

# ASSESSING THE EFFICACY OF INSECTICIDE ON LONG-LASTING INSECTICIDE NETS

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**AUTHORS SUMMARY:**

My name is Aminata bah I am a regional vector control officer Working with the ministry of health the Gambia I have 20 years of work experience I attended Gambia college school of public health were I obtained my Higer national diploma in environmental science from January 2001 to January 2004.

**BACKGROUND:**

Long-lasting insecticide nets (LLINs) are one of the key preventive interventions used in the fight against malaria. Since 2014, Gambia has implemented LLINs mass distribution campaign targeting the general population. The use and scaling up of this intervention country-wide has contributed significantly to the reduction of malaria cases in the Gambia. However, these achievements are threatened by the widespread of malaria vector resistance to the insecticide used on LLINs. To ensure the efficacy of the insecticide on LLINs we conduct insecticide efficacy tests on new and old nets in the country.

**METHOD:**

This survey was done in the Upper River Region of The Gambia, and the technique applied was using mosquito larvae collected from natural breeding sites, and transported to standard insectary where they are sorted out. The anopheles larvae were then reared to adult and feed on 10% glucose. The female anopheles mosquitos age 2-3 days were exposed to the nets for 3 minutes at different levels top, middle and bottom and observed for 24hrs. Random sampling was conducted on new and old nets. A total of 5 new nets, 5 one-year-old nets and 5 two-year-old nets were used from the community. Each net was assigned a number and these numbers were written on a small piece of paper put in a small bucket, mixed well and a child was asked to pick five from each of the net category buckets. The fifteen nets were then used to run the efficacy test.



Running The Test



Larvae Collection



Preparing The Cages



Collecting Mosquitoes For The Sample



Preparing Glucose For Feeding

**RESULT AND DISCUSSION:**

A total of 360 female anopheles mosquitoes were exposed to different levels on the new and old nets. The new net knockdown rate after 3 minutes of exposure was 97% (39/40) top, 97% (39/40) middle and 100% (40/40) bottom. The high mortality rate might be as a result of the chemical context present during production. The one-year-old nets knockdown rate after 3 minutes of exposure were 87% (35/40) top, 90% (36/40) middle and 90% (36/40) bottom. The two-year-old net knockdown rate after 3 minutes of exposure was 82% (33/40) top, 82% (33/40) middle and 87% (34/40) bottom. The survival rate in the old nets cloud be attributed to the poor handling and washing with other regents that may affect the insecticide on the nets. The overall mortality rate was 91% (326/360) after 24hrs.

**CONCLUSION:**

This short survey indicated that the insecticides on the new nets were effective in killing the malaria vectors. The mortality rate in the new net was signifincantly more concentrated in the new nets rather than old nets. However, this is due to the high cocentration of the chemicals in the new nets, while the old nets is due to exposure of climatic condition and washing methods. therefore, the National Malaria Control Program should focus attention on the distribution of LLIN at periodic intervals.

**ACKNOWLEDGMENT:**

I am grateful to the Ministry of Health, the national malaria control programme and my supervisor for editing the abstract and the moral support.

**Acknowledgement :-**



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