the antenatal card, so that at delivery they are regarded by the health personnel as having been attending the clinic. Some mothers mentioned, however, that they visited the TBAs for both antenatal care and treatment. Others mentioned treating themselves with drugs bought from ordinary shops. Drugs which women thought a pregnant woman is not supposed to take included: a bitter local herb known as 'omubirizi', capsules (any drug dispensed in capsule form), Niverquine, chloroquine, family planning pills, ivermectin, ketrax and mebendazole. These drugs were believed to cause abortion.

Antenatal care attendance

Factors which hinder antenatal care attendance included perceived inadequate services offered to mothers at the formal health delivery system. Typical comments included:

'Imagine paying 2000 Ug. Shs on transport in addition to 1000 Ug. Shs for antenatal care and they (the staff at the clinic) just touch your abdomen and do not even listen to the baby and tell the mother the status of the baby.' (pregnant woman aged 26 years)^a

'They just touch your abdomen, it is better to go to the TBA because the TBA examines the mother and tells her how the baby is lying in the abdomen.' (pregnant woman aged 32 years)

Medicine was rarely given to mothers and they felt that it was useless to go for antenatal care.

'The health centre should supply us tablets for blood as it used to be long ago.' (pregnant woman aged 38 years)

Apparently it seems that pregnant women would appreciate the services if they could be given medicine, information on the status of their babies, and have their babies listened to.

Some pregnant women talked of lack of money as one reason for their non-attendance at formal antenatal care services. A woman is required to pay the equivalent of US\$1 in Ug. Shs for antenatal care on the first visit. Women were of the opinion that the fee should be abolished or reduced to the equivalent of US\$0.5. Others compared the fee charged at the formal health delivery system with the US\$0.3 charged by the TBA and thought that the fee at the formal delivery health system was too high.

'A TBA only charges 300 Ug. Shs for antenatal care. At the health unit they charge 1000 Ug. Shs which we cannot afford.' (pregnant woman aged 18 years)

Although most women indicated that they attend antenatal care services, most mothers do not utilize the system for delivery due to perceived high user fees. At delivery a mother is required to bring with her a pair of gloves, cotton wool, a polythene sheet to cover the delivery bed and a vial of ergometrine – all estimated to cost about US\$5 in addition to transport costs and the official delivery fee of US\$0.5. They therefore opt to visit the trained or untrained TBAs or deliver at their homes assisted by neighbours.

'More TBAs should be trained to improve on antenatal care services, but more so in conducting deliveries.' (echoed by most pregnant women in FGD)

Lack of awareness about the importance of antenatal care and cultural barriers of some ethnic groups were also among the factors hindering the utilization of the formal health system for delivery and antenatal care.

'The Alurs do not usually attend antenatal care or deliver from the health unit because they get embarrassed in front of other community members who think that they are not brave enough to deliver on their own without the assistance of a midwife.' (TBA aged 48 years)

Other mentioned factors included long distance, sudden onset of labour, lack of awareness and self-confidence among women who have delivered several times in the villages.

'If a woman has always delivered well, she does not see the need for antenatal care attendance or visiting the health unit to deliver.' (pregnant woman aged 35 years)

The methods suggested by pregnant women to improve the delivery of antenatal care services in the area included: (i) abolishing the antenatal care fee or reducing it to US\$0.5, (ii) having the status of the baby checked by health unit staff and informing mothers of the findings, (iii) giving women medicine when they visit the clinic and checking for anaemia. Some women mentioned improving roads and establishing the clinic near their homes implying that the long distance to the clinic was one of the factors

hindering antenatal care attendance. One TBA mentioned that improvement in the delivery of antenatal care services could be achieved by:

'Mobilizing the community members through local leaders and giving health education about the importance of antenatal care.' (TBA aged 46)

From discussions with health personnel, and from the District health report and drug inventories forms, it was found that health service related factors which hinder the use of antenatal care services included: understaffing of the health centre and inadequate supply of drugs. There is one medical assistant who is in charge of the unit, and one midwife who runs the antenatal care clinic and also conducts deliveries assisted by one nursing aid. The total population catchment for the health centre is 14 595. About 3357 are women of reproductive age (15–49 years), 759 were pregnant at the time of the study. This clearly shows that the midwife's work load is excessive. Drugs received at the health unit were observed to be inadequate. The unit receives one kit of essential drugs quarterly. The kit contains 5000 iron tablets, 500 folic acid tablets and 15 000 chloroquine tablets, to be used for both antenatal care and outpatients.

'Even when the drugs are available, some mothers are poor and may not be able to pay for them.' (health worker at a health unit)

Questionnaire results

A total of 149 women were interviewed, their ages ranging from 14 to 38 years with a mean age of 23 years. Forty-eight women (32.2%) had no formal education, 92 (61.7%) were educated to primary level, eight (5.4%) to secondary level and one to tertiary level. One hundred and thirty-three (89.3%) were married; 11 (7.4%) were unmarried, two (1.3%) divorced and three (2%) were widows. Nearly all the women (94%) were Christians. Sixty-one (40.9%) were Roman Catholics and 79 (66.4%) were Protestants. Only six (4%) were Muslims and three (2%) had no religion. The level of education, religion and marital status did not significantly influence antenatal care attendance.

Antenatal care attendance

Eighty women (53.7%) reported attending antenatal care during the current pregnancy; only 14 had attended more than twice although all were in their second and third trimester (Table 1). All the women attending the services were attending the formal

Table 1. Number of antenatal care visits during the current pregnancy in relation to parity

Visits	Primigravidae Respondents (%)	Multigravidae Respondents (%)	Total
0	19 (61.3)	50 (42.4)	69
1	6 (19.4)	23 (19.5)	29
2	3 (9.7)	34 (28.8)	37
3	2 (6.6)	7 (5.9)	9
>3	1 (3.0)	4 (3.4)	5
Total	31	118	149

Chi-square 4.38, $p = 0.036$

health delivery system, except for one who was attending a private clinic. Multigravidae attended antenatal services more than primigravidae (Chi square 4.38, $p = 0.036$). As in the FGDs, most women indicated that they attend an antenatal care clinic to get their baby's position checked and to get the antenatal card, tetanus vaccination and for treatment when sick. Only 32 (40%) of those attending the clinic knew that the purpose of attending was to monitor both the health of the mother and the growth of the baby. Sixty-six (82.5%) thought that it was only to monitor the growth of the baby, 40 (51.2%) thought it was to get treatment when sick, while seven (8.7%) thought it was just to get the antenatal card.

Thirty-two mothers (46%) were not attending due to lack of money to pay for antenatal care and 24 (35%) did not attend as they thought they were in early stages of pregnancy. Of these 24 women, 21 (88%) were in the second or third trimester as estimated by the difference in weeks from the dates of their last normal menstruation period and the date the interview was done. This implied that many women start attending the clinic late and are not aware of the progress of their pregnancy. Six (9%) specifically mentioned distance to the formal services as the reason for their non-attendance. However, many women living within 3 kms or less of the clinic were not utilizing the health system (Table 2) – but the differences were not significant (Chi square 0.04, $p = 0.832$). Other reasons given by seven women for not attending included: perceived inadequate antenatal care services offered at the formal health delivery system, and the perception that they were not sick and therefore did not need to attend the clinic.

Table 2. Relationship between distance from the health unit and antenatal care attendance

Distance	Yes (%)	Attending No (%)	Total
≤ 3 km	45 (52.9)	40 (47.1)	85
≤ 4 km	35 (54.7)	29 (45.3)	64
Total	80	69	149

Chi-square 0.04, $p = 0.832$

Table 3. Use of formal versus informal health delivery system as first choice for malaria treatment by parity

Parity	Formal health system (%)	Informal health system (%)	Total
Primigravidae	16 (66.7)	8 (33.3)	24
Multigravidae	33 (44.0)	42 (56.0)	75
Total	49	50	99

Chi-square 3.74, $p = 0.053$

Despite antenatal care attendance, most women deliver outside the formal health delivery system. Of the 119 multigravidae interviewed, only 45 (38%) had delivered their previous child at the formal health services; 69 (58%) had delivered elsewhere. Of these 69, 31 (26%) had delivered at their homes assisted by TBAs, 24 (20%) were assisted by neighbours or their husbands, and 14 (11.7%) delivered with no assistance. Eleven (15.9%) were secundigravidas implying that they had delivered their first child outside the formal health system. Eight were assisted by TBAs despite the training curriculum of TBAs in Uganda which stresses that all primigravidae should be referred to the health units for delivery.

Malaria in pregnancy as perceived by women was commonly reported and various health service providers were used for treatment. About 99 (66.4%) women reported having suffered from malaria during the current pregnancy. Only 49 (49%) had obtained treatment at the formal health delivery system; 50 (51%) had been treated elsewhere. Of these 50, 28 (56%) had treated themselves with drugs bought

from drug shops or ordinary shops, 11 (22%) had received treatment from private clinics, five (10%) from their neighbours, four (8%) used herbal treatments and two (4%) did not get treatment at all. Multigravidae were more likely to use the informal health delivery system as first choice for malaria treatment than primigravidae (Table 3). Reasons for not using the formal health system varied from economic factors to lack of drugs at the formal health facilities, long distance, long waiting time for treatment, and personal preference for self-medication.

Most women, 139 (93.3%), knew about chloroquine and 116 (84%) knew that the drug was used to treat malaria. Nobody knew that the drug could be used to prevent malaria. Seventy (51%) had used chloroquine at some time for malaria treatment and 30 (43%) reported experiencing side-effects. The side-effects commonly reported were skin itchiness (83.3%) and dizziness (13.3%). Fourteen (46.7%) of the 30 who had experienced side-effects, reported that they would never use chloroquine again because of the side-effects. Of the 149 women answering the questionnaire, 22 (14.8%) perceived that chloroquine or Niverquine and local bitter herbs were not good for pregnant women because they can cause abortion or kill a pregnant woman.

Discussion

Antenatal care attendance was observed to be inadequate and knowledge of the purposes and importance of the services for the pregnant mother and newborn child was incomplete. Similar observations have been made in rural areas of India¹⁷ and Malawi.¹⁹ In Malawi, the number of antenatal care visits decreased sharply after the second visit, whatever the level of education. A similar observation was made in this study where only 17.5% had attended more than twice. The majority had attended twice (46.3%) and 36.3% only once.

Perceived high cost of antenatal care services, early stages of pregnancy and poor formal antenatal care services were among the major factors observed to hinder antenatal care attendance. A similar observation of perceived high cost of antenatal care services as a hindrance to attendance was made among unmarried pregnant girls in Nigeria;⁴ but marital status did not significantly influence the antenatal care attendance in this study.

Some studies have associated distance with the use of formal health care services⁵ and perceived effectiveness of the health delivery system.¹⁸ However, other studies⁶ have noted that not all patients use the closest health care facility. In this study, distance was not significantly associated with poor antenatal care attendance. A large proportion (47%) of women living within a distance of 3 kms from the formal health care facilities were actually not attending them. This is probably due to perceived high cost or perceived inadequacy of health services overriding the importance of distance as a factor.

Although more than half of the women reported attending antenatal care at the formal health delivery system, most deliveries take place outside the system. More than 55% of the multigravidae had delivered their previous pregnancy at home. Similar observations have been made in other countries. In Malawi¹⁹ only 58% of women delivered in a hospital, while in Nigeria²⁰ only 51% of the women had delivered at a health institution and 49% had delivered under the care of TBAs. The reason for this is probably due to perceived high cost of delivery at formal health facilities. Women choose to deliver under the care of TBAs who charge in cash (US\$3) or in kind to conduct a delivery. This is cheaper than delivering at the formal health system and the costs are further reduced because the woman does not have to pay transport costs. McCombie found that even when services in health centres are free, transport costs might be substantial and hinder the use of services.²¹

Malaria in pregnancy as perceived by pregnant women was common among women in the study area and multiple malaria treatments were used. More than 65% of the interviewed women reported having had malaria during the current pregnancy and half of them had used the formal health delivery system for treatment. On average, 37 clinical malaria cases among pregnant women are diagnosed monthly at the formal health services in the area. The reported number of malaria cases in this study is slightly higher and this could be due to the fact that some women could have had another febrile illness which they thought was malaria.

Lack of money to pay for treatment and perceived absence of drugs at the formal health delivery system were the main reasons commonly reported for non-use of the system for malaria treatment. It has been found¹⁵ that drugs are more likely to be out of stock

in health centres than in retail shops. Thus people see it as a waste of time and money going to the formal health facilities if it is likely they will have no drugs. Self-treatment with drugs bought from shops was more commonly reported. This finding is comparable with other studies.^{22,23,24}

A study in Uganda²³ observed that some women used herbs for malaria treatment and that the first action against 'Omusujja', a broad non-specific term for fever, was to use local herbs. If the herbs had no effect, the women would buy tablets from the shops. In Somalia, it was reported that people felt there was no reason to waste time and money on malaria treatment if it could be cured at home with traditional remedies.²⁵

Therefore the formal health delivery system is visited for treatment as a last resort when traditional remedies have failed. The reason for this, as observed in this study, is two-fold: perceived high cost of treatment and lack of drugs at the formal health delivery system.

Most women knew about chloroquine and knew that the drug is used for the treatment of malaria, but none had knowledge of its use for malaria prevention. This finding is not surprising as the use of antimalarials for prevention in pregnancy is not a policy in Uganda.

Compliance to chloroquine use for malaria treatment and prevention has always been difficult to achieve due to the bitter taste and chloroquine-associated skin itching.²⁶ Itching was the most common reported side-effect of chloroquine in this study. For many the itching was so important that the women reported that they would never use the drug again. In a study in Tanzania,²⁷ 49.4% of the women were not using chloroquine for prophylaxis because of fear of chloroquine-induced itching.

Some women mentioned that chloroquine and 'omubirizi' (a bitter local herb) are bad for pregnant women because they are thought to cause abortion. A study in Malawi observed that community members believed that chloroquine is dangerous to pregnant women because of its bitter taste as bitter tasting drugs are used to induce abortion.¹²

Conclusion

The results of this study point to important factors associated with the use or non-use of antenatal care services. As the high cost of services which are

perceived as inadequate is a major barrier to their use, decisions on the price of the fee charged should take into account what users can afford. Communities should be involved in such decisions. Offering free preventive and health promotive services to high-risk groups, such as children under five and pregnant women (ANC), should be considered where feasible.

Self-medication for malaria and other illnesses with local herbs and drugs bought from shops is a common practice, partly attributed to the irregular and inadequate supply of essential drugs at the formal health delivery system and to the cultural use of home-based treatments and use of non-formal health delivery systems. Measures to upgrade and incorporate drug sellers into the delivery of health services should be sought, especially basic training in good dispensing practice combined with basic pharmacological knowledge on drug effects and their different use in treatment and for prophylaxis. A licensing system for drug sellers that incorporates monitoring of the amount and types of drugs dispensed is recommended. This would provide possibilities for the control and prevention of the misuse of drugs dispensed through informal channels.

Health education on the safety of chloroquine use in pregnancy, and the importance and the need for regular antenatal care attendance needs to be strengthened. It should be stressed to mothers that ANC is meant to prevent and mitigate potential hazards which might affect mother and child. Health education as practised now at antenatal care clinics does not appear to be effective in inducing behavioural changes in relation to pregnancy. More dialogue between health personnel and pregnant women would help this, not just health information lectured to passive groups of women but an activity-based and individualized approach.

As rural health units in particular lack staff, more midwives should be trained and posted to them. More trained TBAs are also needed, and continued efforts to upgrade their knowledge should be strengthened. For services to be more effective, health personnel at antenatal care services need to be aware of the needs and demands of pregnant women, and allocate time to explaining to them the importance of attending antenatal care services.

A regular and adequate supply of essential drugs and free preventive or health-promoting services for high-risk groups such as pregnant women are

recommended to improve antenatal care services and drug prophylaxis use in pregnancy.

Endnote

^a1,000 Ug. Shs = 1US\$.

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