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Impact of a behavior change communication program on net durability in eastern Uganda

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Introduction

- Malaria prevention with long-lasting insecticidal nets (LLIN) has seen a tremendous scale up in sub-Sahara Africa in recent years [1]
- The importance of net durability is becoming a critical factor in understanding the frequency of net replacement
- There is a paucity of data on how net maintenance influences net durability
- A study was conducted to assess the effect of a net care and repair behavioural change communication (BCC) intervention on net durability

Methods

Study site

- The study was conducted in one district in eastern Uganda with a district in the neighboring region serving as a comparison
- The two districts, which are separated by a lake, are culturally similar. However different languages are spoken and are served by different radio stations

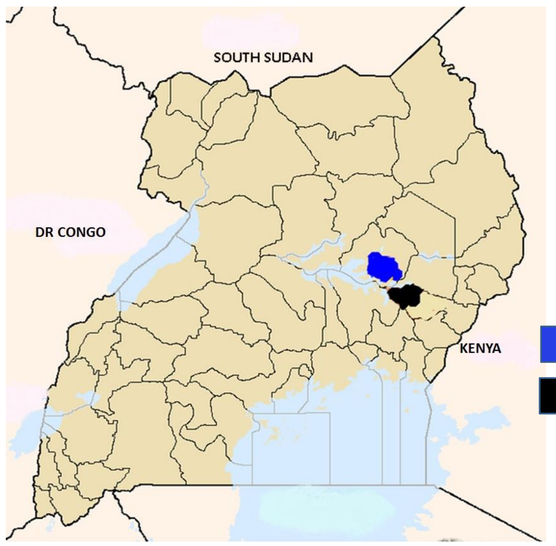

Figure 1: Study Areas in Eastern Uganda

Intervention

- The BCC campaign focused on benefits of net care, methods of net repair, net washing and net hanging practices
- Target audiences were mothers and primary school children
- The intervention was delivered through radio spots, community mobilization and school events
- Both districts received LLINs through a mass campaign

Surveys & data analysis

- Two stage cluster household surveys conducted at baseline and at 18 months (end line) in both districts[2]

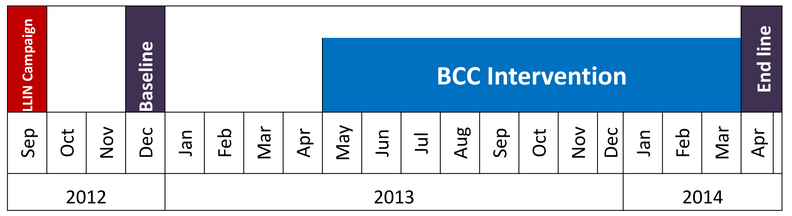

Figure 2: Timeline of campaign, intervention & surveys

- Analyses were conducted in Stata v.12 (Stata Corp) using survey , double-difference & regression methods on exposure to intervention, net condition & durability
- Net condition was assessed using a proportional Hole Index (pHI), categorized into "serviceable" & "too torn"[3]

Results

- Respondents in the intervention district had a 31.2% greater exposure to net care and repair messages than those living in the comparison district (Figure 3)
- Increased exposure was positively associated with attitudes regarding net care and repair (p<0.001)
- Respondents in intervention district had overall increased knowledge on net care and repair practices

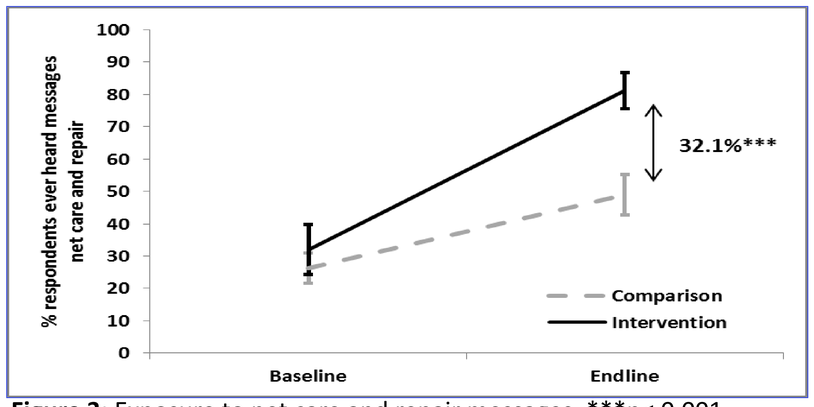

Figure 3: Exposure to net care and repair messages, ***p< 0.001

- Nets in the intervention district had more repairs done (Table 1)
- Respondents in the intervention district had a higher positive attitude
- Predictors associated with serviceable net condition were folding & tying up the net, bed material, availability of sufficient nets in household
- Presence of rodents was negatively associated with net condition
- Survival of nets followed a 2-year median survival curve (Figure 4).

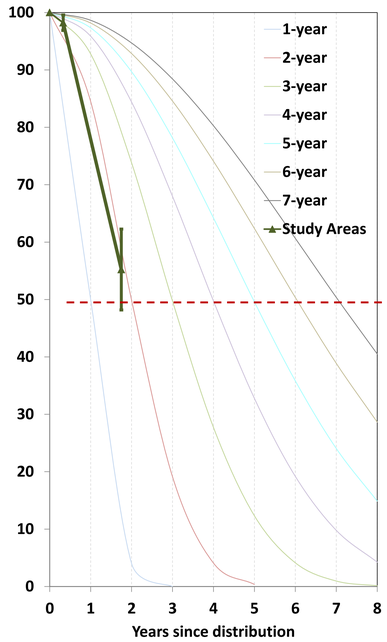

Figure 4: Net survival

Table 1: Net condition and repair

	End line comparison		
	Comparison	Intervention	p-value
Net ever had a hole	N=718	N=535	
Yes [95%ci]	82.5 [76.5-88.4]	93 [88.3-97.7]	p=0.008
Hole repairs [95%ci]	N=604	N=497	
Any repairs, %	48.0	56.4	p=0.179
No. of full repairs, mean [95% ci]	0.6 [0.5-0.8]	1.8 [1.4-2.2]	p<0.001
No. of partial repairs, mean [95% ci]	0.7 [0.5-0.8]	1.5 [0.9-2.2]	p=0.015
Proportionate hole index (pHI), median	N=718	N=535	
Overall	830	837	p=0.045
Serviceable (pHI 0-642)	55.4	42.2	p=0.034
Too torn (pHI> 642)	44.7	57.8	
Net survival			
Net survival 21 months post distribution	56.6	40.9	p=0.007

Conclusions

- The intensive BCC program resulted in increased knowledge and attitudes regarding net care and repair and increased repair behaviour. However, this did not translate in improved net durability
- Overall net survival was below the expected 3-5 year survival thus net replacement campaigns recommended in this region
- More research is needed to understand better the impact of net care and repair on net durability

References and footnotes

[1]WHO: **Global Malaria Program. World Malaria Report**. 2013;

[2] Ethical approval was obtained from both Uganda National Council of Science and Technology (UNCST) and John Hopkins University (JHU);

[3]WHO: **Guidelines for monitoring the durability of long-lasting insecticidal mosquito nets under operational conditions**. 2011.

Acknowledgements

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