

Factors Affecting Utilization of Intermittent Preventive Treatment of Malaria among Pregnant Mothers Attending Antenatal in Kabuyanda Health Centre IV-Isingiro District

Oyesigye Fred

Makerere University School of Public Health, Kampala- Uganda

Abstract:-

➤ Introduction

Intermittent preventive treatment with Sulphadoxine + Pyrimethamine is a strategy to prevent malaria in pregnancy (NMCP/M.O.H (2012) when Sulphadoxine + Pyrimethamine is administered to pregnant mothers in second and third trimesters. The study identified factors affecting utilization of IPTp among mothers attending antenatal services in Kabuyanda HCIV, which remained at 70% (Isingiro district Planning Unit 2017).

➤ Methods:

A cross sectional study was done. 323 Pregnant Mothers aged between 15-49 years attending antenatal care were sampled on exit, and interviewed. The association between the outcome variable was tested using chi-square (χ^2) and odds ratio, P-value \leq 0.05 was considered significant.

➤ Results:

Pregnant mothers between (26-43 years) were almost two times more likely to go for IPTp (OR=1.7, 95%CI=1.01-2.7, P value=0.04) than younger ones, while married women were twice more likely to go for IPTp compared to pregnant mothers not married (OR=2.3, 95% CI=1.05-5.2, P value=0.03), nevertheless pregnant mothers who ever heard of IPTp services were twice more likely to go for IPTp services compared to those who had no information about the service (OR=0.5, 95%CI=0.3-0.9, P value=0.03 and mothers who came to clinic and left without Sulphadoxine + Pyrimethamine were 3.3 times less likely to utilize services (OR=3.3, CI=1.9-5.8, P value=0.000). However, other factors like time spent and language used during service delivery were also mentioned for low utilization of IPTp services.

➤ Conclusion:

Utilization of IPTp-1, IPTp-2 and IPT-3 in Kabuyanda HCIV is low compared to National average, Age, Marital Status and Knowledge about the benefits of Sulphadoxine + Pyrimethamine as well as Missed

opportunities were significant factors influencing utilization of IPT services. Time spent and language used at the clinic during service delivery also greatly influenced utilization of Intermittent Preventive Treatment of malaria during pregnancy at Health Centre. However, more studies are needed to strut the findings in Kabuyanda HCIV-Isingiro South Health District –Isingiro district.

Keywords:- Antenatal, Sulphadoxine+Pyrimethamine, Malaria, Pregnancy.

I. INTRODUCTION

Intermittent Preventive Treatment with Sulphadoxine Pyrimethamine is a strategy of preventing malaria in pregnancy adopted worldwide (NMCP/M.O.H (2012), effective when Sulphadoxine+ Pyrimethamine is administered to pregnant mothers in second and third trimesters, and three doses for HIV positive mothers, not on ant- retroviral drugs or Cotrimoxazole prophylaxis. However, factors affecting utilization of services are unknown, because IPTp utilization remained at 37.9% in Uganda and 70% in Kabuyanda HCIV (USAID 2014) & (Isingiro district Planning Unit 2017) respectively, thus malaria becoming number one killer of pregnant mothers and their babies in the country, due to reduced immunity, increased anemia, premature deliveries, stillbirth, low birth weight and death of both the mother and infant.

Globally 200,000new born deaths are being registered annually as result of malaria in pregnancy (Charles I et,al 2008) where as in sub Saharan Africa there is declining use of intermittent preventive treatment and as a result 32 million pregnant mothers have evidence of malaria placental infection at delivery (WHO Review Report 2013)

In Uganda Malaria in pregnancy remains a serious health risk with increased Maternal anemia and prenatal mortality at 62.1% in all the districts, despite malaria control strategies like Intermittent Preventive Treatment , early diagnosis and treatment of Malaria aa well as Sleeping under

Insecticide treated mosquito Nets (<http://www.health.go.ug/mcp/mp.html>)

Kabuyanda Health Centre IV, one of the best health Centre IVs in Isingiro District of western Uganda, has a well-established maternity ward and antenatal care clinic, staffed with both government and millennium villages health workers. Intermittent preventive treatment remains stagnant at 70% since 2009 to date (Isingiro District Planning office 2017), factors responsible are not known, therefore the study identified factors affecting utilization of IPT services in Kabuyanda HCIV- Isingiro Health Sub District.

II. MATERIALS AND METHODS

We got approval from Makerere University School of Public Health and Ethics Committee and Uganda National Council of science and technology (NCST) to identify factors affecting utilization of Intermittent Preventive Treatment of Malaria among Pregnant mothers in Kabuyanda Health Centre IV-Isingiro District through interviewing pregnant mothers at the Health Centre

A cross sectional study was done in Kabuyanda HCIV, 323 pregnant mothers aged between 15-49 years, were interviewed, using semi structured questionnaires administered on Simple Systematic Sampling after attending antenatal care. Sample size was determined by $n = Z^2PQ/\delta^2$ formula used by Kish Leslie. Where n = sample size, Z= the standard normal deviate at 95% Confidence (1.96) P=Estimated prevalence of the problem under study, Q=100%-P or (1-P) =70% (IPT Prevalence in Kabuyanda HCIV), δ = the precision or Maximum acceptable error the investigator was to accommodate.

III. RESULTS

323 pregnant mothers attending antenatal care were interviewed. Majority of them (47.06%) were aged between 26-35years, (Mean age 26.18 ± 6.02 years), (82.35%), had completed Primary school and (87.93%) were married while 75.23% were peasants in communities, however (76.2%) respondents had knowledge about the use and benefits of Sulphadoxine + Pyrimethamine during pregnancy.

Variable	Unadjusted OR	Adjusted OR	95% CI	P value
Age 16-25 26-43	1.5	1.7	1.01-2.7	0.04**
Marital status Not married Married Divorced Separated	2.1 5.0 -	2.3 6.4	1.05-5.2 0.6-69.2 -	0.03** 0.12
Ever heard of IPT Yes No	0.68	0.5	0.3-0.9	0.03**
Ever left the clinic without Sulphadoxine + Pyrimethamine Yes No	3.3	3.3	1.9-5.8	0.000***

Table 1:- Factors affecting Utilization of IPT at bivariate and multivariate analysis among respondents
Factors that were significant at P=0.05, 0.01, 0.000, are represented by *, **, *** respectively.

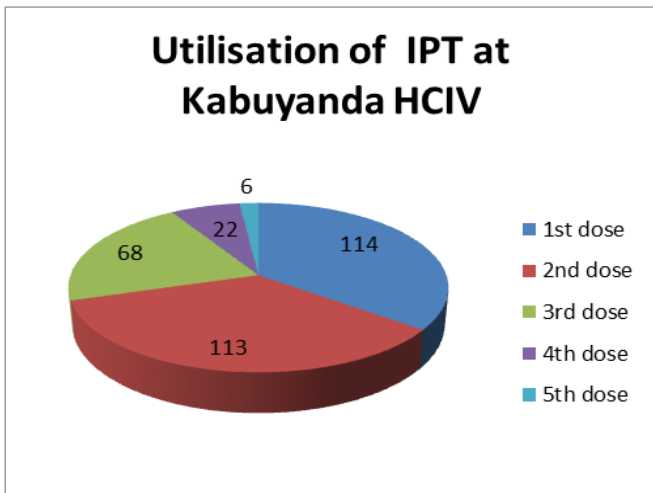


Fig 1

Age was factor affecting utilization of IPT services, because, pregnant mothers aged between (26-43) were two times more likely to go for antenatal and get IPTp services (OR=1.7, 95%CI=1.01-2.7, P value=0.04) than younger pregnant mothers. Another significant factor was marital status, Married women were twice more likely to go for IPTp services compared to unmarried ones (OR=2.3, 95% CI=1.05-5.2, P value=0.03), and mothers, who had ever heard of IPT services were twice more likely to go for IPTp compared to those who had no information about IPTp services (OR=0.5, 95%CI=0.3-0.9, P value=0.03 while pregnant mothers who came to the clinic and missed Sulphadoxine + Pyrimethamine were 3.3 times less likely to utilize the IPTp services (OR=3.3, CI=1.9-5.8, P value=0.000) and (34.98%) pregnant mothers received a second dose of SP compared to (35.29%) who received the first dose; this explains the clients knowledge about the benefits of IPT services and adherence of mothers to IPTp with Sulphadoxine + Pyrimethamine in Kabuyanda HCIV.

IV. DISCUSSIONS

Utilization of Intermittent preventive treatment appears to be low in Kabuyanda HCIV without hitting the national target. Factors affecting utilization of IPTp services seem to be uniform in all the respondents interviewed for Example Age, Majority of pregnant mothers (47.06%) were between 26-35 years (mean age 26.18±6.02 years), (91%) were married while 5.9% not married, all these factors influenced greatly the utilization of IPTp services and pregnant mothers knew the consequences of malaria in pregnancy (50.5%) and (5%) who did not. This agrees with the findings of Charles I et,al (2008) “Utilization of intermittent preventive treatment of malaria by pregnant mothers” Nigeria; Age and Marital status and Information influenced utilization greatly.

(35.29%) pregnant mothers received a first dose of Sulphadoxine + Pyrimethamine compared to (34.98%) & (21,00%) who received the second and third dose respectively; this explains the knowledge about the benefits of IPT because respondents who have ever heard of Intermittent Preventive Treatment and knew that Sulphadoxine + Pyrimethamine was the recommended drug were (76.2%) compared to (22.3%) who did not, and 66.3% indicated that services were good compared to (19.2%) fair. Majority knew at what age of Pregnancy, they are supposed to swallow (57.6%) Sulphadoxine + Pyrimethamine and 13.9% did not. Also Majority feared fatal effects of Malaria during pregnancy like abortion (50.5%) to (5.0 %) who feared getting low birth weight babies. These reasons indicate knowledge and adherence levels of mothers to intermittent preventive treatment with Sulphadoxine + Pyrimethamine, which agrees with findings of Abasattai et al (2008) “Awareness and practices of malaria prevention strategies among pregnant mothers in Nigeria” and WHO (2004) Knowledge Attitude and Practice, which observed that knowledge was the main factor affecting Utilization of health services.

Pregnant mothers who ever left the clinic without (38.4%) Sulphadoxine + Pyrimethamine were less likely to utilize the service compared to (61.6%) who got Sulphadoxine + Pyrimethamine during antenatal care. This discrepancy is explained by many of them, told to swallow Sulphadoxine + Pyrimethamine at home (99.4%) rather than at the clinic (0.6%) because of inadequate resources like Mugs and Boiled water to use (99.7%) which compromises Directly Observed Therapy at the Health Centre. Earlier studies with similar findings are (Onoka.C et al (2012) “hindrance of Utilization of intermittent preventive treatment in Primary health care units” Missed Opportunities, Lack of Resources and poor access to intermittent preventive treatment with Sulphadoxine + Pyrimethamine (Stella O.2009) “Assess Knowledge and Utilization of Intermittent Preventive Treatment, adherence and acceptability among Pregnant Mothers” Nigeria, poor adherence to Directly Observed Therapy (DOTS) was due to lack of resources and skills to administer Sulphadoxine + Pyrimethamine at places of work.

Respondents sighted hindering problems to intermittent preventive treatment services and suggested the following ways to Improve it, time management (60. 33%) and Communication to clients (25.62%) triage of clients (4.96%) recruitment of enough staff (4.13%) and providing more space for the services (1. 65%).This is, in line with responses on time spent at the clinic, because Majority spend 2-3hours (52.0%) compared to 1hour (18.9%). which agrees with Chamberlain. C. et al (2013) “on perception of intermittent preventive treatment and barriers of adherence in Peri –Urban and rural communities” Nigeria. He observed that time spent at the clinic and lack structural programs were factors affecting Utilization of IPT services.

However, the study was carried out under limited resources such as time and money, therefore it is important to do more similar studies since health seeking habits are influenced by many factors over time.

V. CONCLUSIONS

The study identified factors for effective utilization of Intermittent Preventive treatment services in Kabuyanda HCIV, and made the following conclusions:-

- IPTp-1, IPTp-2 and IPTp3 utilization in Kabuyanda HCIV is below the National target (35.29%,34.98% & 21,00% vs80%). Therefore, very low as previously reported (Uganda Mal Qly Bulletin 2014 MOH 2014)
- Pregnant mothers who are Aged Utilized Intermittent Preventive Treatment services in Kabuyanda HCIV during antenatal than younger ones
- Married Pregnant mothers utilized Intermittent Preventive Treatment services in Kabuyanda HCIV than those who were either not married or divorced
- Pregnant mothers who ever heard about malaria and IPTp services utilized the services more than those who had no knowledge about the benefits of Sulphadoxine + Pyrimethamine during pregnancy
- Pregnant mothers who ever left the antenatal clinic without swallowing Sulphadoxine + Pyrimethamine (missed opportunity) were less likely to return for the next visit
- Time spent by clients to get services and language used at the clinic greatly influenced Intermittent Preventive treatment utilization at Health Centre
- Therefore, addressing the following factors, the researcher is optimistic that Intermittent Preventive treatment services will improve and hit the national target.
- The Health Centre IV Managers strengthen health education programs with focus on the benefits of Intermittent Preventive treatment during antenatal care and intensify community sensitization all over.
- The District Health Office and Health Sub District design and buttress continuous medical trainings about management of health services while addressing time spent by clients to get services, triage and arrangement of the clinic and foster proper communication between staff and clients during antenatal care.
- The Health Sub District managers strengthen planning on Directly Observed Therapy and procure required resources for Intermittent Preventive treatment services for example Sulphadoxine + Pyrimethamine, Mugs and Jerry cans for boiled water to avoid missed opportunities that compromise compliance due to stock outs of drugs and resources
- The researcher recommends and calls other researchers for larger studies to further strengthen the Findings of this Study.

ACKNOWLEDGEMENTS:

Special thanks go Dr.Simon Kasasa for technical guidance on completion of this manuscript . Am also grateful for the assistance and contributions of Isingiro district and Kabuyanda HCIV Staff in carrying out this research. Finally, I thank Research assistants who helped me, in data collection and respondents who spent their valuable time during the interview.

- *Competing interests:* The author declare no competing interest.
- *Author's contributions:* Oyesigye Fred was for conceptualization, design, collection of data, statistical analysis and drafting of the paper while Simon Kasasa for integrity, accuracy & analysis of data. All authors have agreed to the final Research paper.

REFERENCES

- [1]. Adam I: et al (2006) Artesunate plus sulfadoxine-pyrimethamine in the treatment of uncomplicated plasmodium falciparum malaria during pregnancy in Eastern Sudan
- [2]. Akinleye.S et al(2009) Knowledge and utilization of intermittent preventive treatment of malaria among pregnant women attending antenatal clinics in primary health care centers in rural south west. Nigeria
- [3]. Campbell.P et al (2006) A randomized trial comparing the efficacy of four treatment regimens for uncomplicated falciparum malaria in Assam India
- [4]. Greenwood.B (2008) Control to elimination: implication for malaria research trends: Parasitol
- [5]. Jima.D.et al (2005) Efficacy of sulfadoxine-pyrimethamine for the treatment of uncomplicated falciparum malaria in Ethiopia Kweku M et al (2008) Seasonal intermittent preventive treatment for the prevention of anaemia and malaria in Ghanaian children: a randomized placebo controlled trial:Ghana
- [6]. Makerere School of Public Health (2013) Master of Public Health Distance program Hand book: Kampala
- [7]. Mbonye A.K (2007) et al(Intermittent preventive treatment of malaria in pregnancy: a new delivery system and its effect on maternal health and pregnancy outcomes in Uganda
- [8]. Ndyomugenyi.R and Katamanywa.J. 2010 Intermittent Preventive treatment of Malaria in pregnancy (IPT): do frequent antenatal care visits ensure access and compliance to Uganda rural communities? Transactions of the royal Society of Tropical Medicine and hygiene, 104,536-540
- [9]. National Institute of Health(2006) Efficacy of intermittent sulfadoxine- pyrimethamine and sulfadoxine- pyrimethamine+ artesunate treatment in the prevention of resistant plasmodium falciparum: USA malaria in areas with chloroquine

- [10]. Onoka.C et al(2012) Low Coverage of intermintent preventive treatment for malaria in pregnancy in Nigeria: Demand side influences
- [11]. Onwujekwe.O. et al 2012 Patterns of case management and chemoprevention for malaria in pregnancy by public and private sector health providers in Enugu state, Nigeria 17
- [12]. Serem . (2010). "Effectiveness of intermittent preventive treatment with sulphadoxine pyrimethamine and insecticide treated nets on the prevention of malaria in pregnancy in non-malarial endemic area.
- [13]. Sokhna.C etal (2009) A trial of the efficacy, safety and impact on drug resistance of four drug regimens for seasonal intermittent preventive treatment for malaria in Senegalese children: senegal
- [14]. Tine, R. C., et al. (2011) Impact of combining intermittent preventive treatment with home management of malaria in children less than 10 years in a rural area of Senegal
- [15]. Tope. O, et al (2007) Comparative study of the efficacy of pyrimethamine chemoprophylaxis and intermittent preventive treatment using sulphadoxine-pyrimethamine in the prevention of malaria in pregnancy in southwest Nigeria.
- [16]. Udonwa .N et al (2010) Malaria knowledge and prevention practices among school adolescents in a coastal community : Nigeria
- [17]. Yusuf (2010) Effect of intermittent preventive treatment (IPTp) using sulphadoxine pyrimethamine (SP) on birth weight Lindi region (Muhirimbiri, University of Health and Allied Sciences).
- [18]. WHO (2010) Guidelines for treatment of malaria 2nd edition: Geneva
- [19]. Zurovac.D et al (2005) Treatment of paediatric malaria during a period of drug transition to artemether-lumefatrine : Zambia