

## **Abstract**

**Introduction:** Although several strategies for the prevention of malaria have been put in place including the use of ITNs, malaria in Uganda still poses a major burden killing about 100,000 people annually. Rakai district with a population of about 471,806 people is one of the most affected areas in the country. Even if government and NGOs have established a mechanism of the distribution of mosquito bed nets to households, more especially with pregnant mothers, children under 5 years and or adults, malaria is still the leading cause of morbidity and mortality in this vulnerable group and the level of effectiveness of the mosquito bed net program is not yet established. Studies conducted do not provide a systematic analysis of variation in effectiveness across different epidemiological and economic zones and the existing knowledge based on effectiveness, is however scarce and limited to a few studies that are hard to compare, generalize or relate to operational situations.

**General objective:** Was to evaluate the ITN program for malaria prevention in Kirumba Sub County.

**Methodology:** This was a retrospective cost analysis study to determine the cost and a cross sectional survey from the providers perspective to determine the community's level of knowledge about malaria prevention and control amongst ITN users in Kirumba sub-county which employed both qualitative and quantitative methods of data collection and analysis. Qualitative data was collected from 8 key informants who were purposively selected based on their information rich at various levels. Key informant guides, document review checklists and questionnaires were used as data collection tools. Qualitative data was thematically analyzed. Computer based packages including SPSS and excel were used in analyzing quantitative data and results presented using graphs and tables.

**Results:** It was found out that 313 (100%) of the respondents at least had a mosquito net in their households, majority of respondents 302 (96.5%) obtained ITNs free from the Government during the mass campaign and only 11 (3.5%) bought the nets on open market. It was also found out that on average each household received 2.7 nets and 4 people on average were found sleeping in each household. Findings also revealed that most decisions on who should sleep under an ITN taken up by

women (101) compared to men (69) for those who are married and that majority 244 (78%) have ever been trained on how to use a mosquito net and a bigger number 170 (54.3%) of trainings were conducted by Village Health Team members. Findings also revealed that 100% of the respondents had children under five sleeping under the net. However, only 161(51%) respondent had their under five sleeping under an ITN every night compared to 6 (2%) who slept under ITN sometimes and 3 (1%) who only sleep under ITNs during rainy season. ITNs provide a barrier against mosquito bites that causes malaria are very effective in malaria prevention to those who consistently and correctly use them. Effectiveness was measured basing on, reduced spending on malaria treatment, reduced health facility visits and reduced mosquito bites. However, those who rated average often fell sick yet others had taken about five months with malaria and therefore believed ITN were not very effective in malaria prevention. Overall, 313 (100%) of the respondents have ever heard about malaria and majority 311 (99.4%) believed malaria is transmitted by mosquitoes to human apart from 2 (0.6) who believed malaria is transmitted to humans by bedbugs. Further findings from the study revealed that majority 235 (75%) of the respondents know that Malaria fever can be transmitted to humans by a bite of an infected mosquito with malaria parasites, followed by drinking unboiled water 54 (17%) yet others believe that sleeping with a malaria patient 16 (5%) also transmits malaria fever to a person. Finally 8 (3%) believed that eating a lot of maize is responsible. Majority 263 (84%) use Insecticide treated bed nets to prevent malaria in their homes and it was found out that majority 267 (85.3%) have ever seen /heard about any message about malaria compared to 46 (14.7%) who had never heard/seen any message about Malaria and majority of the respondents 167 (53.4%) received this information from radios followed by Village Health Team members 43 (13.7%), Health Center 18 (5.8%) and School 13 (4.2%). Kirumba Sub County reported 20,202 malaria cases for 2009/10 before the ITN intervention and one year later, 17,638 malaria cases were reported (2010/11) translating into a reduction of 2,564 (12.7%) cases/lives saved. Ushs. 4,615,000 was the total amount spend on transport, storage/security and allowances during the campaign in Kirumba Sub County, after one Year, 2,564 people were saved

from death at an approximate cost of Ushs.1,800/= per life saved for one year. Finally, among the recurrent costs, the biggest amount (Ushs. 2,086/=) was spent on allowances.

**Recommendations:** In future programming, government may consider giving each household member a mosquito net considering the sleeping arrangements, may also review its ITN distribution strategy to consider providing a mix of public and private sectors working together to create a sustainable complementary system where Government could subsidize or wave off taxes on mosquito nets so that the unit cost of a net is reduced up to a maximum of 3,000/= (three thousand Ug. Shillings). Government and funders may consider strengthening the malaria communication strategy by training and facilitating VHTs. In this case, more support supervision is required in order to keep them updated on the new information. Government and other funders may consider strengthening the program and may therefore consider providing more nets so that each household member owns a net, implementing partner may consider conducting regular sensitization programs targeting net users on the importance of regularly sleeping under an ITN. Net users are encouraged to continue regularly and correctly using mosquito nets in addition to using other personal measures to prevent malaria in their households. They also need to continuously attend all trainings organized at the various sites regarding ITN use in malaria prevention to promote the intervention. The study also revealed that the biggest percentage of (82%) was spent on allowances. Government may consider in the future minimizing allowances by involving more local community-based volunteers in the distribution campaign.

**Further research:**

Future studies may look at household size and number of ITNs per household or per person, number of sleeping spaces covered and considers maximum variation in coverage area in order to have results generalized and would also measure the impact for a longer period and how long those people would live. There is also need for further research in the same area to find out what really happened for all age groups in Lwamba and Kyengeza Parishes where cases of malaria generally increased inspite of the net intervention.