

Original Article**Assessment of Bed Nets Coverage among Children under Five at the Greater Wad Madani Locality, Gezira State, 2005****Hatim Sid Ahmed FCM**

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Abstract**Background:** Insecticide treated nets is one of the key strategies to control malaria especially among children under five. The Abuja target aimed at reaching 60% coverage by the year 2005.**Methods:** In collaboration with Poliomyelitis-campaign assessment mechanism. A cross-sectional survey was done at Wad Madani locality to assess the bed nets coverage among children under five years of age**Results:** A total of 359 (31.2%) children out of 1152 surveyed had mosquito nets, however only 85 (23.7%) of the children had impregnated nets and (46%) of those who had the bed nets have used it the day before the survey.**Conclusion:** The study recommends strong social marketing to ensure high coverage for better control of malaria in the area.**Key words:** Bed Nets Coverage, Malaria**Introduction**

Each year more than 500 million people become sick from malaria and two million die⁽¹⁾. The burden of malaria in sub-Saharan Africa remains intolerable, with more than 20% of all deaths of children younger than 5 years attributed to malaria resulting in up to 11.9% deaths per 10,000 children living in malaria endemic areas. In Sudan malaria remains a common problem and leads to over 7 million cases per year, this actually represents 50% of WHO/EMRO cases⁽²⁾. In Gezira State (central Sudan) malaria is also a common problem. According to State Ministry of Health, malaria constitutes 20% of cases seen by the state health facilities⁽³⁾. Insecticide treated mosquito nets (ITNs) for protection against mosquito bites during sleep are highly cost-effective intervention against malaria. In endemic areas children under five years of age are especially vulnerable to malaria and are likely to benefit most from the use of bed nets⁽⁴⁾. Key goal for malaria prevention in Africa is to make ITNs available to 60% of children less than five years of age⁽⁵⁾. However, current delivery strategies are falling short of this goal. Among the 28 African

countries for which comparable national data are available between 1998 and 2002, ITNs use for children less than 5 years old is at or less than 5% in 23 countries, at an overall median rate of 2%⁽⁶⁾. According to some studies done in sub-Saharan Africa (SSA), ITNs reduced the mortality by 17%, it also contributes to substantial reduction in malaria transmission. On the other hand community randomized controlled trials conducted across range of malaria transmission setting in SSA have shown that ITNs are associated with up to 30% reduction in all cases of child mortality over the first 2 years of the trials. Others studies confirmed that the use of insecticide treated nets against mosquito bites during sleep is highly effective and cost-effective intervention against malaria, in endemic areas children under five years of age are specially vulnerable to malaria and are likely to benefit most from the use of bed nets⁽⁷⁾. This study aims to assess the ITNs coverage among children under five at Wad Madani locality Gezira State 2005.

Materials and methods

Study area: The study was conducted at Great Wad Madani locality. It is one of the main localities in Gezira State with population of 452,628; 79% of them reside in the urban and 21% in the rural areas. Malaria constitutes the main health problem in the area. It represents 10 - 20% of the patients seen at the locality health facilities. At the pediatrics hospital, the main referral hospital in the state, malaria represents 20-30% of the children seen at the outpatient. Most of the victims were children under five. The area was selected for the implementation of the Roll Back Malaria (RBM) as part of Gezira Malaria Free Initiative. The programme achieved a lot of success in the area and malaria was reduced from 41% in 2001 to 17% in 2005⁽³⁾.

Study design: It is across-sectional descriptive study targeting households with children under five years of age.

Sample size and sampling technique: A stratified multistage cluster sampling technique was adopted. The locality was divided into three administrative units; one rural and two urban. From each administrative unit 10 to 20 clusters (blocks or villages) were selected according to the population size. From each cluster, 7-10 households were selected using systematic random sampling.

Data collection: The data was collected by trained senior public health officers. The study was done in collaboration with Expanded Programme on Immunization (EPI) in the station. On the other hand, the study is part of a post evaluation coverage survey to assess the coverage of the immunization following a national polio campaign in the area. The study team collected the data interviewing the mothers during a household visits using a check list.

Data analysis: The data was analyzed using Excel sheet.

Results

A total of 1,152 mothers of children under five years of age were interviewed, 609 (52.9%) were mothers of males. Three-hundred fifty nine of the population (31%) have mosquito nets, of them 85 (23.7%) were impregnated. From those who had mosquito nets, impregnated or non-impregnated, only 181 children (50.4%) used the net in the previous night preceding the survey as shown in table 1.

Table 1: Child gender, bed nets ownership, impregnation and use last night

Variables	Frequency	Percentage
Child gender		
• Male	609	53%
• Female	543	47%
Children has bed nets		
• Yes	359	31%
• No	793	69%
Nets were impregnated		
• Yes	85	24%
• No	274	76%
Bed nets were used last night		
• Yes	181	49%
• No	178	51%

Discussion

The study shows the usefulness of collaboration with the EPI which reflects the importance of the integration as an important tool for achieving the objectives. Similar approach was used for the same purpose in Togo West Africa where an EPI coverage campaign was used as an opportunity to distribute ITNs, and this leads to more than 90 % coverage among children under five⁽⁹⁾. The descriptive results of the study suggest that more than 50% of the study population needs ITNs. The study highlights several important issues for monitoring malaria intervention in the area. The coverage rate in 14 surveyed

regions⁽⁴⁾ revealed that the coverage of ITNs range from 0.1% to 28.5% and among 69 regions from 3.6% to 79.7% for any nets. Reported use of bed nets during the preceding night by children less than five years was between 0% and 16% for ITNs and between 0.7% and 74% for any nets. The study revealed low coverage of mosquito nets among children under five and this is still far from the Abuja target which is 60% by the end of 2005. On the other hand the user rate is very low, only 49% of the children who had the bed net used it in the preceding nights at the time of the survey.

The reported coverage of the use of non impregnated nets, beside ITNs also were considered in the study because it has a significant epidemiological impact and their coverage indicate the potential for future coverage. However the lower use in the previous night indicates the importance of introducing the health education programme for the target group.

In a study done by Monasch R et al⁽¹⁰⁾ to assess the proportion of those less than five years old sleeping under ITNs, data synthesized from 23 multiple indicator cluster surveys and 13 demographic surveys between 1998 and 2002, showed that the coverage of any nets and ITNs was 15% and 2% respectively. In our study the coverage rate is more or less very far from Abuja target (60%), so efforts need to be done so as to increase the coverage rate and special concern should be given for the health education programme to ensure the regular use of the ITNs.

The findings demonstrate the feasibility of integrating delivery of these services in a campaign setting and this can give good opportunity for the integration of different programmes. On the other hand the results revealed that it is important to introduce the social marketing programmes to scale up the coverage and this also can be arranged with different sectors.

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