

East African Medical Journal Vol. 83 No. 8 August 2006

ROLE OF CHILD HEALTH CLINICS IN PROMOTING USE OF INSECTICIDE-TREATED NETS AMONG CHILDREN UNDER FIVE YEARS IN NYAMIRA, DISTRICT, KENYA

J.S.O. Osero, BEd, MPHE, M.F. Otiemo, PhD, Senior Lecturer and A.S.S. Orago, PhD, Department of Health Sciences, Kenyatta University, P.O. Box 43844, Nairobi, Kenya

Request for reprints to: Mr. J.S.O. Osero, P.O. Box 241, Nyamira, Kenya

ROLE OF CHILD HEALTH CLINICS IN PROMOTING USE OF INSECTICIDE-TREATED NETS AMONG CHILDREN UNDER FIVE YEARS IN NYAMIRA, DISTRICT, KENYA

J.S.O. OSERO, M.F. OTIEMO and A.S.S. ORAGO

ABSTRACT

Background: Maternal child health clinics are the ideal places to meet and sensitise all the mothers with children under five years on the use of insecticide-treated nets in the prevention of malaria.

Objective: To determine whether child health clinics are promoting the use of insecticide-treated nets in malaria prevention among children.

Design: Cross-sectional, descriptive study.

Setting: Eight health centres in Nyamira District.

Subjects: Four hundred mothers bringing their children aged five years and below to the child health clinics between August and October 2003.

Results: Two hundred and eighty four mothers (71%) had not received any information on the use of insecticide-treated nets while at the MCH clinics. Only 50% of the clinics had bed nets/ITNs posters mounted on their premises. Out of those clinics with posters, only in 50% of them had bed net posters seen. Very few mothers (36.2%) had seen the bed net/ITNs posters. None of the healthcare providers used bed net/ITNs posters to educate the mothers. None of the insecticide-treated net leaflets were issued.

Conclusion: Despite the fact that maternal child health clinics were well placed in promoting the use of insecticide-treated nets to the mothers who brought their under five year children, very little was being done to this effect. MCH clinics need to be more aggressive in motivating mothers to use insecticide-treated nets.

INTRODUCTION

Promotion of the use of insecticide-treated nets (ITNs) in malaria prevention is an essential element of health promotion. Health promotion is a process of enabling people to increase control over and to improve their health (1,2). Health education becomes the main method of informing people on how to positively change their behaviour so as to prevent specific diseases and improve health. Health promotion action therefore can significantly

contribute towards prevention of priority communicable diseases such as malaria, HI V/ AIDS and tuberculosis (3).

Healthcare settings are among other settings for health promotion where promotion of the use of ITNs in malaria prevention is essential. A health promoting hospital does not only provide high quality comprehensive medical and nursing services but also develops a corporate identity that embraces the aims of health promotion, develops a health promoting organizational structure and culture,

including active participatory role for patients and all members of staff, develops itself into health promoting physical and actively co-operates with its community (4). However healthcare settings are not necessarily conducive to promote health due to long waiting lists, occupational stress among staff, and inadequate integration of health promotion and public health in service delivery creating unhealthful conditions (5).

Globally it is estimated that there are 300-500 million malaria clinical cases with 1.5-2.7 million deaths annually with countries in sub-Saharan Africa accounting more than 90% (6). Malaria is Africa's leading cause of under five mortality and constitute 10% of the continents' overall disease burden (7). It is estimated that 3.5 million children are aged below five years and 34,000 of them die each year (93 children die each day) from direct consequences of malaria infections (8). Although progress and promotion of ITNs is being done, in the year 2003 less than 5% of the African children slept under insecticide-treated nets and less than 15% slept under any net at all (9). Pricing of ITNs would be the principle obstacle to their use (10-12). However, studies show that most communities are able to afford at least one net (13,14). Women are more inclined than men to want to buy permethrin impregnated bed nets (PIBs) but are unable due to their low income (15).

This study was designed to assess the role of child health clinics in promoting and passing information to mothers on the use of ITNs in the prevention of malaria among children. Its aim was to determine the proportion of child health clinics promoting the use of ITNs and through which methods they are doing it. It also aimed at determining the proportion of mothers who receive information through these promotions.

MATERIALS AND METHODS

This was a cross sectional descriptive study, whose study population comprised of mothers bringing their children aged under five years to the child health clinics. Purposive sampling was used to identify the four study divisions in the district (Nyamira, Ekerenyo, Nyamaiya and Borabu

divisions) and all the eight government health centres from the areas were included in the study. Probability proportion to size was used to determine the number of samples included in the study from each division and health centre. Simple random sampling was then used to select the mothers who participated in the study each day from the mothers who brought their under five year children to the child health clinics.

Primary data were collected from respondents through personal interviews using an interview guide. Additional qualitative data were obtained through observations and Focus Group Discussions (FGDs). Data were analysed by use of SPSS computer package and the results were presented in descriptive and inferential methods.

RESULTS

Socio-demographic characteristics of study population: Four hundred mothers were interviewed. About 60% were in the age bracket of 21-30 years. Eighty four point three percent were married and 56.5% had one child under five years.

Majority of the mothers (56.8%) had primary level of education and only 4.3% had post secondary level of education. A large proportion of mothers (53.3%) were housewives (Table 1).

Maternal receipt of information while at MCH clinics: Two hundred and eighty four mothers (71%) had not received any information on the use of ITNs while at the MCH clinic. Some mothers (0.8%) received information through other people such as female friends (Table 2).

Availability, position and use of bed net/ITNs posters at the MCH clinics: The study showed that only 50% of the clinics had bed nets/ITNs posters mounted on their premises. Out of those clinics with bed nets/ITNs posters, bed nets/ITNs posters would only be seen in only 50% of them. Seeing bed nets/ITNs posters was significantly related with the possession of ITNs ($\chi^2 = 7.995$, $df = 2$; $p = 0.018$). None of the MCH clinics issued leaflets on ITNs to mothers and also none of the clinics had television and malaria advocacy videos (Table 3).

Table 1*Distribution of all subjects according to selected socio-demographic characteristics of study population (n = 400)*

| Characteristic | No. of subjects | (%) |
|---|-----------------|------|
| Ages (years) | | |
| <20 | 108 | 27.0 |
| 21-30 | 241 | 60.3 |
| 31-40 | 50 | 12.5 |
| ≥41 | 1 | 0.3 |
| Marital status | | |
| Married | 337 | 84.3 |
| Single | 49 | 12.3 |
| Separated | 14 | 3.5 |
| No. of children under five years | | |
| 1 | 226 | 56.5 |
| 2 | 143 | 35.8 |
| 3 | 29 | 7.3 |
| 4 | 2 | 0.5 |
| Level of education | | |
| None | 7 | 1.8 |
| Primary | 227 | 56.8 |
| Secondary | 149 | 37.3 |
| Post-secondary | 17 | 4.3 |
| Occupation | | |
| Skilled worker | 16 | 4.0 |
| Unskilled worker | 37 | 9.3 |
| Peasant farmer | 105 | 26.3 |
| Housewife | 213 | 53.3 |
| None | 29 | 7.3 |

Table 2*Distribution of mothers according to the methods through which they received information on use of ITNs while at MCH clinics (n = 400)*

| Characteristic | Frequency | (%) |
|-----------------------|-----------|------|
| None | 284 | 71 |
| Open lectures | 98 | 24.5 |
| Individually by nurse | 15 | 3.5 |
| Friends | 3 | 0.8 |

Table 3

Availability, position and use of bed nets/ ITNs posters at the various MCH clinics (n = 8)

| Child health clinic | Availability | | | Use by healthcare providers | Easily seen | Not easily seen |
|---------------------|--------------|---------|------|-----------------------------|-------------|-----------------|
| | Inside | Outside | None | | | |
| Nyamira | ✓ | ✓ | ✗ | ✗ | ✗ | ✓ |
| Tinga | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ |
| Ekerenyo | ✓ | ✓ | ✗ | ✗ | ✓ | ✗ |
| Amatierio | ✓ | ✓ | ✗ | ✗ | ✗ | ✓ |
| Ogango | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ |
| Nyamaiya | ✓ | ✓ | ✗ | ✗ | ✓ | ✗ |
| Chepng'ombe | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ |
| Isoge | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ |

✓ = Availability/use/easily seen. ✗ = Unavailability/non-use/not easily seen.

DISCUSSION

Maternal child health (MCH) clinics played a lesser role in promoting use of ITNs on children under five years of age. The study showed that only 28% of women had gotten the information on the use of ITNs while at the MCH clinics. The information was mostly communicated during the open lectures which were conducted only once in a week and at exactly 20:00 hours in the morning in all clinics. That meant that only those who came on that day and at exactly 20:00 hours benefited from the lecture. Majority of the women came late, therefore only a very small fraction of mothers benefited from the whole lecture. Furthermore, the issue of ITNs was not raised every week as each week had its own topic to be handled. Some MCH clinics did not conduct any teaching sessions at all. In most MCH clinics, nurses/health care providers came late when mothers were already tired and then rushed into their usual duties.

It was only 3.8% of the mothers who confessed to have heard individual messages on the use of bed nets/ITNs from the nurses. From the discussion during the interview, mothers were harassed and healthcare providers did not care about the mothers' problems, blaming them on their ignorance, lack of information and education. For example in an interview a mother said:

"Sisters (nurses) harass us so much and abuse us of illiteracy and look down upon us."

It is therefore necessary that the health care providers lead in the campaign against malaria not only by providing treatment and other MCH services but also by promoting the use of ITNs.

Information, education, communication of malaria vector control strategies such as use of ITNs should be done through malaria posters, leaflets, private sector malaria messages, malaria advocacy videos, school health programmes, calendars, NGO developments, radio messages, and the media (11) among others. The study showed that only 50% of the clinics had posters communicating bed nets/ITNs uses for children and pregnant mothers. Most of those posters were not positioned in strategic places to be read by mothers while waiting to be attended to and during the services. Most of them were hidden and not clear.

The study showed that the healthcare providers did not use bed nets/ITNs posters to inform/teach the mothers on uses of bed nets/ITNs. This meant that majority of the women were ignorant, some did not know how to read and hence would not identify the posters, or imagine of their use. Majority of mothers (63.8%) who attended the MCH clinics had never seen bed nets/ITNs posters. This was

attributed to reasons including: lack of posters, poor positioning of posters and others did not know how to read making it difficult to identify the posters. Seeing bed nets/ITNs posters was significantly related to possession of insecticide-treated nets.

In conclusion, healthcare providers at the MCH should lead in the campaign against malaria, not only by providing treatment and other MCH services but also by promoting effective vector control measures such as use of ITNs. MCH clinics should promote the use of bed nets/ITNs through leaflets and posters, which should be accurately positioned and health care providers use them while serving the mothers as instructional aids. There should be a focus on providing sustained subsidies targeted to the most vulnerable groups preferably through postnatal and antenatal (MCH) clinics for delivery of subsidies. There should be improved supervision and management of the health care facilities including the MCH clinics by those in charge. The MCH clinics health care providers should be retrained on how to handle their clients through seminars and conferences

ACKNOWLEDGEMENTS

To the Ministry of Research, Science and Technology for permission to carry out the study and the Ministry of Health, Nyamira District, for introducing us to the Health facilities in the district. The contributions of Mr. J. Bosire (District Public Health Officer) and Clement Manyulu (Disease Surveillance Officer) were valuable.

REFERENCES

1. WHO. Health promotion glossary. *WHO/HPR/HEP/98.1*. Geneva, Switzerland. 1998.
2. WHO. Ottawa charter for health promotion. *WHO/HPR/HEP/95.1*. Geneva, Switzerland. 1986.
3. WHO Health promotion: A strategy for the Africa Region. *WHO regional office for Africa*, Brazzaville 2003.
4. WHO. Budapest declaration on health promotion health hospital. *WHO for Europe*, Copenhagen 1991.
5. WHO. New players for a new era; leading health promotion into the 21st century. *Geneva, Switzerland* 1998.
6. WHO. Malaria: A re-emerging disease in Africa. In: Report of a WHO study group technical report, 1998; 857: 1-91.
7. WHO. The Gambia steps up fight against malaria. *Newsletter vol.2, issue 1, Geneva, Switzerland*. 2002.
8. United Nations. Kenya: Government announces new policy on malaria treatment. *United Nations office for the coordination of humanitarian affairs*. Nairobi, Kenya. 2004.
9. WHO/UNICEF. Malaria is alive and well killing 300 African children everyday. *MCC design, Oxford, UK* 2003.
10. Aikins M.K., Pickering H., Alonso P.L., et al. A malaria control trial using insecticide-treated bed nets and targeted chemoprophylaxis in a rural area of the Gambia, West Africa 4. Perceptions of the causes of malaria, and of its treatment and prevention in the study area. *Trans. R. Soc. Trop. Med. Hyg.* 1993; **87**: 25-52.
11. Makemba A.M., Winch P.J., Kamazima S.R., et al. Community based sell, distribution and insecticide impregnation of mosquito nets in Bagamoyo District, Tanzania. *Hlth. policy and planning*, 1995; **10**: 50-59.
12. Stephen C., Masamu E.T., Kiama M.G., et al. Knowledge of mosquitoes in relation to the public and domestic control activities in the cities of Dar es Salaam and Tanga. *Bull. WHO.* 1995; **73**: 97-104.
13. Muthami L.N., Kingori F. and Karama M. Coverage, usage and affordability of insecticide-treated nets in Kenya. *21st Afr. Hlth. Sci. Congress*. 24-28 April, Nairobi, Kenya. 1999.
14. Onwujekwe O.E. Are insecticide-treated nets affordable? Relating costs of two sizes of nets and net re-treatments with basic household expenditures. *Trans. Royal Soc. Trop. Med. & Hyg.* 1999; **93**: 468-469.
15. Rashed S., Johnson H., Dongier P., et al. Determinants of the permethrin impregnated bed nets (PIBs) in the Republic of Benin: The role of women in the acquisition and utilisation of PIBs. *Social Sci. & Med.* 1999; **49**: 993-1005.
16. Republic of Kenya. National malaria strategy, 2001-2010: Division of malaria control. *Ministry of Health, Nairobi, Kenya*. 2001.