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Midwives' provision of antimalaria services to pregnant women in Uganda

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ABSTRACT

Objectives: malaria causes complications during 80% of all pregnancies in Uganda. However, only 48% of Ugandan pregnant women took one dose of intermittent preventive therapy while merely 27% took the second dose during 2011. This study investigated midwives' provision of anti-malaria services in the Buikwe District of Uganda.
Design: a quantitative exploratory descriptive design was used.
Setting: prenatal clinics (n=16) in the Buikwe District of Uganda
Respondents: questionnaires were completed by 40 (out of a population of 45) midwives.
Findings: midwives' provision of malaria-preventive services to pregnant women were associated with the midwives' education level and professional experience as well as by the availability of safe drinking water and drugs for intermittent preventive treatment. Midwives who provided frequent health education to pregnant women, cooperated with village health team members and received in-service training were likely to provide effective anti-malaria services to pregnant women.
Key conclusions: regular audits of midwives' records should identify strengths and weaknesses related to the prevention of malaria during pregnancy. Relevant in- service education should be provided. Drugs for intermittent preventive therapy and clean drinking water must be available at all prenatal clinics so that pregnant women can take these drugs under direct observation of the midwives.
Implications for practice: malaria-related health education should be provided during every prenatal clinic visit, and every pregnant women should take two doses of intermittent preventive therapy drugs during every pregnancy (as prescribed by Uganda's Ministry of Health) in order to reduce the reported impact of malaria on 80% of pregnancies in Uganda.

Introduction

According to Uganda's Ministry of Health (MOH 2012a:91), intermittent preventive treatment (IPT) to avoid malaria during pregnancy is a free preventive service available to all pregnant women without clinical signs and symptoms of malaria, attending prenatal clinics. However, pregnant women diagnosed with malaria, are treated with the recommended first or second line treatment, depending on the clinical presentation of the disease. Two doses of IPT should be taken by pregnant women between the 6th and the 8th months of pregnancy (MOH, 2012a:91-92) because IPT drugs, sulfadoxine and pyrimethamine (SP), are contra-indicated during the first trimester. The interval between the two doses should be at least one month because IPT contains long acting anti-malarial drugs, that could accumulate in the body if taken more frequently, potentially causing hepato-toxicity (MOH, 2012a:91-92). In the context of the current study, IPT utilisation was accepted as the gold standard with which other anti-malaria services were compared. This was based on the guidelines that specify IPT as being the major anti-malaria service to be provided by midwives in prenatal clinics (MOH, 2012b:92).

Malaria has devastating effects on pregnant women and their unborn babies (MOH 2012b:9) including maternal anaemia, maternal deaths and low birth weights of babies. Although Uganda provides free malaria prevention and control services, including two doses of IPT for pregnant women, malaria continues to cause complications in most pregnancies in this country. This might be partly attributable do the fact that during 2011 only 48% of pregnant women in Uganda took the first dose of IPT and merely 27% took the second dose (Uganda Bureau

Abbreviations: ANC, antenatal care; CDC, Centres for Disease Control; DOT, directly observed treatment;; PT, intermittent preventive therapy;; IRS, indoor residual spraying; LLIN, long lasting insecticide treated net;; MOH, Ministry of Health (of Uganda);; UBOS, Uganda Bureau of Statistics;; WHO, World Health Organization

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of Statistics, 2012). Malaria prevention during pregnancy was also adversely affected because only 47% of pregnant women used long lasting insecticidal treated nets (LLINs) and 7.2% of houses implemented indoor residual spraying (IRS) to kill mosquitoes resting on indoor walls (UBOS, 2012).

These findings were reported despite the provision of free LLINs and IPT. On the basis of the MOH's and WHO's recommendations, IPT should be administered as directly observed treatment (DOT) (Mpogoro et al., 2014). This implies that pregnant women should swallow these pills in the presence of a midwife in the prenatal clinic presuming that both IPT drugs and clean drinking water are available at prenatal clinics. Midwives working in prenatal clinics without regular supplies of IPT drugs and/or without clean drinking water are unable to offer an effective IPT service. Dispensing IPT drugs for pregnant women to take at home might be ineffective as it is unlikely that pregnant women, who do not feel ill and thus do not perceive any need to take medicines, would indeed take IPT pills unsupervised at home.

The study was based in the Buikwe District of Uganda which has a wet warm climate, lying on the equator, conducive for the breeding of mosquitoes, explaining the endemic nature of malaria in this district. Although Uganda provides antimalaria services to pregnant women, malaria continues to cause complications in 80% of pregnancies. Thus the research question was: which factors influence midwives' provision of antimalaria services to pregnant women at prenatal clinics in the Buikwe District of Uganda?

The objectives for this study were to identify factors that might influence midwives' provision of antimalaria services to pregnant women, namely:

- environmental factors
- midwives' personal characteristics and behaviours
- health seeking practices of pregnant women

Methods

A quantitative, descriptive correlational study was conducted to identify factors that impact on midwives' provision of antimalaria services in the Buikwe District of Uganda. The study population comprised 45 midwives working at the district's16 prenatal clinics during April/May, 2014. Only 40 midwives could complete questionnaires, comprising the study's accessible population of midwives. (Five midwives were on leave and could not be contacted).

A questionnaire was designed, based on a literature review and on the MOH's guidelines. It comprised three major sections addressing midwives' personal characteristics (10 items), environmental factors influencing pregnant women's utilisation of antimalaria services (29 items) and pregnant women's health-seeking behaviours (15 items including one open-ended question, namely: 'What do you think could be done to reduce the incidence of malaria during pregnancy?'). With the exception of one open-ended question, all items were either multi-response items (requiring the selection of the most appropriate answer) or one-word answers to questions such as age or years of midwifery experience. As the accessible population of midwives comprised 40 persons, no pretesting of the questionnaire was done. Four trained research assistants administered the questionnaire during face-to-face encounters with the midwives. No problems were encountered to respond to any questionnaire items. The calculated Cronbach alpha for the questionnaire was 0.749. This implies that the items in the instrument had acceptable levels of internal consistency (Burns and Grove, 2005; Polit and Beck, 2008). Five experts (two doctors from Kawolo Hospital and one from Nyenga Hospital as well as two senior midwives from Kawolo Hospital working in the field of malaria control) were requested to rate each item on a scale ranging from 1 to 5, with 5 indicating perfect validity and 1 no validity. Thereafter the scores of the five experts were calculated and only items scoring a mean content validity of at least 4 (out of 5) were included in the respective instruments. This implied that there was a good content validity of the instrument used in the study (Burns and Grove, 2005; Polit et al., 2007).

The data recorded on the completed questionnaires were checked by the first author soon after data collection. Data were entered into the computer on a daily basis. A statistician assisted with the data analysis and interpretation. Descriptive data analyses were compiled, including correlational analysis. Pearson's correlation coefficients were calculated to identify associations between different variables with the provision of IPT.

The Higher Degrees Committee of the Department of Health Studies at the University of South Africa issued an ethical clearance certificate after the research proposal had been accepted. The relevant Ugandan health authorities (including the Buikwe District Health Office and the managers of the 16 participating prenatal clinics) also granted permission to conductthis research. The midwives' rights to self-determination, privacy and autonomy were respected. Every responding midwife signed voluntary informed consent and no negative consequences were incurred if anybody refused to participate in the study. The four research assistants signed confidentiality agreements with the first author. No names of midwives were used in any reports and no names were recorded on questionnaires. Only the researchers and the statistician had access to the data as the completed questionnaires were securely locked up and the entered data were protected by a secure password on a computer accessible only to the researchers and statistician. The completed questionnaires and the data basis will be destroyed after acceptance of the research report.

Findings

Environmental factors

Midwives and the health care system comprise part of the environment in which pregnant women interact on a daily basis. Table 1 reflects the participating clinics' numbers (the names were removed for ensuring anonymity), the number of midwives employed at and participating in this study at each clinic as well as whether each clinic had clean drinking water and could provide proper IPT services. As indicated in Table 1, all 16 prenatal clinics had IPT drugs but three did not have clean drinking water. IPT should be given as directly observed therapy (DOT), implying that the pregnant women should swallow the IPT drugs under the supervision and in the presence of the midwife. However, 85% (n=34) of the responding midwives indicated that IPT drugs were given as DOT.

Most prenatal clinics (65%; n=26) were public (government-owned) facilities, 30% (n=12) were private not-for-profit faith-based health facilities and 5% (n=2) were private health facilities. The provision of IPT drugs at the prenatal clinics was not influenced by public/private ownership of the clinics. Out of the 40 midwives, 62.5% (n=25) said pregnant women did not pay for prenatal clinics' services but 37.5% (n=15) disagreed.

Some midwives said their prenatal clinics operated five or more days per week (65%; n=26), while others (35%; n=14) said their prenatal clinics operated fewer than five days per week. The provision of IPT at prenatal clinics was positively correlated with prenatal clinics that operated five or more days per week as shown by Pearson's correlation coefficient of 0.421 ($p < 0.05$). Most midwives (87.5%; n=35) indicated that IPT drugs were always available at their prenatal clinics while 12.5% (n=5) said this was often the case.

Almost all midwives 90% (n=36) said IPT drugs were given to pregnant women free of charge at their prenatal clinics. There was a small negative correlation between the cost of IPT drugs and the provision of these drugs as shown by Pearson's correlation coefficient of −0.108, $p > 0.05$. This implied that pregnant women who had to pay for their IPT drugs were slightly less likely to use these drugs than