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Types of Insecticide Treated Nets Preferred by Households In Rural And Urban Blantyre

By

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CERTIFICATE OF APPROVAL

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DECLARATION

I Young Samanyika hereby declare that this thesis is my original work and has not been presented for any other awards at the University of Malawi or any other University.

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Date 30 June 2008

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ABSTRACT

Introduction: Two types of shapes of ITNs are being distributed in Malawi and these are rectangular and conical. Informal reports indicate that some people were not happy with the shape of the rectangular subsidised ITNs.

Objectives: To determine the shape of ITNs that households in rural and urban areas of Blantyre district prefer to own. Specifically, the study wanted to find out: the shape and colour of ITNs that households in urban and rural areas of Blantyre would prefer to use; the bedding/sleeping pattern of households in urban and rural areas of Blantyre; reasons for preferring a particular shape of ITN; attitudes/perceptions/myths/beliefs of people towards each shape of ITN; feasibility of installing the preferred shape of ITN and relationship between preference of shape of ITN and social status of households in terms of education and wealth.

Methodology: This was a descriptive cross sectional study involving household heads (men and women). The study was conducted in rural and urban areas of Blantyre district from March to July 2007. The study subjects (household heads) were selected by a multistage cluster sampling method. Questionnaires and FGDs were used to collect Quantitative and qualitative data respectively. The study interviewed a total of 1078 household heads. The study also conducted three FGDs sessions.

Findings: It was found that 80.6% of the respondents preferred conical ITNs with easiness to hang as the major reason for the preference and 76.0% (818) of the respondents preferred blue to be the colour.

Conclusions: The findings of this study should help policy makers understand the perceptions of the people of Blantyre regarding the type of ITNs in terms of shape and colour preferred.

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LIST OF ABBREVIATIONS

BIMI	:	Blantyre Integrated Malaria Initiative
CDCMMP	:	CDC Malaria Malawi Programme Committee
COMREC	:	College of Medicine Research and Ethics
EA	:	Enumeration Area
EHP	:	Essential Health Package
FGD	:	Focus Group Discussion
HMIS	:	Health Management Information System
IPT	:	Intermittent Preventive Treatment
ITNs	:	Insecticide Treated bed Nets
NMCP	:	National Malaria Control Programme
OPD	:	Out Patient Department
PSI	:	Population Services International
RBM	:	Roll Back Malaria
UNICEF	:	United Nations Children and Education Fund

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Present estimates of malaria are that approximately 350-500 million of clinical disease episodes occur every year globally. Malaria causes 8% of all (10.6 million) deaths in children worldwide. Around 60% of the cases of clinical malaria and 80% of deaths occur in Sub-Saharan Africa. Of the more than 1 million Africans who die from malaria each year, most are children of under five years of age. [1]

In Malawi, malaria is still the commonest cause of death, hospitalisation and outpatient visits in both children and adults. It is reported that 30% of all hospital under five deaths, 40% of all children of under five admission and 33.2% of OPD attendance are due to malaria. [2] Mathanga and Bowie observed that Children from households with low socio-economic status were more likely to have malaria parasites than those from high socio-economic status (63% vs. 36%).[3] It is also likely that mortality rates are higher for the lower socio-economic status group because they experience barrier to access prompt health care.

In line with Roll Back Malaria (RBM) 2000 declaration, the government of Malawi through the National Malaria Control Programme (NMCP) [2] is striving to achieve the goal of reducing by half the 2000 levels of malaria morbidity and mortality in Malawi by the year 2010 and to reduce this burden by a further 50% by 2015. The strategies of NMCP [4] being used to combat malaria are through proper and timely treatment of cases, promotion of preventive malaria treatment in pregnant women and promotion of the use of ITNs. These strategies aims at: increasing

proportion of children of under five years of age and pregnant women who access effective treatment within 24 hours of onset of symptoms, proportion of children of under five years of age and women age 15-49 years who sleep under Insecticide Treated Nets (ITNs), pregnant women who receive Intermittent Preventive Treatment (IPT) for malaria and capacity of districts to detect increase in the malaria cases and respond effectively.

As highlighted in the previous paragraph that one of the key strategies to achieve the goal is prevention of Malaria transmission by use of ITNs, it is therefore important to make the ITN programme effective, by achieving high level of usage year round. The effectiveness of the ITNs on reduction of malaria episodes and rate of parasitemia has been conclusively demonstrated in several studies in Sub-Saharan Africa. ITNs have shown to reduce sick child visits (SCV) by 27% (95% CL: 26–46), malaria attacks in infancy by 74% (p: <0.0001) and moderate-severe anaemia by 60% (p<0.001). [5, 6, 7]

As a result of this evidence, focus of ITN related research has now changed from proving the effectiveness to increasing coverage and use because it is not automatic that those who own nets use them. This was observed in Togo where free ITNs distributed through a nation-wide integrated immunisation campaign in children of 9-59 up to 92.7% (95% CL= 90.3%-95.1%) coverage of the target group but it was sad to find out that only 43.5% of the target group slept under an ITN on the night before the evaluation survey. [8] It was further reported that the low use coverage was observed because the evaluation survey was conducted during hot and dry low transmission season whereby people do not like to use ITNs and there is a perception that malaria risk is very low. However this signifies that the use of ITNs is not constant.

Malawi has also started distributing 100% subsidised ITNs to pregnant women and new born children. It is crucial to make sure that the ITNs being distributed are used all year round. Some of the reasons in Malawi found to be contributing to low usage of ITNs are creation of excessive warmth during sleeping, uncomfortable breathing while sleeping under an ITN and inappropriateness of the shape of ITNs being distributed. Less mosquito nuisance and perception of less or no Malaria risk also contribute to low usage of ITNs in the dry season in Malawi. [9]

1.2 STATEMENT OF THE PROBLEM

In Malawi, there are two programmes that are used to distribute ITNs. The first programme is the one that distributes subsidised ITNs through health facilities targeting newly born babies and pregnant women. These ITNs are rectangular and green in colour and subsidised up to 100%. The second programme is the one that distribute ITNs in commercial shops. These ITNs are conical and blue in colour and are not subsidised. According to National Malaria Control Programme, the decision to distribute subsidised green rectangular ITNs was made after consulting the communities through focus group discussions on suitability of the shape of ITNs in relation to the sleeping pattern of most Malawians. This method however, used unrepresentative sample (sample was small to be generalised to the district as well as the whole country) and qualitative data only making it more prone to selection and information bias. Though this was the case, informal reports indicated that some people were not happy with the shape (rectangular) of these subsidised ITNs. They claim that these ITNs are generally laborious to fix and not economical with the available space in the sleeping room unlike the conical shaped ITNs. If this was true, it was feared that it may affect proper utilisation of the ITNs. This study therefore was interested in determining the shape of ITNs that is preferred by people in urban and rural areas, the feasibility of installation to those who sleep on beds or mats and

appropriateness of the preference according to available space and housing type by using a representative sample and collection of quantitative and qualitative data.

1.3 JUSTIFICATION THE STUDY

Results of the study will assist in making right decision in the right shape of ITNs that will be liked by most people. This will motivate more people to own and use ITNs of their choice thereby increasing ITN coverage and utilisation. As far as marketing principles are concerned, it is important to provide the right product that is acceptable by majority in terms of design. This should therefore be taken into account in the social marketing programmes.

CHAPTER 2

OBJECTIVES OF THE STUDY

2.1 MAIN OBJECTIVE OF THE STUDY

To determine the shape of ITNs that households in rural and urban areas of Blantyre district prefer to own and which shape is more appropriate to use under the prevailing sleeping conditions and house designs.

2.2 SPECIFIC OBJECTIVES

i. To assess the bedding/sleeping pattern of households in urban and rural areas of Blantyre.

ii. To determine the shape and colour of ITNs that households in urban and rural areas of Blantyre would prefer to use.

iii. To explore reasons for preferring a particular shape of ITN.

iv. Elicit attitudes/perceptions/myths/beliefs of people towards each shape of ITN

v. To establish the feasibility of installing the preferred shape of ITN.

vi. To determine the relationship between preference of shape of ITN and social status of households in terms of education and wealth.

CHAPTER 3

METHODOLOGY

3.1 TYPE OF RESEARCH STUDY

The study was a descriptive cross sectional study that used both quantitative and qualitative data collection methods.

3.2 PLACE OF STUDY

The study was conducted in sampled rural and urban areas of Blantyre district.

3.3 STUDY POPULATION

The study population was 1078 household heads selected from 30 EAs of rural and urban Blantyre (rural 14 EAs and urban 16 EAs) and some 72 female and male community members who participated in FGDs.

3.4 STUDY PERIOD

The study was conducted for approximately six months from March to August 2007. Dissemination of study findings will be done after the study report has been proved successful by examiners. Training of RAs, pre-testing of data collection tools (questionnaires and interview guide for FGD), and printing of data collection tools for the actual research was conducted in March 2007. Data collection was conducted in April 2007. Data entry and data cleaning was conducted in May and June respectively. The last two months were used for data analysis and report writing.

3.5 SAMPLING

3.5.1 SAMPLE SIZE

The study collected data from 1078 households from 30 EAs (36 households per EA). Thirty-six households were selected from each EA to produce a 30 by 36 sample size. The initial plan was to collect data from 1080 households but 2 refused. Those who refused had similar characteristics as the rest of the households thereby removing fears of selection bias. The figures of 30 EAs and 36 households per EA were used because statistically, this is considered to be large enough for using normal distribution whereby scientific analysis of data is valid. [10] The extra 6 households per EA were added to accommodate refusals and any kind of data losses that can reduce the sample size. Three sets of FGDs were conducted at Nselemu village in TA Kapeni, William village in TA Makata and Ziyenda village in TA Kunthembwe. The study planned to conduct 4 sets of FGDs but failed to complete the fourth due to financial limitations.

3.5.2 SAMPLING METHOD AND PROCEDURE

The sampling method use was multistage cluster sampling according to population sizes. EAs produced by NSO were considered to be the clusters for data collection. [10]

The district in which the study was conducted was selected on the basis of convenience to the Principal Investigator (PI). The PI is based in this district. This district was also the first in Malawi to implement the district wide distribution model that was scaled up nationally in 2002.

The first stage of the sampling was select the 30 EAs followed by selection of study villages and lastly study households. To select EAs for the study, two sampling frames of EAs were made by the PI because there were not readily available by NSO. The first sampling frame was for all EAs in the city and the other one for EAs in rural. Sixteen EAs from urban sampling frame and 14 EAs from rural sampling frame were systematically selected according to their population sizes. The systematic selection was done by first arranging EA populations in ascending order and secondly by calculating cumulative populations. The sampling interval was also calculated by dividing the sum of EA populations by the number of EAs to be sampled. The first EA (cluster) to be picked into the sample was randomly selected by using the "RANDBETWEEN" function of Microsoft excel computer package. The EA whose cumulative total population included the random number was selected as the first in the sample. The sampling interval was then being added to the previously selected EA's cumulative total to obtain the second. The process continued until the final EA (cluster) was reached.

Sampling frames for villages/locations in the selected EAs were also made by the PI. Three study villages/locations were randomly selected from each EA level sampling frame. Thirty-six households were also being systematically selected from the three villages in each selected EA. To select the study household, centre of the village/location were selected as the first step. A bottle was the spun at the centre of the village/location to select the direction of household sampling. Household located to where the bottle was pointing was taken as the first to be sampled and then the subsequent households were selected by adding a sampling interval until the last household was selected.

There was no specific procedure for selecting FGD participants. Female and male members were recruited to male and female groups on the basis of availability at venue. Males and females were separated to give women an opportunity of expressing their views freely which is sometimes difficult when women are combined with men. Of course village head men in the concerned villages were requested to call for the community members for the FGDs. The villages for FGDs were selected by using simple random sampling.

3.6 DATA COLLECTION

After selecting EAs for the study, permission conduct the study was obtained from TAs and concerned village heads. The traditional leaders were written letters that explained in detail about the study in terms of where the study was proposed to be executed, methodology, objectives and its importance. The traditional leaders were requested to sign consent letters to declare their acceptance. There were no refusals. Village heads were requested to inform all community members in advance of the study implementation. Though this was the case, enumerators also explained the study and ask the household head to sign consent form if he or she accepted to be interviewed.

The interviews were generally conducted in the morning hours. However in some cases upon making an appointment, some were conducted in the afternoon or on weekends. All the interviews were conducted in Chichewa. The questionnaires were translated into Chichewa before the interviews.

Quantitative data was collected through questionnaires administered by Research Assistants (RA) to sampled household heads regardless of whether they had a net or not. Questionnaires were used to collect data on demographic information of respondents, preference of shape of ITN, reasons for the preference and bedding type. Each RA was carried with him/her both a conical and a rectangular ITN. The ITNs were used at each house in order to ascertain feasibility of installation of each type of ITN. RAs were hanging the ITNs in one of the rooms in the house and record his/her opinion on whether conical or rectangular ITN was appropriate. Qualitative data was collected through Focus Group Discussion (FGDs) with female and male community members of rural and urban areas of the district. FGDs covered topics such as perception of people towards different shapes of ITNs, existence of cultural and traditional beliefs that may influence preference of a shape of ITNs and misconceptions

3.7 ETHICAL CONSIDERATIONS

Written permission was sought from the concerned Traditional Authorities (TAs) village headmen and informed consent was sought from household heads for the administration of the questionnaires and group discussions. Every enumerator introduced him/herself to the household before administering the questionnaires and the purpose of the research was explained.

3.8 DATA MANAGEMENT

Quantitative data was processed by using “EPI-INFO version 6.0” computer package. Qualitative data from FGDs was translated into English and rechecked for accuracy of translations. Themes and sub themes were identified, coded and categorised from the compiled field notes

Chi-square (X2) test was used to test significance of differences in preferences of type of ITNs between social statuses and location (urban and rural)

3.9 STRENGTHS AND WEAKNESSES OF THE STUDY

The study was well designed in that the sample size was large enough for scientific data analysis, the sampling method was appropriate to type of study and it used both quantitative and qualitative data collection techniques. In order to avoid bias in determining suitability of a particular shape of ITN in a sleeping room, the enumerator actually installed the different shaped ITNs. All the data collection tools that were used were relevant to the study.

However due to financial constraints, enumerators were collecting data individually as opposed the earlier plans to collect data in teams. This denied enumerators chance of correcting one another should there need arise. The original plan was that enumerators should be collecting data in teams lead by a supervisor. However supervisors were assigned to be going round the check how data was being collected.

CHAPTER 4

RESULTS

4.1 CHARACTERISTICS OF THE STUDY POPULATION

There were a total of 1061 under five children, 1245 women of child bearing age and 2969 other household members in all the families. Households had an average of 1.5 under five children and an average of 1.4 women of child bearing age. Total population for all the households was 5275.

A total of 1080 households were planned to be interviewed but 1078 household heads accepted to participate in the interviews. Five hundred and twenty nine (49.1%) were from urban and 548 (50.9%) from rural. However one record (questionnaire) was by mistake in the computer at a certain point of data analysis. The questionnaire did not capture information on how many interviewees were not the actual house head.

Table 1: General characteristics of respondents

Characteristics	Number	Percentage
Marital status		
Married	847	78.6%
Widowed/divorced	140	13.0%
Never married	56	5.2%
Orphan/child	34	3.2%

Settlement		
Rural	548	50.9%
Rural	529	49.1%
Gender		
Male	872	81.0%
Female	205	19.0%
Education status of respondents		
Senior primary	331	30.7%
Secondary	317	29.4%
Junior primary	223	20.7%
None	108	10.0%
Tertiary	98	9.1%
Source of water		
Tap	615	57.1%
Borehole	404	37.5%
Protected shallow well	38	3.5%
Protected spring	20	1.9%
Socio-economic status		
HH with at least a bicycle	323	30.0%
HH with at least a radio	792	73.5%
HH with at least a TV	197	18.3%
HH using electricity	28	21.2%
HH using paraffin	270	25.1%
HH using wood	579	53.8%

HH with cemented floors	631	58.6%
HH with mad floors	445	41.4%

4.2 ITN OWNERSHIP

Of the 1077 households included 742 (68.9%) had at least one ITN and 335 (31.1%) had none. In total there were 1402 ITNs in the sampled households of which 883 (64.0%) were rectangular in shape while 505 (36.2%) were conical in shape. Of all the rectangular ITNs, 98.4% (869) were green in colour while 1.6% (14) were white in colour. On the other hand, of all the conical ITNs, 93.0% (470) were blue in colour, 4.8% (24) were white and 2.2% (11) were green in colour.

It was also found that 70% (370 households) of the 529 households in the urban had ITNs while 68% (372) of 548 households in the rural had ITNs. Statistically there is no significant difference on ITN ownership between the urban and the rural (OR 1.1; 95% CL = 0.84, 1.44)

It was found that of all households (438) with at least an ITN in the urban area, 248 (56.6%) had rectangular ITNs and 190 (43.4%) had conical ITNs. Of all households (413) with at least an ITN in the rural area, 336 (81.3%) had rectangular ITNs and only 77 (18.7%) had conical ITNs.

4.3 ITNs THAT HOUSE HOLDS IN URBAN AND RURAL AREAS OF BLANTYRE WOULD PREFER TO OWN

Of all the respondents, 80.6% (866) indicated that they would prefer to own conical ITNs while only 19.4% (209) indicated that they would prefer rectangular ones. Of all the respondents, 76.0% (818) indicated that the colour of ITNs should be blue while 19.1% (206), 4.1% (44), and 0.8% (9) indicated that the colour of ITNs should be green, white and other respectively. These

choices of shape and colour were also strongly reported from the FGDs. All three sets of FGDs preferred conical shaped ITNs with a blue colour.

Table 2: Preference of shape in relation to settlement

	Preferred shape	
Settlement	**Rectangular**	**Conical**
Urban	18%	82%
Rural	21%	79%
Mean	19%	81%

Living in urban area does not influence choice of conical ITNs more than living in the rural. There is no significant difference between people living in urban and rural areas as far as preference of shape if ITNs is concerned (OR 0.83: 95% CL 0.61, 1.14; p=0.13).

Table 3: Preference of shape in relation to bed ownership

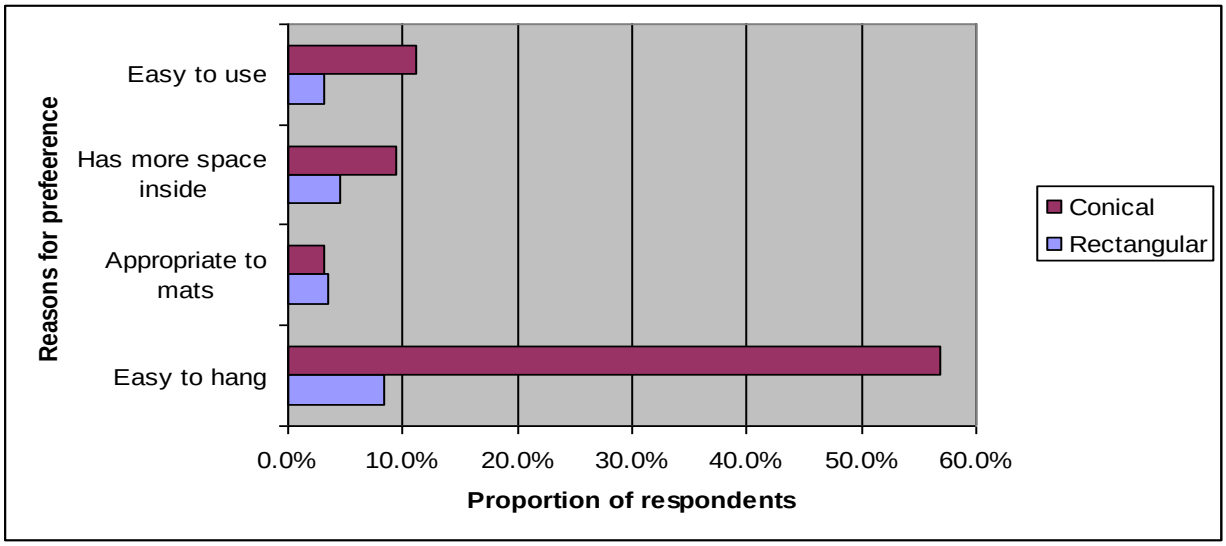
	Preferred Shape	
Bed ownership	**Rectangular**	**Conical**
Have a bed	14%	86%
Have no bed	28%	72%

Similarly, owning a bed on the other hand is significantly less associated with the preference of rectangular shaped ITNs than conical shaped ITNs (OR 0.43; 95% CL0.32, 0.60; p=0.000006) though bigger proportions of both groups have opted for conical ITNs as opposed to rectangular ones.

4.4 REASONS FOR PREFERRING AN ITN OF PARTICULAR SHAPE

There were four main reasons that were given as to why people like the shape preference. Of the 1075 respondents, 56.8% (611) indicated that they like conical ITNs because they are easy to hang while only 8.3% (90) indicated that rectangular nets are easy to hang. About 11% (120) indicated that they like conical ITNs because they are easy to use while only 3.1% (33) like rectangular ITNs because of the same reason. About 9% (102) indicated that they like conical ITNs because they provide more space inside while only 4.5% (49) like rectangular ITNs for the same reason. Refer to the graph for illustration.

Figure 1: Reasons for preferring a particular shape of ITN

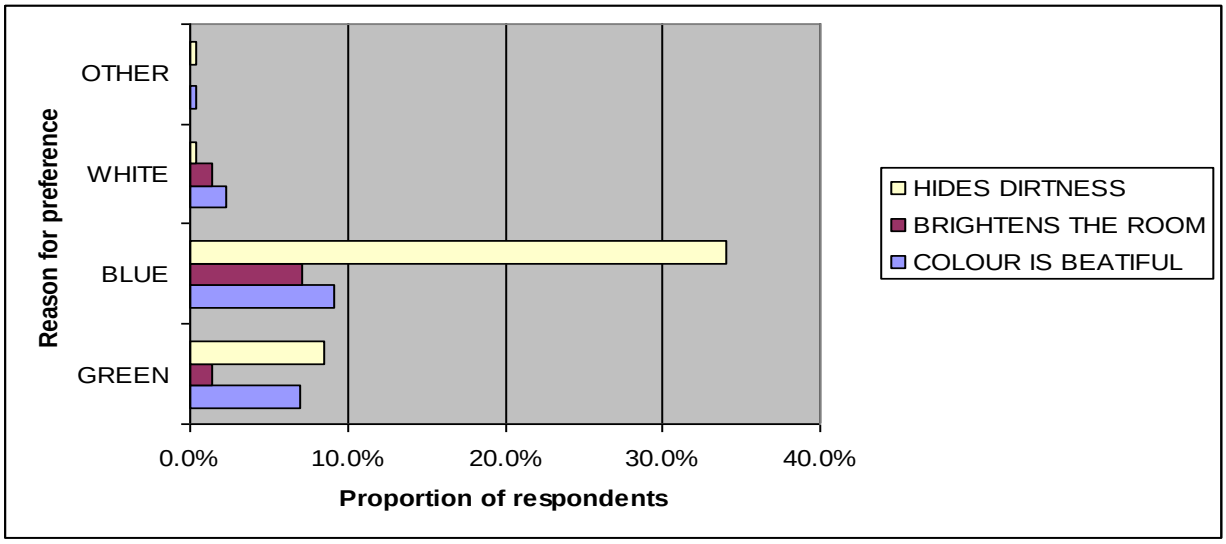


All the three sets of FGDs mentioned the same reasons. Some of the group members added that a person is able stand while in conical ITNs thereby making it possible to put on or take off cloths right in the ITN as opposed to when one uses a rectangular shaped ITN. Group members also mentioned that conical shaped ITNs are provided with enough skirting that makes it possible to withstand the rough edges of mats. Most people feel that rectangular ITNs cause damage to their walls due multiple nailing.

4.5 REASONS FOR PREFERRING AN ITN OF PARTICULAR COLOUR

Most households prefer the blue colour because; it hides dirtiness (34.1%), it makes the room beautiful (9.2%) and brightens the room (7%) against 1.4%, 8.5% and 7% respectively for green colour. Refer to the graph for illustration.

Figure 2: Reasons for preferring a particular colour



The preference for blue conical ITN shape was also reinforced during FGDs. Participants indicated that they prefer conical shaped ITNs due to several reasons. The first reason was that they easily fit in the small sleeping rooms in the villages. The second reason was that they do not damage the walls of sleeping rooms due to multiple nailing. The third reason was that it is easy to clean a room where there is a conical ITN than where there is a rectangular ITN because you can easily tie up the Conical ITN and work beneath it. The fourth reason was that when you hang a conical ITN, the room still looks tidy and bright as opposed to when there is a rectangular ITN.

4.6 BEDDING/SLEEPING PATTERN OF HOUSEHOLDS

The average size of the respondents' households was 4.8 members with an average of 2.2 sleeping rooms per household. The lowest number of households members was 1 and highest 15 with a standard deviation of 2.1. About 65% of the households had either one or two sleeping rooms only against an average number of household members of 4.8.

This situation clearly shows that household members share sleeping rooms. It is often that the ones who sometimes may need to share sleeping rooms may not share sleeping "bed" of reasons like sex and age. In this case, there will be need to use more than one ITN in one sleeping room. This situation then requires that the design of ITNs should be one that allows several of them (ITNs) to be used at once in the room. The design of the ITN should therefore be one that is economical with the available space to enable as many people as possible use ITNs in one room.

Sixty and half percent (652) of the households had at least a bed while 39.5% (425) of the households had no beds.

4.7 FEASIBILITY OF INSTALLING ITNs OF PREFERED SHAPE

Through the actual hanging of each shape of ITN in sleeping rooms by enumerators, it was established that it was possible to use rectangular ITNs in 63.1% (680) of the households and not suitable in 36.9% households. It was also established that it was possible to use conical ITNs in 73.8% (795) of the households and not suitable in 26.2% (397) of the households. This means that conical ITNs are suitable to most households in the district than rectangular ones. The suitability was being judged by looking at appropriateness of height of the roof and size of the room in relation to the fitting of the type of ITN. The main reason, therefore, for some sleeping

rooms not to be suitable for using rectangular ITNs was small size of the room (99.6%; N=237; 95% CL 0.94, 2.93).

Proportion of households with appropriate sleeping rooms for conical ITNs in urban areas is significantly higher that that of rural areas (odds ratio 1.6; 95% CL 0.93, 2.90 p= 0.043).

4.8 ATTITUDES/PERCEPTIONS/MYTHS/BELIEFS OF PEOPLE TOWARDS EACH SHAPE OF ITN

Through FGDs, it was observed that there are generally no beliefs connected to each shape of ITN. However some people have a feeling that the rectangular ITNs are for poor people and pregnant women. This therefore means that those who are not pregnant and feel that they are in higher socio-economic status cannot use them. On the other hand, this could mean that distribution of conical ITNs will encourage the other groups (non pregnant and higher socio-economic status) to own and use ITNs. Most people feel that all the shapes of ITNs promote hotness during sleeping. They also feel that ITNs cause discomfort in breathing during sleeping. Of most people admitted to have sometimes used ITNs when mosquito populations have risen to an extent that they disturb sleeping through biting especially in rain season.

4.9 RELATIONSHIP BETWEEN PREFERENCE OF SHAPE AND SOCIAL STATUS OF HOUSEHOLDS (IN TERMS OF EDUCATION AND WEALTH).

It has been observed that more people in all social statuses prefer conical ITNs and blue colour than those opting for rectangular ITNs and green or other colours. This preference was similar across all education levels. Refer to the graphs.

Figure 3: Relationship between choice of shape of ITN and level of education

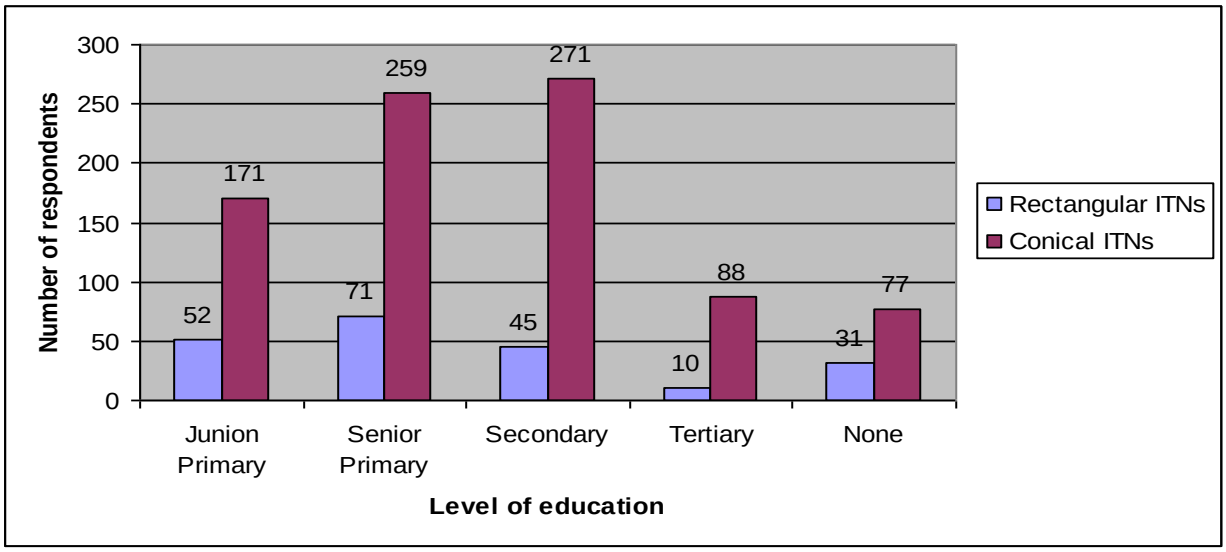


Figure 4: Relationship between choice of colour of ITN and level of education

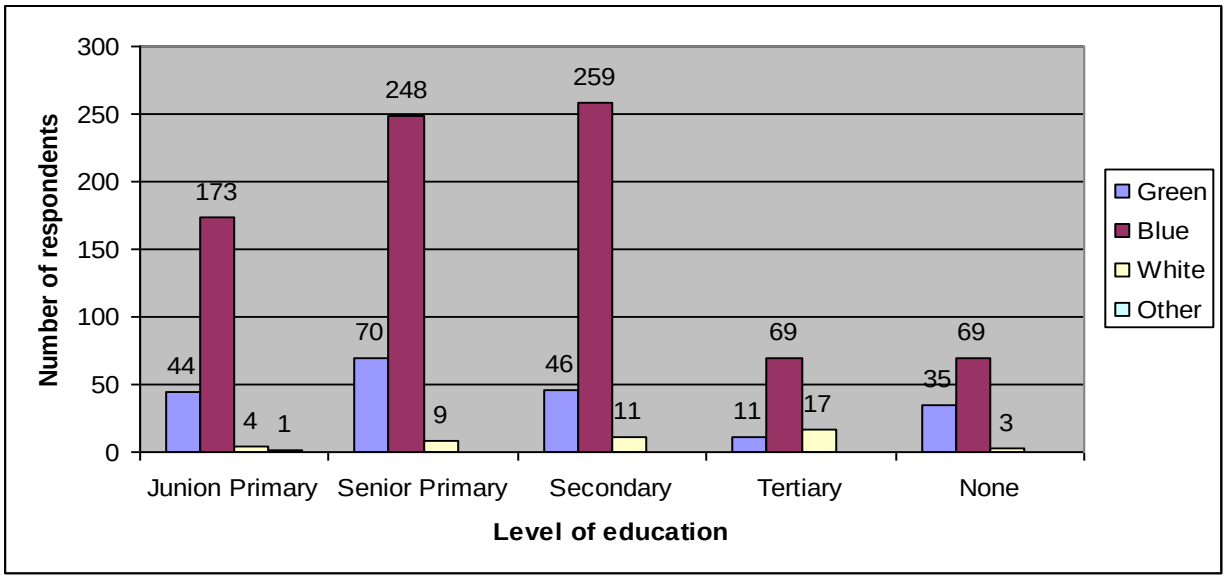
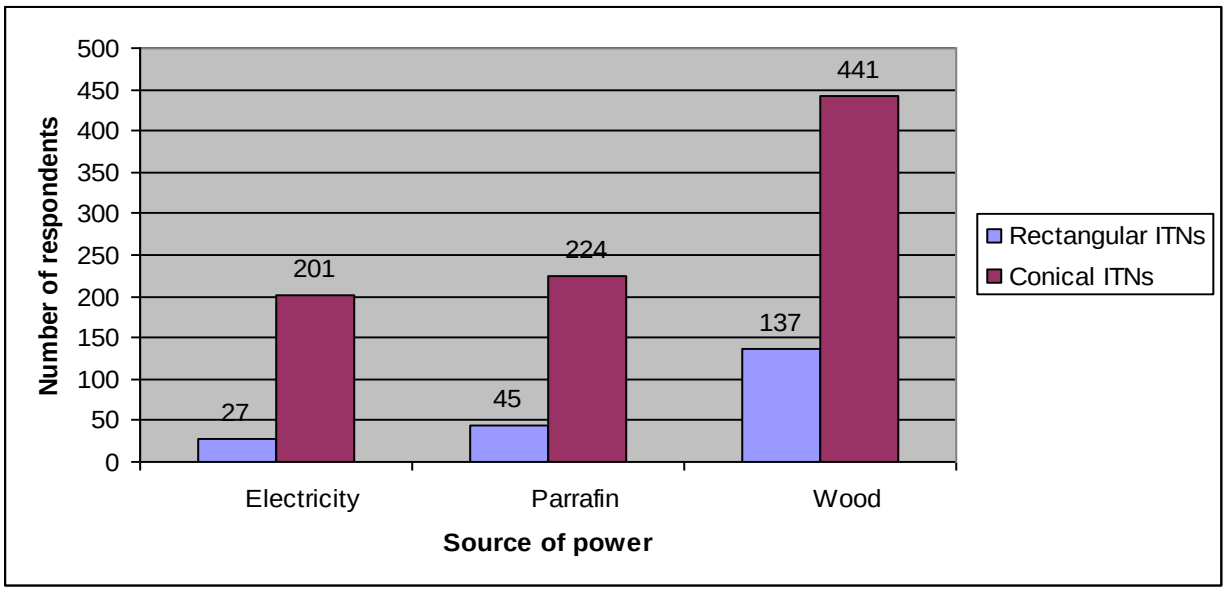


Figure 5: Relationship between choice of shape of ITN and Socio-economic class according to source of power



Owning items like bicycle (odds ratio 0.83; 95% CL 0.58, 1.18; p=0.16), radios (odds ratio 0.66; 95% CL 0.47, 0.92; p=0.01), television (odds ratio 0.27; 95% CL 0.14, 0.48; p=00) and cemented floor (odds ratio 0.62; 95% CL 0.45, 0.85; P=0.00) are not likely associated with influence on the choice of the conical shaped ITNs. In fact in other cases not having the items is more associated with opting for the conical shaped ITNs like in cases of not having a radio, television and cemented floor.

CHAPTER 5

DISCUSSION

The study clearly shows that most households in Blantyre, both rural and urban prefer conical shaped ITNs with a blue colour. The study has also shown that the conical shaped ITNs are suitable for the sleeping pattern of the households in the Blantyre district. Households prefer conical shaped ITNs mainly because of their easiness to install. Blue colour is favoured because it makes a room look bright while at the same time hiding some dirtiness. Higher social-economic status as indicated by having a radio, television, bicycle, cemented floor, electrified house and higher education status does not influence the choice of conical shaped and blue ITNs. The preference is even stronger in the lower social-economic status groups than in higher social-economic stats groups. There is no myth or negative traditional beliefs related to either conical or rectangular shaped ITNs

Our findings of 80.6% households preferring conical shaped ITNs compared to rectangular shaped is similar to findings in the Malawi Demographic and Health Survey (MDHS) of 2004 [12] where it was observed that 43% of the respondent who did not own ITNs at the time of the survey preferred blue to be the colour of ITNs, 40% preferred green and 17% preferred other colours. It was also observed that there were more respondents (50%) who preferred conical shaped ITNs than those (40%) preferring rectangular shaped ITNs. and other colours (9%). However DHS did not make an attempt to explore reasons for the respondents' preference

This study found that there were four main reasons why people like the shape of choice. Majority of the households (56.8%) prefer the conical ITNs because they are easy to hang while 11% indicated that they like conical ITNs because they are easy to use. These proportions are against

8.3% and 3.1% for rectangular ITNs respectively. Efforts to obtain findings from other studies on this subject failed. It appears that there have not been many studies conducted related to reasons for preferring differences in shapes of ITNs. However from the findings of this study, it has been shown that provision of a shape of ITN that the communities feel that it is easy to hang or use will have a positive influence on usage.

Households' membership of 4.8 is comparable to 4.4 finding of DHS 2004. [11] The mean number of household members of 4.8 is high if we consider that there are only 2.2 rooms per household. This then clearly shows that most household members share sleeping rooms. The National Statistics office during the 1998 also found that Blantyre has 1.25 up to over 1.6 persons per room. [12] If the people sharing the room cannot share a sleeping bed then more than one ITN will be needed in one room. This situation therefore, requires an appropriate ITN design that will allow several ITNs to be used in the sleeping room at the same time. Sometimes the sleeping rooms including some sitting rooms of which installation of the ITNs is done every night. These sleeping conditions require an ITN shape that can easily be installed and removed. The shape that can suit these conditions is conical.

Through the actual hanging of each shape of ITN in sleeping rooms by enumerators it was found that it was possible to use conical ITNs in 73.8% of the households while on the other hand it is possible to use rectangular ITNs in 63.1% of the households. This is contrary to the findings of NMCP that recommended that rectangular ITNs are more suitable in Malawi than conical shaped ITNs. The findings of this study are more credible than that of NMCP because of methodology used. The study had representative sample that was systematically selected as opposed to the FGDs done by the NMCP. This study used three data collection methods. The first was that of

interviews to collect quantitative data. This method was complimented by the actual fixing of the ITNs as the second method of data collection. The third method was the FGDs which collected qualitative data on the same subject matter. The FGDs by NMCP only collected qualitative data from an unrepresentative sample.

Though conical shaped ITNs have been found to be fitting in most of the households (73.8% of the households), there is still the 26.2% proportion of the households that are neither suitable to them nor the rectangular shaped ITNs but these households still need to be protected from malaria through other means if malaria transmission is to be fully controlled. Malaria control efforts are therefore, not enough if the 26.2% proportion is not considered for their best option of malaria transmission control.

The findings of this study from the FGDs that most people feel that all the shapes of ITNs promote hotness during sleeping are similar to the findings in Togo. Most people in Togo did not use ITNs during the night of the survey because the weather was hot. [8] Other studies have also been conducted in Malawi but are not published making it difficult to access the information.

Owning items like bicycle, radios, television and having a cemented floor do not influence choice of the conical shaped ITNs. This is contrary to perception of NMCP that rural poor people should be provided with rectangular ITNs. Commercial ITNs, which are meant for higher socio-economic status population, are conical shaped and blue in colour. However from the findings, it is clear that all socio-economic classes would like to own the conical shape ITNs blue in colour. Now that the factors that prohibit the provision of conical ITNs to low socio-economic

populations have been studied and found out that they are not as prohibitive as previously thought, it is now time that the decision should be reconsidered.

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

6.1 CONCLUSION

Findings of the study have shown preferences of people in Blantyre on the shape and colour of ITNs that they would like own. This is very important because it is not good to impose on people products that they do not like. This may lead to abuse of the products especially now that the ITNs are mostly given at 100% subsidy. Authorities should take the findings of the study into consideration as they are thinking of strategies of encourage proper use of the free ITNs. If the findings are considered then the policy to distribute rectangular shaped ITNs green in colour in Blantyre will change and people will be using ITNs of their choice of colour and shape thereby promoting proper and consistence use. If more people are will consistently using ITNs, for sure malaria transmission will decrease thereby reducing malaria morbidity.

6.2 RECOMMENDATIONS

From the findings it has been established that it is possible to use rectangular ITNs in 63.1% (680) of the households and not suitable in 36.9% households. It has also been established that it is possible to use conical ITNs in 73.8% (795) of the households and not suitable in 26.2% (397). This means that the 26.2% proportion of the households not suitable to conical ITNs will obviously not be suitable to rectangular ITNs as well. I therefore recommend that this 26.2% proportion of households that is neither suitable to conical nor rectangular shaped ITNs should be considered for other malaria control measures like use of treated curtains or residual house spraying.

It is also recommended that the same study be repeated in other districts so that preferences could be taken from a wide range of communities.

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APPENDICES

Appendix 1

INTERVIEW GUIDE FOR FOCUS GROUP DISCUSSIONS

1. Which methods for malaria transmission control are you aware of?

2. Which types of ITNs do you know?

3. Which type of ITN do you prefer to own or use?

4. Why do you prefer this kind of ITN?

5. What are the attitudes/perceptions/myths/beliefs of people toward all or any kind of an ITN that prevent their usage?

6. Can reinforcement of distribution of your preferred type of ITN promote usage?

Appendixly2

DETERMINATION OF TYPE OF NETS TO BE DISTRIBUTED
IN RURAL AND URBAN BLANTYRE

HOUSEHOLD QUESTIONNAIRE

DISTRICT: _____ TA: _____ EA: _____ ☐ ☐ ☐

VILLAGE/LOCATION: _____ ☐ ☐

SETTLEMENT: URBAN ☐ RURAL ☐

HOUSEHOLD NUMBER: ☐ ☐

DATE OF SURVEY: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

PART 1: HOUSEHOLD GENERAL INFORMATION			
1	Sex of household head 1. Male 2. Female	☐	
2	Status of household head 1. Married 2. Widowed/Divorced 3. Single 4. Orphan	☐	
3	Educational status of household head 1. Junior Primary 2. Senior Primary 3. Secondary 4. Tertiary 5. None	☐	
4	Total number of household members	☐	
5	Total number of U/5 children WCBA Other household members in the house	☐ ☐ ☐	
6	Total number of sleeping rooms	☐	
7	Does the household own 1. Bed Y=1, No= 2	☐ Number ☐	If Yes indicate number

	2. Bicycle	☐ Number ☐	If Yes indicate number
	3. Radio	☐ Number ☐	If Yes indicate number
	4. Television Y=1, N=2	☐ Number ☐	If Yes indicate number
	5. None of the above = 0	☐	
	6. Source of water	T☐ B☐ PSW☐ PS☐ Other, specify: _____	Tick whatever available { √ } T= Tap, B=Borehole, PSW = Protected shallow well, PS=Protected spring.
	7. source of power	E☐ W☐ Par☐ Other specify: _____	Tick whatever available { √ } E= Electricity W=Wood Par= Paraffin
	8. Type of flooring	Cement☐ Mud☐ Other, specify: _____	Tick whatever available { √ }
PART II: ITN OWNERSHIP AND USAGE			
8	Does the household own at least an ITN? 1. Yes 2. No	☐	If 2, go to Q.12
9	How many ITNs by type does the household own by type? 1. Rectangular ☐ 2. Conical ☐	Number☐ Colour☐ Number☐ Colour☐	Rectangular = 1, Conical=2 Green = 1 Blue = 2 White = 3 Other = 4 (Specify)
10	How many of the following slept under an ITN last night? WCBA Under five children Other household members	☐ ☐ ☐	
11	When were the ITNs last treated? Last 6 months Last 12 months	Last 6 months: ….☐ Last 7-12 months…☐ Last 13-18 months..☐	Tick whatever applicable { √ }

	ITN 1 Last 18 months Last 24 months Never	Last 19-24 months .. Last 25 months and over	
	Last 6 months Last 12 months ITN 2 Last 18 months Last 24 months Never	Last 6 months: …. Last 7-12 months… Last 13-18 months.. Last 19-24 months .. Last 25 months and over	Tick whatever applicable { √ }
	Last 6 months Last 12 months ITN 3 Last 18 months Last 24 months Never	Last 6 months: …. Last 7-12 months… Last 13-18 months.. Last 19-24 months .. Last 25 months and over	Tick whatever applicable { √ }
	Last 6 months Last 12 months ITN 4 Last 18 months Last 24 months Never	Last 6 months: …. Last 7-12 months… Last 13-18 months.. Last 19-24 months .. Last 25 months and over	Tick whatever applicable { √ }
	Last 6 months Last 12 months ITN 5 Last 18 months Last 24 months	Last 6 months: …. Last 7-12 months… Last 13-18 months.. Last 19-24 months .. Last 25 months and over	Tick whatever applicable { √ }

	Never		
	Last 6 months Last 12 months ITN 1 Last 18 months Last 24 months Never	Last 6 months: …. Last 7-12 months… Last 13-18 months.. Last 19-24 months .. Last 25 months and over	Tick whatever applicable { √ }
PART III: HH PREFERENCE ON SHAPE OF ITN AGAINST FEASIBILITY OF INSTALLATION			
12	Which shape of net do you prefer or you 1. Rectangular 2. Conical		
13	Which colour of your net of choice would you prefer?		Write name of colour mentioned
14	Is it possible to install a net of preferred shape in the sleeping 1. Yes 2. No		Check for roof height, size of room. Comments: _____ _____ _____ _____
15	Is it possible to install more than one rectangular ITN at once in one room 1. Yes 2. No		If 2, state Why: _____ _____ _____ _____
PART IV: REASONS FOR THE PREFERENCE			
16	Why do you prefer the shape of ITN you have chosen	_____ _____ _____ _____ _____	
17	Why do you wish the colour of ITN to be the one you have chosen?	_____ _____ _____ _____ _____	
PART V: USAGE OF ITNS (for households with ITNs only)			
18	How many ITNs were used last night?		
19	How many slept under an ITN last night? <5 years children		

	WCBA Other household members		
20	If some nets were not used, what are the reasons for not using them?	_____ _____ _____ _____	

Name of Interviewer: _____ Date: _____/_____/200___

Checked by: _____ Date: _____/_____/200___

Supervisor

Appendix 3

CONSENT LETTER FOR TRADITIONAL AUTHORITIES AND VILLAGE HEAD MEN

DETERMINATION OF PREFERENCE ON THE TYPE OF ITNs TO BE DISTRIBUTED IN RURAL AND URBAN BLANTYRE

CONSENT FORM FOR TRADITIONAL AUTHORITY AND VILLAGE HEADMEN (ENGLISH VERSION)

Investigator

Young Samanyika BSc in Environmental Health, MPH student, College of Medicine

The Purpose of Research

In Malawi, Malaria remains one of the leading causes of morbidity and mortality. It causes about one out of three hospital admissions of underfive deaths, two out of five underfive admissions and one out of three outpatient attendees. The Ministry of Health recommends that every person and with emphasis on pregnant women and underfive children should be sleeping under an ITN. For this to be achieved, the government subsidized the cost of the ITNs to be affordable by the majority of poor Malawians. Some of the people will also be getting them free. The issue now at hand is the shape of ITNs that are being distributed. Rumours indicate that the rectangular shape of subsidized ITNs is not liked by many people and there are fears that this may reduce the usage rate. This study therefore has been designed to determine the preference of people on the shape of ITN that they would like to be distributed in rural and urban areas of Blantyre district.

The Study

I am therefore asking your permission to allow your area to be part of the study areas where the following are being investigated: (1) peoples preference on type of ITNs to be distributed, (2) reasons for the preference (3) beliefs/attitudes about ITNs (4) establish feasibility of installation and (5) relationships between preference of type and Socio-economic status.

The study will involve asking household heads some questions to find out their opinion on the topic of the study and inspect their sleeping rooms to find out feasibility of installing the type of ITN of their choice.

Risks

There will be no risk to this study.

Benefits

The results of the study will help Ministry of Health to be distributing ITNs of the peoples' choice.

Confidentiality

Any findings and observations obtained from you and your household will be kept confidential at all times.

Further Questions

You may contact the following persons for answers to further questions about the research, your rights, or anything you may feel is related to the study.

Mr Y. Samanyika on 09557170, Prof. Joseph Mfutso-Bengo on telephone number 01671911 or the District Health Officer (Dr. M. Nkhoma) on telephone number(s) 01872551 or 09946711. If you do not have access to a phone you may go to the office of the District Health Officer.

Consent of subject

I have read (or been informed) of the information given above. I understand the meaning of this information. I hereby consent to participate in this study.

Subject

Signature_____ Date____/____/____

Thumb Print _____

Appendix 4

CONSENT LETTER FOR HOUSEHOLD HEADS

DETERMINATION OF PREFERENCE ON THE TYPE OF ITNs TO BE DISTRIBUTED IN RURAL AND URBAN BLANTYRE

CONSENT FORM FOR HOUSEHOLD HEADS AND FGD PARTICIPANTS (ENGLISH VERSION)

Investigator

Young Samanyika BSc in Environmental Health, MPH student, College of Medicine

The Purpose of Research

In Malawi, Malaria remains one of the leading causes of morbidity and mortality. It causes about one out of three hospital admissions of underfive deaths, two out of five underfive admissions and one out of three outpatient attendees. The Ministry of Health recommends that every person and with emphasis on pregnant women and underfive children should be sleeping under an ITN. For this to be achieved, the government subsidized the cost of the ITNs to be affordable by the majority of poor Malawians. Some of the people will also be getting them free. The issue now at hand is the shape of ITNs that are being distributed. Rumours indicate that the rectangular shape of subsidized ITNs is not liked by many people and there are fears that this may reduce the usage rate. This study therefore has been designed to determine the preference of people on the shape of ITN that they would like to be distributed in rural and urban areas of Blantyre district.

The Study

I am therefore asking you to participate in this study which is investigating (1) peoples preference on type of ITNs to be distributed, (2) reasons for the preference (3) beliefs/attitudes about ITNs (4) establish feasibility of installation and (5) relationships between preference of type and Socio-economic status.

The study will involve asking you some questions to find out your opinion on the topic of the study and inspect your sleeping rooms to find out feasibility of installing the type of ITN of your choice.

Risks

There will be no risk to this study.

Benefits

The results of the study will help Ministry of Health to be distributing ITNs of your choice.

Confidentiality

Any findings and observations obtained from you and your household will be kept confidential at all times.

Further Questions

You may contact the following persons for answers to further questions about the research, your rights, or anything you may feel is related to the study.

Mr Y. Samanyika on 09557170, Prof. Joseph Mfutso-Bengo on telephone number 01671911 or the District Health Officer (Dr. M. Nkhoma) on telephone number(s) 01872551 or 09946711. If you do not have access to a phone you may go to the office of the District Health Officer.

Consent of subject

I have read (or been informed) of the information given above. I understand the meaning of this information. I hereby consent to participate in this study.

Subject

Signature_____ Date____/____/____

Thumb Print _____