

ORIGINAL ARTICLE

Factors Influencing Utilization of Intermittent Presumptive Treatment of Malaria (IPTp) Services by Pregnant Women in Sesheke District of Western Province Zambia

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ABSTRACT

Background: Intermittent presumptive treatment of malaria in pregnancy (IPTp) is one of the recommended interventions by World Health Organization to mitigate the impact of malaria in pregnancy in malaria stable transmission zones such as Sub Saharan regions so as to ensure the best outcome for both the mother and her unborn child. In line with the Zambian policy in malaria control, Sesheke District started implementing IPTp in the year 2003 as one of the methods to combat malaria in pregnancy. This intervention augments the use of Insecticide treated mosquito nets (ITNs) to prevent malaria transmission and early case detection and effective case management of malaria.

Despite the availability of IPTp services in all the health facilities in district, the uptake of IPTp is still very low especially for the second and third doses of IPTp (fansidar).

The main purpose of the study was to identify the factors influencing utilization of IPTp services by pregnant women in Sesheke District.

Methodology: This study was a cross sectional, non intervention descriptive type. The study was conducted in Sesheke District in Western province of Zambia. Multi-

stage sampling method was used to identify respondents to be included in the study. A purposeful method was used to select women to be included in the focus group discussions.

Triangulation approach method was used to collect data which included one semi structured interview schedule which was administered to 403 eligible women who had delivered from January 2012 to March 2013 in communities of eight selected centers under study, one separate structured questionnaire which was administered to both the Health Center in-charge and to the community health workers providing IPTp services in that catchment area. Two focus group discussions were also conducted, one from a hard to reach Health Center (Mkusi) and another one from not so hard to reach Health Center (Mulimambango). Stock control cards were also checked in order to determine the availability of fansidar in the eight selected health centers during the year 2012.

In order to ensure that the findings were valid, statistical significant was set at $p < 0.05$.

Results: The study found that the uptake of IPTp among pregnant women in Sesheke for the third dose of IPTp (fansidar) was very low (30%).

Factors influencing IPTp utilization identified in the study included; educational status of a woman,

Key words: Malaria in pregnancy, intermittent presumptive treatment of malaria during pregnancy (IPTp), effective IPTp service utilization, and fansidar doses.

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knowledge level of a woman about IPTp services, gestational age of the pregnancy at which a woman first starts antenatal care, number of times a woman attends antenatal care, and cultural misconceptions in the community. Lack of resources and transport in order for health providers to reach women in far and hard to reach areas was also identified as one of the most important challenges.

The study also found that stock levels of fansidar in most of the health centers were good and that the majority of the women perceived use of fansidar during pregnancy as safe. The focus group discussions (FGD) also revealed that most of the women were willing to take fansidar despite the associated side effects. The commonest side effects were headache, dizziness, nausea and vomiting.

Conclusion: This study demonstrates that effective IPTp service utilization in Sesheke District is very low. The study also identified factors and some challenges influencing IPTp service utilization. These factors and deficiencies urgently needed to be addressed if the district is to combat malaria in pregnancy. Address of these factors and deficiencies will not only contribute towards achievement of millennium development goals (MDGs) but also to overall improvement of maternal and child health.

INTRODUCTION

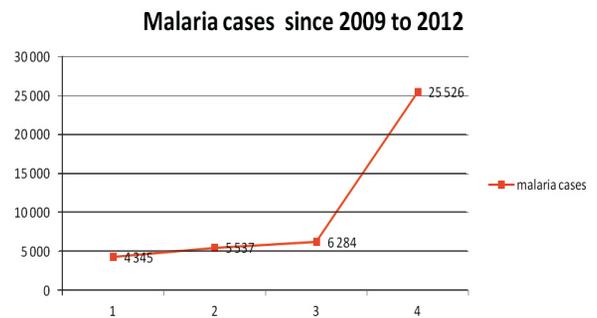
Malaria is a public health problem throughout the world. In Zambia, it is one of the top ten causes of morbidity and mortality especially in pregnant women and children. Under five-year-old children and pregnant women are the most vulnerable, especially those in more remote and impoverished areas, with 35-50 percent of under-five mortality and 20 percent of maternal mortality attributable to malaria¹. Estimated 45% health facility visit is due to malaria in Zambia².

Malaria during pregnancy is dangerous because it can lead to severe form of malaria and eventually death. It also causes abortions, premature deliveries; underweight infants and still births to mention but a few³.

Pregnant women are particularly vulnerable to the adverse consequences of malaria. In Sesheke District, malaria is among the top ten causes of morbidity. The

district is located in one of the highest malaria endemic regions of central Africa. Therefore malaria is one of the major causes of morbidity in the district especially among pregnant women and children. In the past, Sesheke District was classified as a low transmission zone. However, since 2009, malaria incidence continued rising hence posing serious risk especially on pregnant women and their unborn babies.

Figure 1 below shows malaria cases recorded from 2009 to 2012.



Sesheke HMIS(2012)

Malaria is among the ten top killer diseases in Zambia with an incidence rate of 412/1000. It accounts for 45% of all outpatient attendances and 50% of admissions among children under- five years⁴. It also contributes to about 20% of maternal mortality and 40% of infant and under-five child mortality⁴.

The Zambian Government adopted IPTp from World Health Organization (WHO) to treat pregnant women from malaria. Intermittent presumptive treatment (IPTp) of Malaria during pregnancy is based on the assumption that every pregnant woman living in an area with high Malaria transmission has Malaria parasites. The parasites live in her blood or placenta, whether or not she has symptoms and signs of Malaria³. This intervention involves the administration of three doses of fansidar as DOTS to pregnant women during the second and third trimester. This has been done to augment other key traditional interventions such as use of insecticide treated mosquito nets, indoor residual spraying, early diagnosis and treatment of malaria⁴. IPTp services in Zambia involve taking of three doses of sulphadoxine pyrimethamine (SP) as presumptive treatment of malaria

during pregnancy. This service is usually routinely provided together with other antenatal care services but can also be provided during outreach activities. However, despite availability of IPTp services in all the health facilities, the district has continued recording low IPTp coverage.

Health management information data (HMIS) indicates that majority of pregnant women in the district do not complete the three recommended IPTp doses. For example in 2011, the coverage for first dose was 76%, second dose was 54% and only 35.5% of pregnant women completed the recommended three IPTp doses during the course of their pregnancy⁵. This is far below the recommended national target of 80% coverage for the third dose of IPTp during pregnancy. This is alarming as lack of treatment of malaria especially during pregnancy can contribute to increased maternal morbidity and mortality. Untreated pregnant women are at risk of developing severe and complicated form of malaria. They are also at high risk of high abortions, could lead to still birth, low birth weight infants, premature deliveries, intrauterine growth retardation and anemia. Anemia subsequently increases risk of maternal death and malaria related anemia is estimated to cause as many as 10,000 maternal deaths each year in Africa³. Therefore if this problem of low utilization of IPTp services is not addressed in Sesheke district and in Zambia as a whole, the fight against malaria in pregnancy will be a futile exercise. This will have serious multiple health consequences on both the health of the women and their unborn children. If this trend is allowed to continue, good maternal and child health will be difficult to realize. This will eventually lead to failure of the country to realize its dream of eliminating malaria to near zero by 2015 and also in achieving the Millennium Development Goals (MDGs) 4, 5 & 6 by 2015. The MDGs as regards malaria is to reduce the incidence of malaria to less than 255 per 1000 population and to reduce the malaria fatality rate to 11 per 1000 population⁶.

In the quest to improve IPTp service utilization in the district, the Sesheke DCMO had embarked on activities aimed at improving IPTp utilization. These include IEC activities and outreach activities. However despite conducting these activities to enable women in hard to

reach areas to access this important service, there has been no improvement on the coverage.

Also since the introduction of IPTp services for pregnant women in 2003 to mitigate the effects of malaria in pregnancy, not many studies have been conducted in Zambia to determine factors influencing IPT services utilization and hence the need to carry out this important study.

It was therefore envisaged that the findings from this study would help the Ministry of Health and all institutions involved in malaria elimination to come up with suitable strategies that will encourage utilization of IPTp services by pregnant women. This would not only help contribute towards control of malaria but also overall improvement of general maternal child health.

Therefore, the aim of the study was to identify factors influencing the utilization of IPTp services by pregnant women in Sesheke district.

MATERIALS AND METHODS

The study was conducted in Sesheke District of Western Province in Zambia. Sesheke District had been selected because it is one of the districts with the highest malaria burden in Zambia. The district is located in the south west of western province with a surface area of 29,272Km² and a population of 98,644 in 2010 giving a population density of 3.2 persons per square kilometer (Sesheke HMIS, 2011). The district is located in one of the highest malaria endemic regions of central Africa. The district expected annual pregnancies are 3748; expected deliveries are 3551 and expected live births being 3354. Sesheke (HMIS, 2011).

The study population was women who delivered at full term in Sesheke District between January 2012 and March 2013 regardless of whether they had attended antenatal care or not. Health center staffs and community health workers providing IPTp services were also included in the study.

A cross sectional study design was used. The sample size was calculated using an estimate of expected point prevalence of IPTp coverage in Sesheke (35.5%). The study was designed to allow an absolute sampling error of up to 5%, with the power of study at 95% and therefore the

total sample size calculated was 400. Eligible women from the community were mobilized by the local leadership (i.e. NHC, Headmen, teachers, church leaders etc) to come for interviews at the nearest health facility. Also all eligible mothers in child bearing age (14 to 49 years) bringing children for the under-five clinic, postnatal mothers and mothers accessing other health services in government clinics were targeted. A maximum of 53 women were selected per each health center using systematic random sampling method.

Triangulation approach method was used to collect data as below;

Information from women participants was collected using interviewer-administered questionnaire, designed by the investigators and pre-tested prior to use. The questionnaire was written in both English and Lozi Languages and was administered by a trained local interviewers and the investigator in the language the respondents understood better. The questionnaire comprised of questions on socio-demographic characteristics, obstetric history, and knowledge on IPTp services, antenatal clinic use, IPTp use and perception of use of fansidar during pregnancy. Another separate semi structured interviews questionnaire was administered to the Health center in charge and to at least one community health assistant/ community health worker. This questionnaire included questions on knowledge on IPTp services and possible challenges health providers faced while providing IPTp services.

Two focus group discussions each comprising a group of ten women were conducted in two health centers. One focus group in hard to reach area and another one from not so hard to reach. The FGDs collected in-depth information on knowledge about IPTp services and perception of use of fansidar in pregnancy.

Information on the availability of fansidar in health centers was collected using health center stock control cards.

Data entry was performed using EpiData and analysis by Statistical Package for Social Sciences (SPSS) version 21. The open ended responses were assigned codes to bring related issues together under themes. The quantitative data

were entered with EpiData and analysis was done using SPSS 21.0 for windows after all variables were coded. Bivariate analysis was done with Chi-square test in order to determine the association between independent and dependent variables. The confidence interval was set at 95%. A result yielding a P value of less than 5% was considered to be statistically significant.

Qualitative data was analyzed using content analysis method. Using this method, a report of the proceedings of the focus group discussions were prepared in which some participants own words were recorded and reflected the key statements, ideas and the attitudes expressed by the participants. The results and findings were interpreted and the most useful quotations that emerged from the discussion to illustrate the main ideas were selected. The data summary was then done with the use of narratives.

Since the whole methodology approach had used triangulation method, data from questionnaires, focus group discussion and documents were analyzed simultaneously in relation to the literature review.

Ethical approval for this study was obtained from Eres Converge IRB Ethics Review Committee of 33 Joseph Mwila Road, Rhodes Park, Lusaka Zambia.

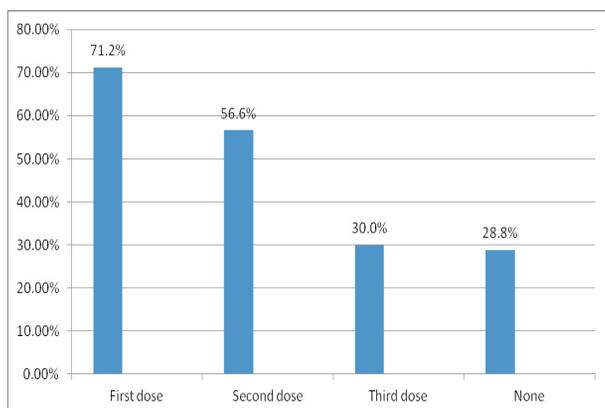
Written informed consent was obtained from each respondent before the interview. Permission to carry out the study was sought from Sesheke District Community Medical Office.

The study had some limitation because all the eligible respondents that were mobilized from the community as well as eligible women found at the health centers, were enrolled and interviewed right at health facilities because of conduciveness and easy access. Hence these eligible women that managed to come to the health facilities and those already found at health facilities were more likely to have utilized IPTp in the past. Therefore, there was a possibility of selection bias. However the researcher was limited due to inadequate resources to enable him follow and interview women from their households. Also since the questionnaire was translated into local language (Lozi) and then reinterpreted into English after each response, there could be the possibility of misinterpretation.

RESULTS

The study found that the uptake of IPTp among pregnant women in Sesheke for the first dose of IPTp (fansidar) was 71.2% for the first dose, 56.6% for the second dose and only 30% took all the three recommended doses while 28.8% did not take any during their last pregnancy. Figure 2.

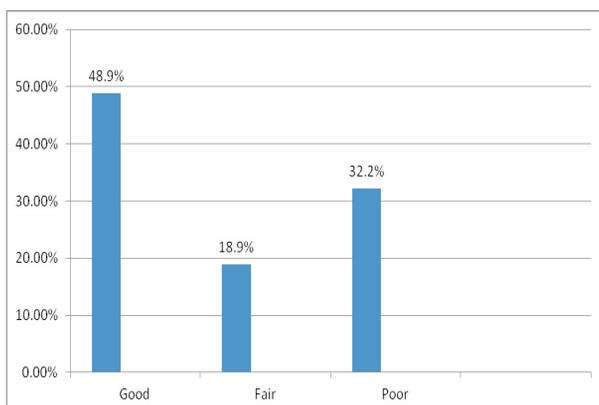
Figure 2: IPTp doses taken by women in their last pregnancy



Factors influencing IPTp utilization included; educational status of a woman (p value = 0.032), knowledge level of a woman about IPTp services (p value 0.021), gestational age of the pregnancy at which a woman starts ANC (p value 0.014), number of times a woman attends ANC (p value = 0.001).

Forty eight point nine percent (48.9%) of the women had good knowledge level about IPTp services, eighteen

Figure 3: Knowledge levels of women participants about IPTp services



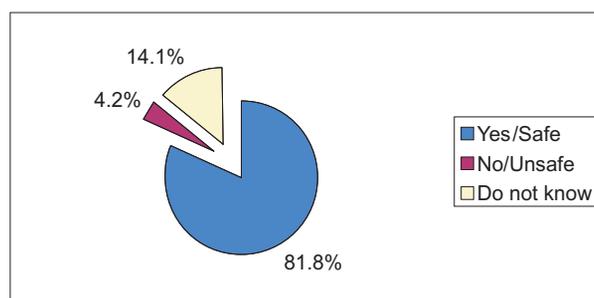
point nine percent (18.9%) of the women had fair knowledge and 32.2% had poor knowledge. The Odds ratio for good knowledge level was 2.952. This shows that women who had good knowledge level were 2.952 times more likely to complete the recommended IPTp doses. Figure 3.

Stock levels of fansidar was found to be 100% in six health centers while only two health centers had periodic shortage of fansidar for an average of two months. The reason for the stock out was due to malaria outbreak which led to the consumption of fansidar reserved for IPTp service.

The most common challenge health providers faced while providing IPTp services was found to be lack of transport and resources in form of allowances for the Health Center staff to conduct adequate outreach activities as planned so that women in far and hard to reach areas could be reached; periodic shortage of fansidar and tendency by women to deliberately start ANC late.

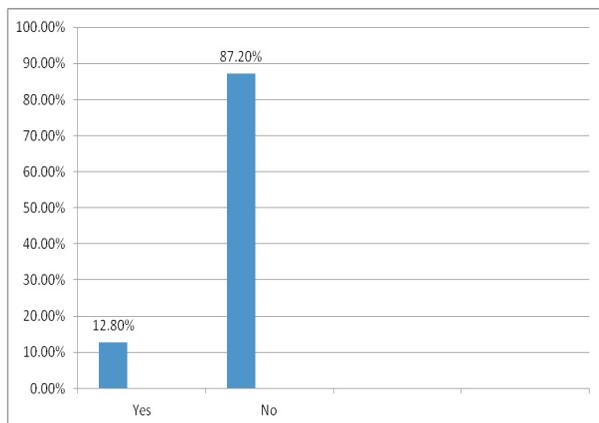
Majority of the women (81.8%) perceived use of fansidar in pregnancy as being safe and only a few women (4.2%) thought it was not safe while 14.1% of women did not know whether it was safe or not. Majority of the women were willing to take fansidar despite side effects associated with it. This was attributed to the perceived benefits of taking fansidar during pregnancy. Refer to figure 4,5 and 6.

Figure 4: Perception of use of fansidar in pregnancy



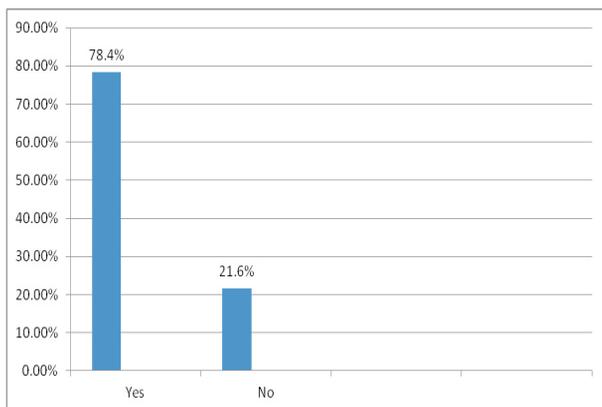
Only 12.8 % of the women that took fansidar during the last pregnancy had experienced problems (side effects of fansidar). Commonest side effects experienced included nausea and vomiting, dizziness and headache. Figure 5.

Figure 5: Proportion of women that experienced side effects of fansidar during their last pregnancy



Majority of women (78.4%) took subsequent doses of fansidar despite experiencing problems (side effects) with it while only 21.6% did not take. Figure 6.

Figure 6: Proportion of women who took fansidar despite experiencing side effects



DISCUSSION

The study clearly demonstrates that the uptake of IPTp doses was very low with only a few women (30%) completing the three recommended doses during pregnancy. Seventy one point two percent took at least the first IPTp dose while 56.6% took atleast the second dose while 28.8% did not take any doses of IPTp. The findings are in line with Sesheke Health Management Information System data which showed that only 33.5% of pregnant women effectively utilized IPTp services (completed the

three recommended doses) during pregnancy during the year 2011¹. However these findings are much lower than Zambia malaria indicator survey data, where it was found that 86% took the first dose and 70% took at least two doses². The study also identified some factors influencing IPTp utilization and disapproved some of the perceived factors.

In this study knowledge level of a woman about IPTp among women was found to strongly influence IPTp utilization ($p = 0.021$). This finding is in line with Okinleye³ who found that utilization of IPTp services was more among women that were knowledgeable about IPTp services. Less than half women (48.9%) had good knowledge about IPTp services, 18.9% had fair knowledge while 32.2% had poor knowledge. The Odds ratio for good knowledge was 2.952 which show that those with good knowledge were 2.6 times more likely to complete the IPTp doses. Health education was also associated with effective utilization of IPTp services (p value = 0.049). The finding shows that for IPTp coverage to improve, a lot of women needed to be sensitized about the importance of this service⁹. Therefore the district should encourage its staff to intensify IEC while providing services like IPTp. This is because when more women are educated about the importance of IPTp services, they will be empowered with knowledge and will be able to make informed decisions that impact positively on their lives.

This implies that if the community is adequately sensitized and also more IEC is provided to the women, IPTp coverage would improve as a lot of them will be able to utilize IPTp services. Education level of a woman was also found to be a factor influencing completion of three recommended doses of IPTp by a pregnant woman (p value = 0.032). This is because if a woman is educated, she is also in one way or another empowered with knowledge that enables her make informed decisions and choices that impact positively on her health.

The knowledge level of health providers was found to be equally encouraging with 64.7% having good knowledge, 29.4% had fair knowledge and only 5.9% had poor knowledge. The findings differ from study conducted by Onaka et al¹⁴, (2012) in Enugu state south-east of Nigeria in which it was found that only 14.7% of health providers

interviewed had correct knowledge of recommendations for IPTp service provision. This implies that health providers in Sesheke district have adequate knowledge about IPTp and would easily pass it on to pregnant women accessing IPTp services in their health facilities.

In this study it was also found that gestational age of the pregnancy at which a woman first accesses ANC was associated with completion of IPTp doses (p value = 0.014). This could be because fansidar is given one month apart starting from the fourth month of pregnancy. Hence women who start ANC in good time, or early are more likely to complete all the three recommended doses than those that start late. Therefore if women are to be fully utilizing IPTp services so that they are fully protected from malaria, they should be encouraged to be starting ANC early. This finding is in line with the FGD in which most women agreed that there was a deliberate attitude by most women to delay starting ANC despite them knowing that they were pregnant. Also the study found that the number of times a woman attends ANC did influence whether a woman was going to complete the three recommended doses of IPTp or not (p value = 0.001). This means that the more antenatal visits a woman makes the more likely she is able to complete the recommended IPTp doses. The finding contradicts Onaka et al¹⁰ and Sangare et al¹¹ who found that high ANC attendance did not guarantee high IPTp coverage.

Distance to the health center was found not to be a factor even if some scholars have argued that some woman do not complete the recommended doses of IPTp because they find it difficult to walk long distances as the pregnancy advances. In this study a good proportion of the women lived very far from the HCs (46.9%). However distance to the health center was not found to influence IPTp services utilization (p value = 0.174). This could be as a result of IPTp service provision within the communities by community health assistants/ workers, TBAs. It could also be due to IPTp service provision during outreach activities in area far from the HCs.

Other factors that did not influence utilization include: marital status (p value = 0.522), denomination (p value = 0.884), maternal age (p value = 0.854) and type of health providers from whom a woman accessed ANC (The p value = 0.157). The last factor implies that even other

cadres other than qualified health staff are equally capable of providing IPTp services. This finding supports the use of non qualified health personnel such as TBAs, CHA and CHW in providing some health services such as IPTp so as to cushion staff shortages as well as to supplement government efforts by the community.

Side effects of fansidar have been implicated as a factor influencing IPTp utilization. In this study, a few women reported to have had side effects after taking fansidar. Common side effects of fansidar mentioned by women include worsened nausea and vomiting, headaches as well as dizziness. However in this study experience of side effects of fansidar did influence completion of the recommended IPTp doses (p value = 0.623). This finding implies that despite some women experiencing some side effects of fansidar, they still went ahead and completed the remaining subsequent doses. This could be attributed to the perceived benefits and importance of taking fansidar during pregnancy. This finding supports the findings by Tutu et al¹², in which it was disproved that side effects of fansidar is one of the factors influencing IPTp service utilization. This finding is also in line with FGD findings in which most women expressed that they were willing to take fansidar despite the side effect associated with it.

Majority of the women (81.8%) perceived use of fansidar in pregnancy as being safe and only a few women (4.2%) thought it was not safe while 14.1% of women did not know whether it was safe or not. During focus group discussion most of the women expressed concern that fansidar tablets were too many and strong. Some said it made them feel sick and also feared that it could cause abortion. However most of the women were still willing to take fansidar despite side effects associated with it. This was attributed to the perceived benefits of taking fansidar during pregnancy. The finding during FGD that the tablets were too many and might cause abortion were in line with the study conducted by Moono¹³ in Mazabuka, Zambia in which it was found that one of the factors influencing IPTp utilization among adolescents in Mazabuka district were fears by women that fansidar might cause sickness and abortions.

Availability of fansidar was not factor influencing IPTp utilization. This was because only two out of eight HCs had stocks of fansidar during the year 2012. These were

Masese rural and Neongelo rural health centers which had periodic stock out fansidar for an average of two months. The stock out was attributed to an outbreak of malaria in the district which led to use of fansidar reserved for IPTp services. This finding is similar to that of Onaka et al¹⁴, in which it was found that availability of fansidar was not considered as an impediment to IPTp delivery in Nigeria. The findings are also in line with FGD in which no participant mentioned that they do not complete the recommended IPTp doses due to stock outs of fansidar at health centers.

In this study, most of the health providers expressed concern that they faced some challenges while providing IPT. The commonest challenges were lack of transport in health centers to enable health staff to reach women in very far and hard to reach areas so that even these women can access IPTp services. Other challenges of note included (1) inadequate resources in form of allowances to enable health staff to conduct outreach activities, (2) periodic stock out of fansidar and (3) misconceptions by some women that fansidar might cause abortion. The last finding that fansidar might cause abortion also agreed with FGD finding in which some women expressed concerns that fansidar might cause sickness and in some instances abortions.

CONCLUSION AND RECOMMENDATIONS

The current implementation of IPTp services provision falls short of ensuring that the district achieves the target of 80% coverage. The study highlights factors to be addressed in order to achieve the desired target. Therefore plausible interventions should be put up especially to improve knowledge levels of the community on the importance of IPTp services through mass sensitization, and information, education and counselling (IEC) to women during antenatal care services. Mass sensitisation will help address most of the factors and deficiencies influencing IPTp service utilization in the district; and the message should include importance of early ANC attendance, adherence to focused ANC schedules and importance of completing the recommended doses of IPTp. It will also dispel misconceptions about use of fansidar during pregnancy. Also Ministry of Community Development Mother and Child Health (MCDMCH)/

District Community Medical Office (DCMO) should address transport challenges and also improves on resource allocation to Health Centers for outreach activities in order to enable women in far and hard to reach areas to access IPTp services. And on a long term basis, MCDMCH and Ministry of Education should work hand in hand in order to promote girl child education which will in turn empower her with knowledge that would assist her make informed decisions that impact positively on her health.

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