

Net Ownership vs. Use: What Makes a Difference?

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Background

When nets go unused, they limit the impact of increased net coverage. For example, net ownership doubled in Nigeria from 2000 to 2004, but there was a much more modest increase in the percent of children sleeping under a net. Some countries or programs need to emphasize use of nets in behavior change communication, but to do that they first need to understand what makes a difference between a net that is used and a net that is not used.

Some reasons given for not using nets:

- Nets are too hot or uncomfortable
- There are not many mosquitoes
- Problems hanging net
- Net is dirty, old or in poor condition
- Net is used by visitors or an absent household member

In our survey, we did not ask net owners why they did or did not use a net, but we hypothesized that certain net characteristics would influence net use.

We hypothesized that:

- Treated nets would be more used than untreated nets
- Newer nets would be used more than older nets
- Nets that were paid for would be used more than free nets
- Larger nets would be used more than smaller nets
- Nets that were the specific brand or type sought by the respondent would be used more than nets chosen for other reasons
- As the number of nets in a household increased, their likelihood of being used would decrease
- Nets would be used more in rural and low SES households, where use of screens and other mosquito control products is lower

We also tested other variables that might affect net use such as shape and source of the net and whether the net was made in a factory or by a tailor.

Methodology

Sample

- Household survey in Nigeria, Senegal, Zambia, Ghana, Ethiopia in 2004

Respondents

- Women aged 15-49 who were mothers/guardians of children under five years of age
- 40% from urban center; 60% from rural areas up to 200km away

Country	# of HH	# of nets
NIGERIA: Lagos, Ibadan, Kano, Maiduguri, Nsukka	3590	1243
SENEGAL: Dakar, Thies, St. Louis, Kaolack, Tambacounda	2000	2579
ZAMBIA: Lusaka, Choma, Kaoma, Kitwe, Mansa	2000	1734
GHANA: Accra, Keta, Kumasi, Wa, Tamale	1500	808
ETHIOPIA: Bahir Dar, Nazareth, Dire Dawa, Dessie, Awassa	1000	341

Analysis

We used the chi-square statistic to test whether use was related to each variable in each country. The tables below show variables with a significant difference ($p < 0.05$) in at least one country. Each row lists a variable, and the cells show the percentage point difference in higher or lower net use for the reference category of that variable. For example, in Ethiopia 69% of ITNs were used the night prior to the survey, compared to 55% of nets that were not ITNs, which is represented by statistically significant +14% (see Table 1).

Findings

Figure 1: Percent of nets used the prior night

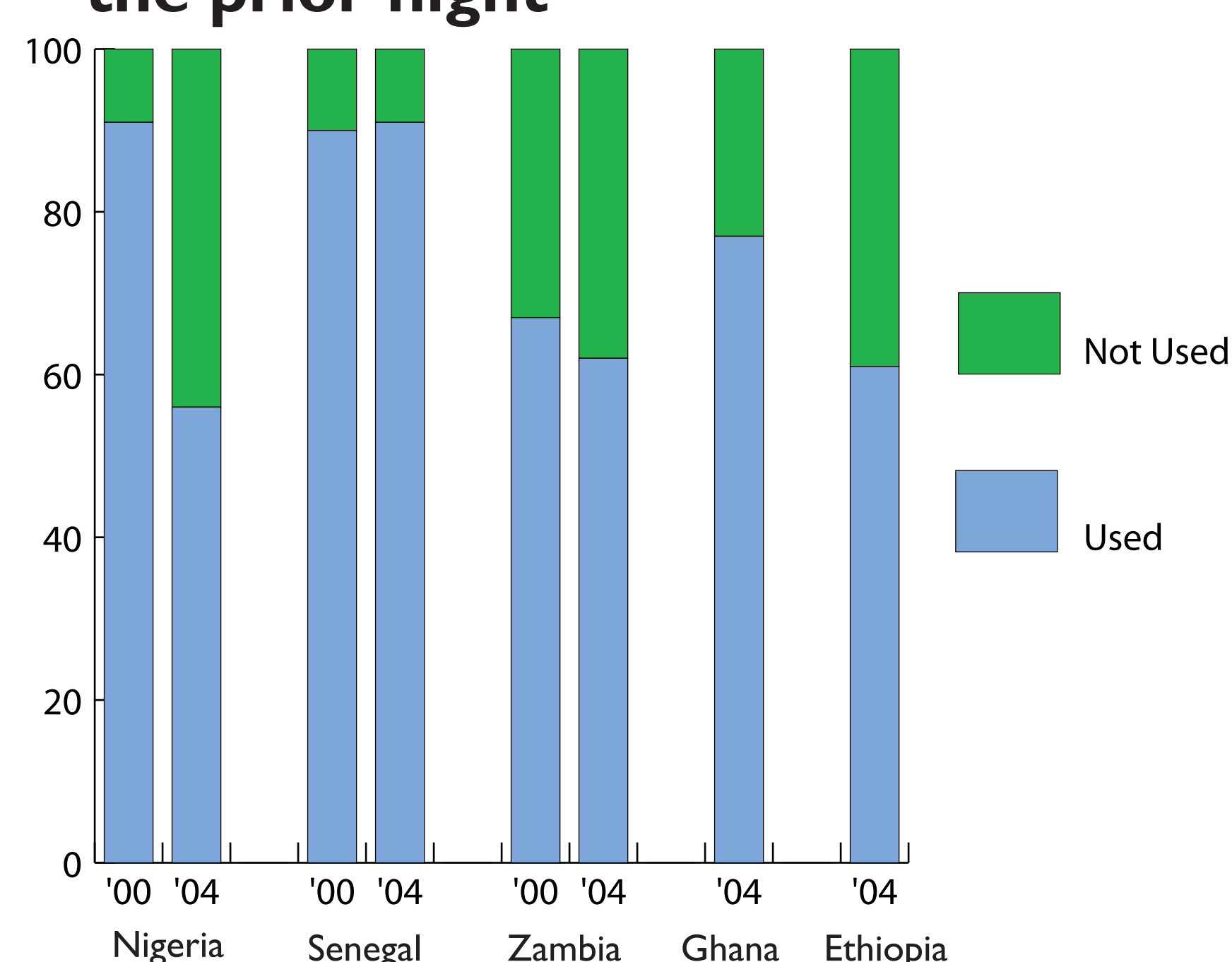


Table 1: Treatment status of net

	Nigeria	Senegal	Zambia	Ghana	Ethiopia
ITN	+9*		+7*	+6*	+14*
Ever-treated	+6		+6*	+5*	+30*
Post-treated	+18*	+6*	+9*	+9*	+30*
Bundled	+9*	+4	+9*	+3	+9
Pre-treated	-9*				+7

* $p < 0.05$

Currently treated, ever treated, post-treated and bundled nets were more likely to be used than nets that were not treated
Pretreatment was less important

Table 2: Net acquisition □ □

	Nigeria	Senegal	Zambia	Ghana	Ethiopia
Paid (vs. free)	+15*	+16*	+6	+17*	+22*
Chose specific brand (vs. choose not for any other reason)					+33*

* $p < 0.05$

Nets paid for are used more than free nets
There was no consistent pattern in use by source of nets
Reasons for choosing a net varied and getting the desired type or brand was associated with use only in Ethiopia

Table 3: Net attributes

	Nigeria	Senegal	Zambia	Ghana	Ethiopia
New (vs. >2 years old)	+7*		+14*	+7*	
Triple/king (vs. single)	+11*	+9*	+27*		-16*
Net 1 (vs. Net 4)	+9	+4*	+17*	+35*	

* $p < 0.05$

Smaller nets were used more in Ethiopia; newer and larger nets were used more elsewhere
Use decreases as number of nets increases

Table 4: Demographic variables

	Nigeria	Senegal	Zambia	Ghana	Ethiopia
Urban (vs. rural)	-5*	-8*	+26*		+12*
Urban capital (vs. other urban)	+11*	-11*	-9*	-23*	NA
SES 5 (vs. 1)	-22*	-13*	+24*	-7	

* $p < 0.05$

Nets in urban and upper SES HH used more in Zambia
Nets in rural and lower SES HH used more in Nigeria and Senegal
Use in urban Accra, Dakar and Lusaka was lower than other urban areas, but in urban Lagos was higher

Variables showing little or no difference

- Tailor-made vs. factory-made nets
- Who acquired net
- Shape
- Color

Conclusions

Findings on use of nets

- Most nets are used, but promoting use of nets needs greater emphasis in some countries.
- Nets are used more often when they are paid for.
- Treated nets are used more than untreated nets.
- SES and urban/rural residence play an important - but different - role in each country.
- In countries with more unused nets, rapid field research is needed to understand barriers to net use and develop locally-appropriate strategies to overcome them.

