Factors determining the use and non-use of Long Lasting Insecticide Treated Nets over time following a universal coverage campaign: A qualitative study in western Uganda

Clare Strachan[1], Anthony Nuwa[1], Denis Muhangi[2], Peter Okui[3], Michelle E. H. Helinski[1], James K. Tibenderana[1].

[1]Malaria Consortium, Uganda, [2]Makerere University, Department of Social Work and Social Administration, Uganda, [3]National Malaria Control Programme, Ministry of Health, Uganda

10th ANNIVERSARY malaria consortium disease control, better health

a decade in communicable disease control and child health

Introduction

The distribution of Long Lasting Insecticide Treated Nets (LLINs) through universal coverage campaigns is a widely adopted delivery channel for rapid scale-up of coverage. Follow-up studies to assess LLIN retention and use are optimally conducted 6-9 months post distribution. However, less is known about the sustainability of LLIN use over the longer term, relating to the expected lifespan of the net, and factors which may affect this. Understanding the longer term determinants of net use (or non-use) is key in planning appropriate follow-up LLIN supply approaches, as well as sustained behaviour change communication (BCC) strategies.

Methods

A qualitative study was conducted in four rural districts in western Uganda (Fig 1) two years following the distribution of 583,551 LLINs (at the time of distribution, Kyankwanzi was still merged with Kiboga; Table 1).

Fig 1: Study location

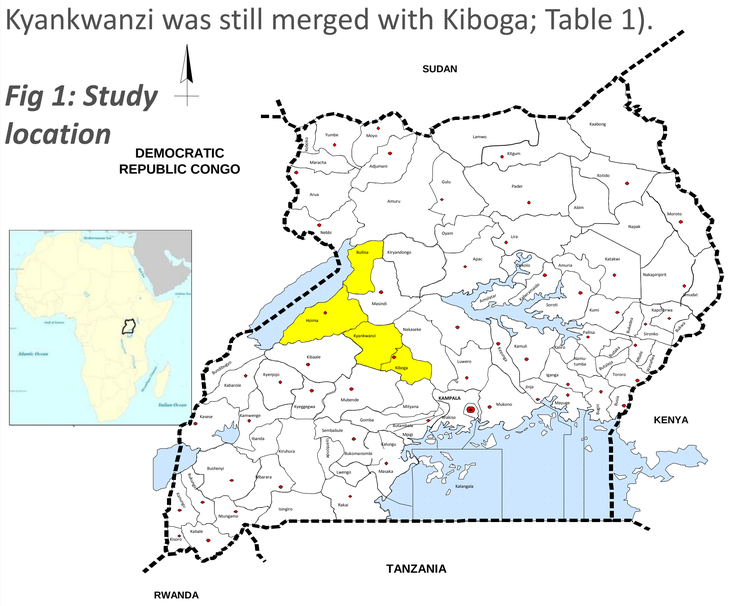


Table 1: Number of LLINs distributed

District	LLINs allocated	Population covered	Average persons/net
Hoima	311,065	501,768	1.62
Kiboga (and Kyankwanzi)	201,290	333,812	1.67
Buliisa	71,196	129,840	1.82
Total	583,551	965,420	1.66

Key informant interviews were conducted with selected (male) household heads and most authoritative females in net recipient households, and selected Village Health Team (VHT) members. Villages were purposively sampled to capture maximum variability in socio-economic, geographic, demographic and cultural factors. Seventy four interviews were conducted and 'most significant change' (MSC) stories were collected to capture context specific aspects of both positive and negative change over time. Thematic data analysis (incorporating MSC enquiry) followed the 'framework approach'. Selection of 'most significant' MSC stories followed a stepped, participatory process . The stories were also analysed using a summative approach to review frequency of changes mentioned. Positive and negative deviance characteristics which affected net use over the long-term were identified and mapped.

Results

Factors determining use of LLINs in the long term

Factors that determine use, or non use, of LLINs in the long-term can be categorised under subjective and objective factors. Subjective factors include perceived benefits of net use, positive/ negative past experiences with net use, social support, social influence (particularly of community leaders and household heads) and net preferences (largely relating to net material). The more objective factors include household/ living conditions (influencing sleeping situations and net hanging opportunities) continued availability or condition of nets, visibility of mosquitoes seasonal factors, and net replacement possibilities. More than half of all informants reported that, where sufficient nets were available, all family members, including both adults and children, slept under nets most of the time. Net use appeared to be more consistent among settled urban and rural communities, compared to fishing, pastoralist and refugee/immigrant communities.

Most significant change

Story selection results:

- 26/74 stories selected by selection panel 1 (Pioneer project team)
- 16/26 stories selected by selection panel 2 (Malaria Consortium Uganda management team)
- 3 final stories selected by selection panel 3 (District Health Team stakeholders)

The long-term changes reported through the MSC stories related to health, economic and psycho-social benefits felt at the individual, household and community level.

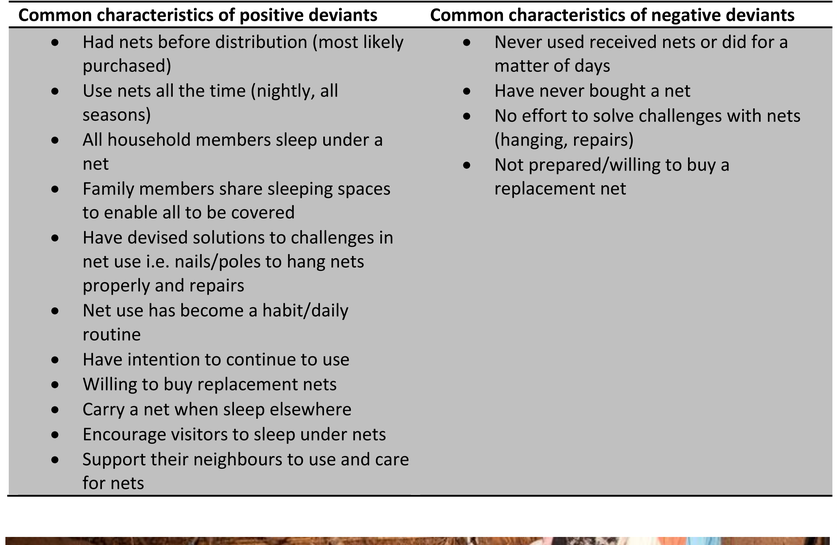
Excerpt from one of the final MSC stories selected which indicates the multiple benefits of using nets and the value attached to them:

"Since 2010 this household has not suffered from malaria. We have only had slight fever due to cough and flu. The children who used to get frequent malaria have not been admitted or treated [for] malaria. I used to spend a lot of money treating my family. Half of my salary, if not all, was spent on treating my family. Every time I would also be asking for salary advance to meet treatment costs and other costs like transporting the sick to the hospital. I have concentrated on my job and my performance has improved tremendously because of continuously reporting. My children's school attendance has improved and I have managed to pay school fees on time. We shall continue using [these nets] in all weather because malaria has no season. I think these nets should be made accessible cheaply in shops which are everywhere and near us so that we can afford to buy them in the future."

(Female caregiver, Hoima district)

Results of MSC story summative analysis are presented in Fig 2.

Fig 2: Frequency of 'change' mentions in MSC stories (total 74)



Positive and negative deviance

Analysis of negative and positive deviant health-related behaviour can be useful in identifying strategies and resources with the potential to encourage changes in health related behaviour in communities. Patterns of net use behaviour reportedly vary widely from cases where all household members consistently use nets (positive deviants) to cases where whole families have abandoned net use (negative deviants). A range of characteristics relating to past, current and intended net use behaviour were identified for both positive and negative deviance (Table 2).

Table 2: Characteristics of positive and negative deviance

Common characteristics of positive deviants	Common characteristics of negative deviants
• Had nets before distribution (most likely purchased) • Use nets all the time (nightly, all seasons) • All household members sleep under a net • Family members share sleeping spaces to enable all to be covered • Have devised solutions to challenges in net use i.e. nails/poles to hang nets properly and repairs • Net use has become a habit/daily routine • Have intention to continue to use • Willing to buy replacement nets • Carry a net when sleep elsewhere • Encourage visitors to sleep under nets • Support their neighbours to use and care for nets	• Never used received nets or did for a matter of days • Have never bought a net • No effort to solve challenges with nets (hanging, repairs) • Not prepared/willing to buy a replacement net

Conclusions

BCC campaigns should emphasise consistent use of nets throughout the year and effective net maintenance. The success of such campaigns would most likely be enhanced by greater contextual understanding of the factors which promote sustained net use such as those presented here. Utilising 'positive deviants' as agents of change when promoting ongoing net use in communities as part of such a campaign seemingly has potential.

Acknowledgements

This study was designed and carried out by Malaria Consortium Uganda, in collaboration with the Uganda National Malaria Control Programme and the District Health Teams of Buliisa, Hoima and Kiboga (at the time of data collection, Kiboga was still merged with Kyankwanzi). This study was funded by Comic Relief under the Pioneer project, implemented by Malaria Consortium Uganda. The authors thank all individuals who participated in this study.

FUNDED BY COMIC RELIEF