

**LONG-LASTING INSECTICIDE-TREATED NET ( LLIN<sub>s</sub>) REPURPOSING  
PRACTICES AND THEIR PREDICTORS AMONG  
HOUSEHOLDS IN IBANDA DISTRICT,  
WESTERN UGANDA**

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# Introduction

- Globally, LLINs are one of the effectiveness tools in preventing malaria though **have a life span**, (Lorenz et al., 2020)
- In Africa, **non-beneficial** net repurposing has been established as being one of the factors that reduce LLIN effectiveness in their vector control endeavors (Topazian et al., 2021; Berthe et al., 2019).
- Uganda registered over 83% of the households with at least an LLIN by 2018 (MOH, 2021). However, **cases of harmfully repurposed** for old nets remain practiced **though not frequently documented globally or regionally context**, (RBM, 2020; Topazian et al., 2021).
- Ibanda district has been consistently reporting the **Cases of net misuse and harmful** LLIN repurposing (DTF 2020).

# Statement of the problem

- Even with distribution of more than **120,000 LLIN in Ibanda**, the **DTF noted net use behaviour suggestive of widespread non beneficial** repurposing in the district (2019-2020 report).
- Almost half of **households keep their old LLINs in suitcases after receiving new** ones from the task force (PDM 2019).
- In 2020, LLIN distribution teams in the district observed many cases of LLINs being used to **construct chicken coups, and provide fencing for gardens and nursery beds.**
- Similarly, **non-quantified cases of old LLIN use were also registered** by district net distribution teams in the first quarter of the year report, 2021.
- Such **gaps in LLIN repurposing** are highly likely to be antecedents of the fact that Ibanda district **still registers the highest number of malaria cases** in the Ankole region (Kigozi et al.,2020).
- Therefore **if not addressed, the district remains among the highest burden** in the region, Hence affect Uganda's efforts to achieve SDG 2030 (3) (Good health and well-being).

# Objectives and question of the study

## Broad objective

To assess the **LLINs repurposing practices and their predictors** among households in Ibanda district – Western Uganda.

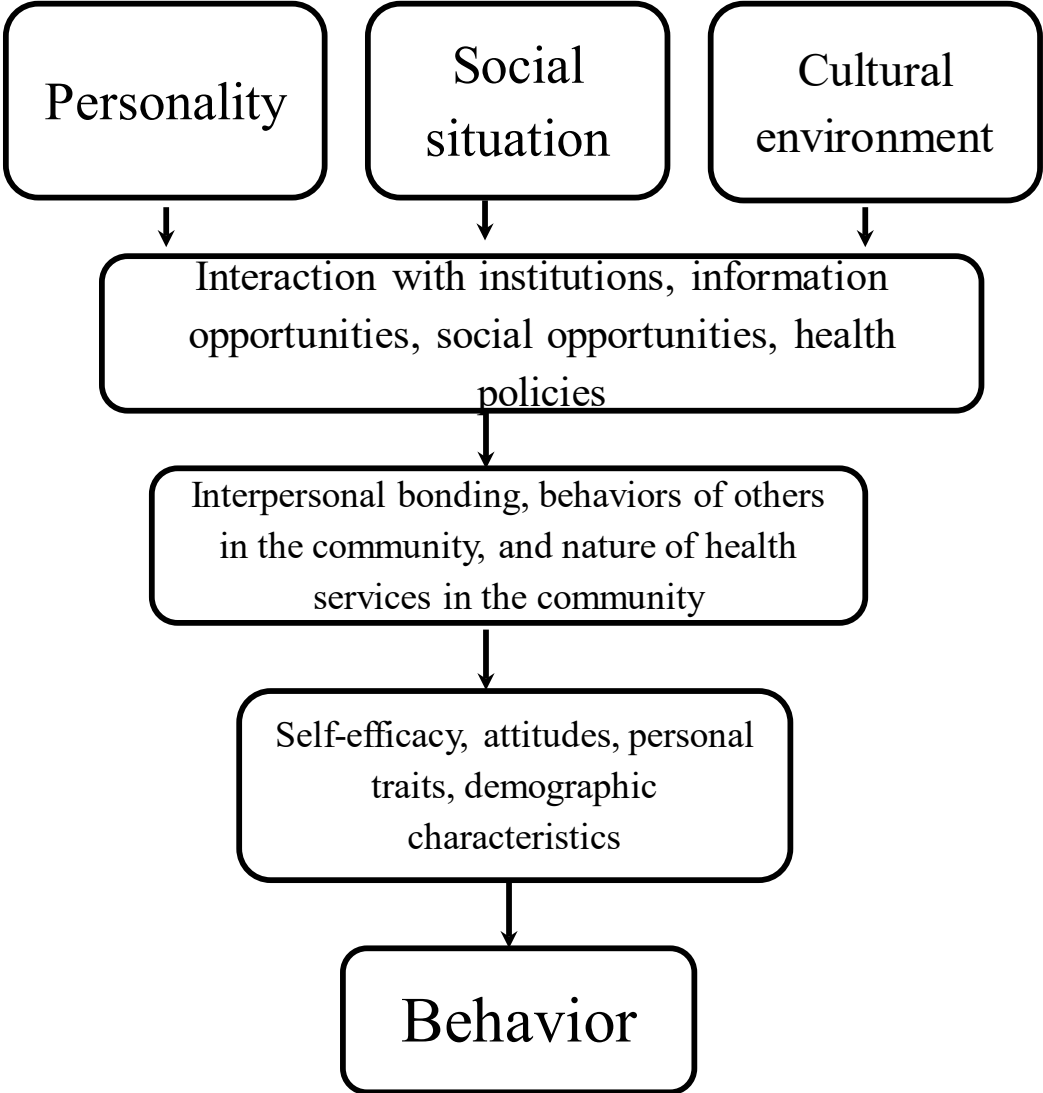
## Specific objectives

- To determine the **prevalence** of LLINs repurposing practices among households in Ibanda district – Western Uganda.
- To establish the **intra-household predictors** of LLINs repurposing practices among households in Ibanda district – Western Uganda.
- To determine the **programmatic predictors** of LLINs repurposing practices among households in Ibanda district – Western Uganda

## Research question

- What is the **prevalence and predictors** of LLINs repurposing practices among households in Ibanda district – Western Uganda?

# Theoretical framework (The Theory of Triadic Influence [Flay, 2009])



# Conceptual framework

## Independent variables

### Intra-household characteristics

- Availability of alternative mosquito control mechanisms
- Economic activity engaged in by household
- Status of net purchase
- Children below five years in household
- Household size
- History of malaria in household
- Number of rooms in household
- Knowledge about LLIN malaria prevention
- Number of people sleeping under the net
- Perceptions
- Age of household head

### Programmatic characteristics

- Health education about net use at point of distribution
- Behavior change communication related to net use
- Education about discarding of old nets
- Education about repurposing and its importance
- Information about enforcement agency
- Involvement of CHWs in net distribution
- Follow up visits
- Frequency of provision of new nets
- Accountability requests before new nets are provided
- Number of nets provided per visit

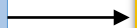
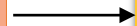
### Intervening variables

- Socio demographic characteristics
- Intrapersonal characteristics

## Dependent variables

### Repurposing practices

- Beneficial (For use as vector barriers)
- Non beneficial (Neutral or harmful)



# Methodology

<b>Study design</b>	A community based <b>analytical</b> cross-sectional <b>study</b>
<b>Study setting</b>	Ibanda district
<b>Sources of data</b>	Primary
<b>Study population</b>	<b>Household heads</b> or their representatives who were recipients of LLINs
<b>Sample size determination</b>	<p>Formula by <b>Krejcie and Morgan (1970)</b>.</p> $s = \frac{X^2 \times P (1 - P)}{d^2 (N - 1) + X \cdot P (1 - P)}$ <p><math>X^2</math> = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841). <math>N</math> = the population size = <b>54,604</b> households in both counties <math>P</math> = the population proportion (assumed to be .50 since this would provide the maximum sample size). <math>d</math> = the degree of accuracy expressed as a proportion (.05). On substitution, <b>s = 381 Households</b></p>
<b>Sampling procedures</b>	Stratification, Simple random sampling and systematic sampling were used

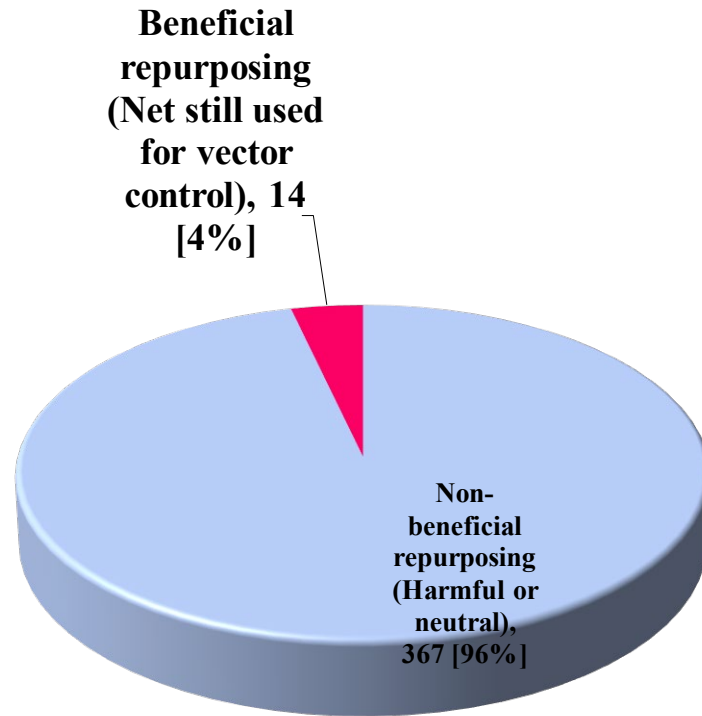
# Methodology

<b>Study variables</b>	Dependent <b>variable</b> was <u>repurposing practices</u> <b>Intra-household</b> and <b>programmatic characteristics</b> were the independent variables
<b>Data collection methods</b>	<b>Face to face Structured</b> interview
<b>Data collection tools</b>	Researcher Assistants -administered questionnaire
<b>Quality control</b>	<b>Pre-test</b> of the data collection tools Training of research assistants
<b>Data analysis</b>	<b>Univariate, bivariate and multivariate</b> regression analysis for quantitative data
<b>Ethical considerations</b>	Clearance from the university and Ibanda district as well a respective sub counties and villages. <b>Informed</b> consent Voluntary participation Confidentiality and anonymity



# RESULTS

# Objective 1: To determine the prevalence of Long-Lasting insecticide treated net repurposing practices among households in Ibanda district – Western Uganda



## Objectives 2 and 3: Intra-household and programmatic predictors of Long-Lasting insecticide treated net repurposing practices among households in Ibanda district – Western Uganda

Predictors	Variable	Repurposing practices		cOR (95% CI)	P value	aOR (95% CI)	P value
		Beneficial [14]	Non-beneficial repurposing (Neutral or harmful) [367]				
Intra-household	Have any children below five years in household`	5(1.9%)	265(98.1%)	0.21(0.07 - 0.65)	0.00*	<b>0.20(0.07 - 0.64)</b> 1.000	0.007
	Yes	9(8.1%)	102(91.9%)	0.65			
	No			1.000			
Programmatic	Health education about net use at point of distribution	9(8.0%)	104(92.0%)	4.55(1.49 - 13.90)	0.008*	<b>4.66 (1.448 - 15.02)</b> 1.000	0.010
	Yes	5(1.9%)	263(98.1%)	13.90			
	No			1.000			
	Educated about net repurposing and its importance	10(5.7%)	165(94.3%)	3.06 (0.94 - 9.94)	0.063	<b>3.43(1.01 - 11.64)</b> 1.000	0.048
	Yes	4(1.9%)	202(98.1%)	9.94			
No			1.000				

# Conclusion

- **Repurposing practices** of old LLINs among households in Ibanda **is still very low with only 1 in every 27 households** repurposes its old nets beneficially.
- Both **intra-household** and **programmatic characteristics** predict repurposing practices; where **programmatic** take more precedence
- The **intra-household predictor (only one)**; the number of children below five years in household
- **Programmatic predictors (two)**; and Health education about **net use at DP and net repurposing & its importance**

# Recommendations

- ❖ MOH mandate to **Intensity SBCC at DPs** with key messages for LLINs beneficial repurposing should be explored.
- ❖ DTF should enforce **SBCC during health education & sensitization** related to net repurposing by **net distributors before LLINs are given to households.**
- ❖ **Community mobilization and interpersonal communication** channels should be done at household level to further emphasize **beneficial repurposing practices** by the **VHTs.**
- ❖ **A qualitative study** should be conducted in order to **explore the reasons behind non-beneficial** repurposing & the fact that **harmful repurposing was the most wide-spread practice** in Ibanda

*Thank you.*