

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-Saharan Africa in recent years¹
- 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 they are served by different radio stations

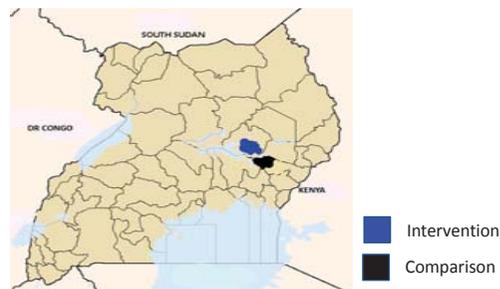


Figure 1: Study Areas in Eastern Uganda

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 and data analysis

- Two-stage cluster household surveys conducted at baseline and at 18 months (end line) in both districts²

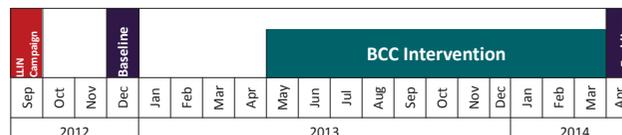


Figure 2: Timeline of campaign, intervention and surveys

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

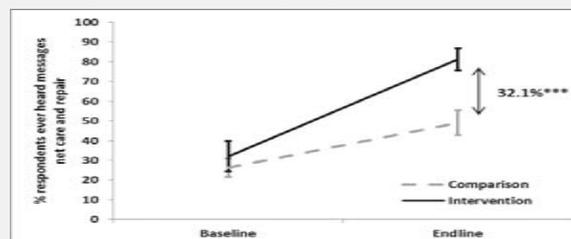


Figure 3: Exposure to net care and repair messages, *** $p < 0.001$

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

Table 1: Net condition and repair

	End line comparison		p-value
	Comparison	Intervention	
Net ever had a hole	N=718	N=535	
Yes	82.5	93	$p=0.008$
[95%ci]	[76.5-88.4]	[88.3-97.7]	
Hole repairs [95%ci]	N=604	N=497	
Any repairs, %	48.0	56.4	$p=0.179$
No. of full repairs, mean	0.6	1.8	$p < 0.001$
[95% ci]	[0.5-0.8]	[1.4-2.2]	
No. of partial repairs, mean	0.7	1.5	$p=0.015$
[95% ci]	[0.5-0.8]	[0.9-2.2]	
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	$p=0.007$

- 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 and 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 two-year median survival curve (Figure 4)

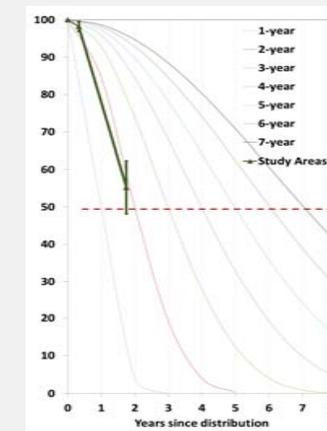


Figure 4: Net survival

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

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