

HEALTH PROMOTION AND MALARIA CONTROL AMONG PREGNANT WOMEN IN

OWERRI MUNICIPAL

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Abstract

This study examined health promotion and malaria control among pregnant women in Owerri municipal in Imo State. Five objectives were formulated.

A descriptive survey research was adopted and a simple random sampling was used to enroll a sample of 150 pregnant women from the Federal Medical Center and General Hospital Owerri. A self structured, validated and reliable questionnaire ($r = 0.70$) was used as the instrument for data collection. Descriptive statistic was used for data analysis. Result showed that significant number of the pregnant women 138 (92%) know that mosquito bites transmit malaria parasite and only 81(54%) have access to insecticide treated bed nets (ITN). Out of the 81(54%) only 54 (66.7%) sleep under the net. Those given intermittent Preventive treatment (IPT) with antimalaria drugs were 120 (80%) and majority 81(54%) and 33 (22%) respectively reported that their residential environment was not bushy and water not stored in empty receptacles. Based on (his it was recommended that NGOs and Government should regularly provide hospitals with insecticide treated bed nets to encourage health promotion and prevention of malaria.

Introduction

Health promotion has evolved into an extremely broad sphere of activity encompassing health education, lifestyle and preventive approaches along side environmental, legal, policy and fiscal measures designed to advance health (Scriven and Ormc, 2001). Further more, the authors opined that health promotion is considered a militant wing of public health. In order words health promotion involves changing of lifestyles, risk reduction and prevention of diseases.

Malaria is a protozoan disease caused by the parasite *Plasmodium falciparum* and transmitted by the bite of female anopheles mosquitoes (Gupta and Ghai, 2007). Malaria is still highly prevalent in many tropical countries and this disease can only survive in areas where mosquitoes and infected population are high (Ogbeide & Wagbatsoma, 1995). Malaria infection during pregnancy is a major public health problem in tropical and subtropical regions throughout the world (Roll Back Malaria Partnership, 2008). In most endemic areas of the world, pregnant women are the main adult risk group for malaria (World Health Organization (WHO), 1998). The author further noted that malaria during pregnancy has been most widely evaluated in Africa, South of the Sahara where 90% of the global malaria burden occurs. The burden of malaria in pregnancy is chiefly caused by *Plasmodium falciparum*, the most common malaria specie in Africa (WHO, 1998). Every year at least 30 million pregnancies occur among women in malarious areas of Africa, most of who reside in areas of relatively stable malaria transmission (WHO, 1998).

WHO (1998) observed that the symptoms and complications of malaria during pregnancy differ with the intensity of malaria transmission and thus, with the level of immunity the pregnant woman has acquired. While these settings are presented as two distinct epidemiologic conditions, in reality, the intensity of transmission and immunity in pregnant women occur on a continuum, with potential diverse conditions occurring within a country. In areas of low (unstable) malaria transmission, adult women have not acquired any significant level of immunity and usually become ill when infected with *Plasmodium falciparum* malaria. Pregnant women resident in areas of low or unstable malaria transmission are at a two-or threefold higher risk of developing severe disease as a result of malaria infection than are non-pregnant adults living in the same area. In these areas maternal death may result either directly from severe malaria or indirectly from malaria-related severe anaemia. In addition, malaria infection of the mother may result in a range of adverse pregnancy outcomes, including spontaneous abortion, foetal loss, maternal anaemia, intrauterine growth retardation, premature delivery and delivery of low birth weight babies (LBW) (Centers for Disease Control and Prevention, 2004).

In areas of high and moderate (stable) malaria transmission, most adult women have developed enough immunity that, even during pregnancy, *Plasmodium falciparum* infection does not usually result in fever or other clinical symptoms. In these areas, the principal impact of malaria infection is associated with malaria-related anaemia in the mother and with the presence of parasites in placenta (WHO, 1998). The resultant impairment of foetal nutrition contributing to low birth weight is a leading cause of poor infant survival and development. In areas of Africa with stable malaria transmission, *Plasmodium falciparum* infection during pregnancy is estimated to cause as many as 10,000 maternal deaths each year, 8% to 14% of all low birth weight babies, and 3% to 8% of all infant deaths (WHO, 1998).

Despite the toll that malaria exacts on pregnant women and their infants, until recently, this was a

relatively neglected problem, with less than 5% of pregnant women having access to effective interventions. The promising news is that during the past decade, potentially more effective strategies for the prevention and control of malaria in pregnancy have been developed and demonstrated to have a remarkable impact on improving the health of mothers and infants. Malaria prevention and control during pregnancy has a three-pronged approach: intermittent preventive treatment with antimalaria drugs; insecticide treated bed nets (ITN); and febrile malaria case management (Centers for Disease Control and Prevention, 2004).

The fact that in most African countries, over 70% of pregnant women make multiple antenatal clinic visits provides a major opportunity for prevention of malaria, along with other priority diseases affecting pregnant women. In areas of stable *Plasmodium falciparum* transmission, prevention of asymptomatic malaria infection through a two-pronged approach of Intermittent Preventive Treatment (IPT) and Insecticide Treated Nets (ITNs) will result in the greatest health benefits.

Intermittent Preventive Treatment (IPT) involves providing all pregnant women with at least two preventive treatment doses of an effective antimalarial drug during routine antenatal clinic visits. This approach has been shown to be safe, inexpensive and effective. A study in Malawi evaluating IPT showed a decline in placental infection (32% to 23%) and in the number of low birth weight babies (23% to 10%). It also found that 75% of all pregnant women took advantage of IPT when offered. Adeneye, Jegede, Mafe and Nwokocha (2008) in their study to evaluate malaria control strategies in Ogun State, it was noted that 8 (23.5%) out of the 34 pregnant women interviewed knew about the intermittent preventive treatment for malaria. Two out of the 8 (25.0%) had received the IPT.

Insecticide-Treated Nets (ITNs) decrease both the number of malaria cases and malaria death rates in pregnant women and their children. A study in an area of high malarial transmission in Kenya has shown that women protected by ITNs every night during their first four pregnancies produced 25% fewer underweight or premature babies. In addition, ITNs should be provided to pregnant women as early in pregnancy as possible, and their use should be encouraged for women throughout pregnancy and during the postpartum period.

In areas of unstable *Plasmodium falciparum* transmission, non-immune pregnant women exposed to malaria require prompt case management of febrile illness. Essential elements of the antenatal care package should, therefore, include malaria diagnosis, where available and needed, and treatment with antimalaria drugs that have an adequate safety and efficacy profile for use in pregnancy.

Roll Back malaria, in partnership with making pregnancy safer, has brought a new emphasis to the burden of malaria in pregnant women within malaria control efforts. However, there are obstacles to implementing effective programmes and reaching women who will benefit the most from them, particularly high risk adolescents in their first pregnancies. Many women in Africa lack access to medical care and may have limited access to effective tools such as ITNs, especially in remote areas. Delivery of cost-effective malaria prevention to pregnant women will require:

Increased awareness of the problem among communities most affected by malaria; integration of malaria control tools with other health programmes targeted at pregnant women and newborns; strengthened antenatal care systems and involvement of traditional birth attendants where they are part of health service delivery and financial investment.

Considering the information above, this study specifically sought to: ascertain the pregnant women's knowledge of the cause of malaria in Owerri Municipal; find out if the women have access to insecticide treated bed nets; determine whether the women sleep under insecticide treated bed nets; determine whether the women are given Intermittent Preventive Treatment (IPT) in the course of their pregnancy and also determine the health Workers role in health promotion.

The result of this study provides health workers and policy makers in Owerri municipal health sector with reliable data to work with, and the result gathered will be of immense help in the mobilization and control strategies required to improve on the prevailing health problem.

Methods and Materials

The descriptive survey design was considered appropriate for the study. The setting for this study is Federal Medical Center Owerri (FMC) and General Hospital Owerri (GHO) in Imo State. Owerri Municipal has all the characteristics and features of an urban setting. The population of the study is made up of 750 pregnant women in the two hospitals. Sample size was calculated using Nwana (1981) formula, which says that 40% sample is appropriate when the population runs in few hundreds. A minimum sample size of 150 pregnant women drawn from the two hospitals was therefore considered adequate for the study. These pregnant women were randomly and proportionally selected from the population frame (124 from 620 pregnant women from FMC and 26 from 130 pregnant women from GHO). The sample size was upgraded to 160 to accommodate sampling error.

A self structured and validated questionnaire based on the set objectives with 12 test items for pregnant women and 5 test items for health workers was used as the instrument for the study. A reliability test was carried out using 10 pregnant women and 10 health workers who were not part of the main study. A test re-test reliability co-efficient index of $r = 0.70$ was got indicating reliability of the study instrument. After authorization from the hospitals management, the instrument was administered and collected in the two hospitals on the scheduled dates. Ten copies of the questionnaire were wrongly filled and were not used. Data were manually tallied and analysed in frequency and percentages.

Table 1: Analysis of Sampled Data on Dependent Variables

S/N	Dependent Variables	F %	SN	Dependent Variables	F %
1	Causes of malaria in pregnancy		9	Residential Environment	
a	Mosquito bites	138 (92)	a	Bush around the house	30 (20)
b	Low immunity of mother	6(4)	b	No bush around house	81 (54)
c	Excess fat in the body	0(0)	c	Water in empty cans/pots	6(4)
d	No idea	6(4)	d	Non in empty cans/pots	33 (22)
	Total	100 (100)		Total	150(100)
2	Access to ITNs		10	Gutter around house	
a	Yes	81(54)	a	Yes	69 (46)
b	No	69 (46)	b	No	81 (54)
	Total	150 (100)		Total	150 (100)
3	If no, why?		11	Nature of the gutter	
a	Government did not provide	39 (56.5)	a	Allow free flow of water	36 (52.2)
b	No idea where to get ITN	25 (36.2)	b	Retains water	6(8.7)
c	No money	5(7.3)	c	Attracts insects	9(13.0)
	Total	69(100)	d	Very clean	18 (26.1)
4	Sleeping under ITN			Total	69 (100)
	Yes	54 (66.7)	12	How often the gutter is cleaned	
	No	27 (33.3)	a	Every week	12(17.4)
	Total	81(100)	b	Once a week	27 (39.1)
5	If no why?		c	Once a month	24 (34.8)
	Heat	15 (55.6)	d	Once in 3 months	6 (8.7)
	Gave her own to her kids	2 (7.4)		Total	69 (100)
	No reason	10 (37)		Health Workers	

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	Total	27 (100)	13	Does the hospital supply ITNs to clients?	
6	How often they sleep under ITN			Yes	
a	Every night	33 (61.1)		No	10(100)
b	Every time I want to sleep	18(33.3)	14	Why no?	
c	Do not sleep under the net	0(0)		Gave only supply from RBM team on visitation.	10(100)
d	Only in cool weather	3 (5.6)	15	Use of IPT (a) Yes	10(100)
	Total	54 (100)	b	'No	0 (0%)
7	Those given intermittent Preventive treatment		16	Management of febrile malaria cases	
	Yes	120 (80)	a	Tepid sponging	
	No	30 (20)	b	Health promotion on malaria control (c) use of prescribed drugs	
8	If no, age of pregnancy		d	All of the above	10(100)
	1- 3months	12(40)	17	Health promotion at ANC	
	4- 6 months	6 (20)	a	Use of ITN (b) use IPT	
	7- 9 months	12(40)	c	Keep appointment	
	No idea	0(0)	d	Keep environment clean	
	Total	30 (100)	e	All of the above	10(100)

Out of 150 pregnant women sampled, 138(92%) agreed that mosquito bites cause malaria, while 6(4%) pregnant women said that malaria is caused by low immunity of the pregnant mother and excess fat in the body. The opinion of the 138(92%) respondents was confirmed by Gupta and Ghai (2007) who noted that the malaria parasite plasmodium is transmitted by the bites of the female anopheles mosquitoes. Majority, 81(54%) accepted having access to insecticide treated bed nets while a significant number 69(46%) had no access to insecticide treated bed nets.

On reasons why they had no access to ITNs, 39(56.5%) said government did not provide them with any, 25(36.2%) had no idea of where to get ITNs and 5(7.3%) said they had no money. These were those who were not registered as at the time the ITNs were provided by the Roll Back Malaria team. Out

of the 81(54%) that had access to the ITNs, 54(66.7%) sleep under the ITN while 27(33.3%) do not sleep under the ITN. On the reasons why they do not sleep under the ITN, 15(55.6%) complained of heat, 10(37%) had no reason, while 2(7.4%) gave their own nets to their kids.

This shows that enough ITNs are not provided especially to the vulnerable groups (Children and Pregnant mothers) and health promotion professionals have a role to play. This supports the view of WHO (1998) which stated that less than 5% of pregnant women have access to effective intervention and that women in Africa lack access to medical care and may have limited access to effective tools such as ITNs, especially in rural areas. Out of the 54(66.7%) that were sleeping under the net, majority 33(61.1%) reported sleeping under the net every night, 18(33.3%) sleep under the net any time they want to sleep, while 3(5.6%) use the net only when the weather is cool. This shows that the use of ITNs alone for prevention and control of malaria would not be effective.

On Intermittent Preventive Treatment while pregnant, 120(80%) had received their IPT, while 30(20%) had not. On trying to get the gestational age of those who had not received their IPT, 12(40%) respectively were in their first trimester, 1-3 months and third trimester, 7-9 months while 6(20%) were 4-6 months pregnant. Those who have not received IPT could be attributed to late registration for antenatal care, and/or defaulting on regular attendance to antenatal care.

Question on the nature of residential environment revealed that 81(54%) had no bush around their houses, 30(20%) had bush around their houses, 33(22%) had no empty cans/pots with water around their houses while 6(4%) agreed that there were empty cans/pots retaining water around their houses. When asked if they have gutters around the house, 69(46%) said yes while 81(54%) said no. In response to the nature of the gutter, 36(52.2%) out of the 69(46%) who agreed that they have gutter around the house said that water flows freely in theirs, 18(26.1%) said they have very clean gutter, 9(13%) reported that their gutter attracts insects while 6(8.7%) agreed that their gutter retains water. On how often they clean the gutter, 27(39.1%) said once every week, 24(34.8%) said once every month, 12(17.4%) cleaned theirs once every day while 6(8.7%) cleaned their gutter once in three months. The information on the nature of the environment is also important on prevention and control of malaria as neat environment will go a long way to reduce the breeding sites for mosquitoes. Thus, health professionals should lay emphasis on the impact of filthy environment which will encourage health promotion.

The health workers 10(100%) revealed that the hospital does not supply ITNs, but distributed to their clients the ITNs supplied by the Roll Back Malaria team that visited the hospitals. On whether they give intermittent preventive treatment during the course of pregnancy, the 10(100%) health workers said yes. Also the health workers 10(100%) agreed that they treat febrile malaria cases by tepid sponging; giving health promotion advice on prevention and control of malaria; carrying out investigations and giving malarial drugs as prescribed by the doctor. On what they teach the clients during antenatal care to promote their health, 10(100%) of the health workers agreed that they advice them to always sleep under the ITNs; keep their environment clean; take the IPT and their routine drugs as prescribed by the doctor and to keep their appointments.

Conclusion

Health promotion is very vital to prevention and control of malaria among pregnant women. The delivery of cost-effective malaria prevention among pregnant women in Owerri Municipal requires increased awareness of the problem caused by malaria. The Government, Non Governmental Organizations and Hospitals Management should strengthen antenatal care systems by regular provision of ITNs and drugs needed for malaria control. The importance of health promotion should be emphasized by health workers using malaria control tools.

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