Intra-Household Mosquito Net Use in Africa: Are nets being used? Who in the household uses them?

Carol Baume, PhD; Celeste Marin, MPH; Roshelle Payes, BSFS NetMark, Academy for Educational Development

Background

In the past five years there has been a large increase in the number of households in Africa in owning a mosquito net. Nets, particularly insecticide-treated nets (ITNs), have been promoted to protect those most susceptible to severe malaria: children under five and pregnant women. However, increased ownership of mosquito nets will reduce malaria morbidity and mortality only if the nets are used and the most vulnerable household members sleep under them. To what extent are nets that are owned actually used? If a household owns a net, which household members are most, and least, likely to sleep under it? How many family members sleep under a net and what are the most common groupings under a net?

Methodology

Household survey

- 2000 & 2004 Nigeria, Senegal, Zambia
- 2003 Mali
- 2004 Ghana, Ethiopia
- 2006 Uganda

Sample

- 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

The survey enumerated household members and collected information on age, gender and pregnancy status. The graphs below show which members in net-owning households slept under a net the night prior to the survey. Baby nets are included for children less than two years old. The analysis was conducted ONLY among net-owning households.

	Number of households				Number of people in net-owning households			
	2000	2003	2004	2006	2000	2003	2004	2006
NIGERIA: Lagos, Ibadan, Kano, Maiduguri, Nsukka	1000		2000		588		3043	
SENEGAL: Dakar, Thies, St. Louis, Kaolack, Tambacounda	1000		2000		2682		10538	
ZAMBIA: Lusaka, Choma, Kaoma, Kitwe, Mansa	1000		2000		1044		6203	
GHANA: Accra, Keta, Kumasi, Wa, Tamale			1500				2987	
ETHIOPIA: Bahir Dar, Nazret, Dire Dawa, Dessie, Awassa			1500				1244	
UGANDA: Kampala, Masaka, Mbarara, Hoima, Soroti	1000			2000	1578			5367
MALI: Bamako, Kayes, Segou, Sikasso, Mopti		1000				4311		

Results

Net use by household members

• In all countries, vulnerable household members were most likely to be under the net: children under five and especially those under two, and pregnant woman (see Figure I). The exception was Ethiopia, where fewer pregnant women than non-pregnant women of reproductive age slept under a net.

• Adult males and children 5-14 are least likely to be under the net.

• There were no gender differences in childhood net use.

• Among under-fives, net use was highest for those in the < 2 and dropped off in most counties by ages three and four (see Figure 2).

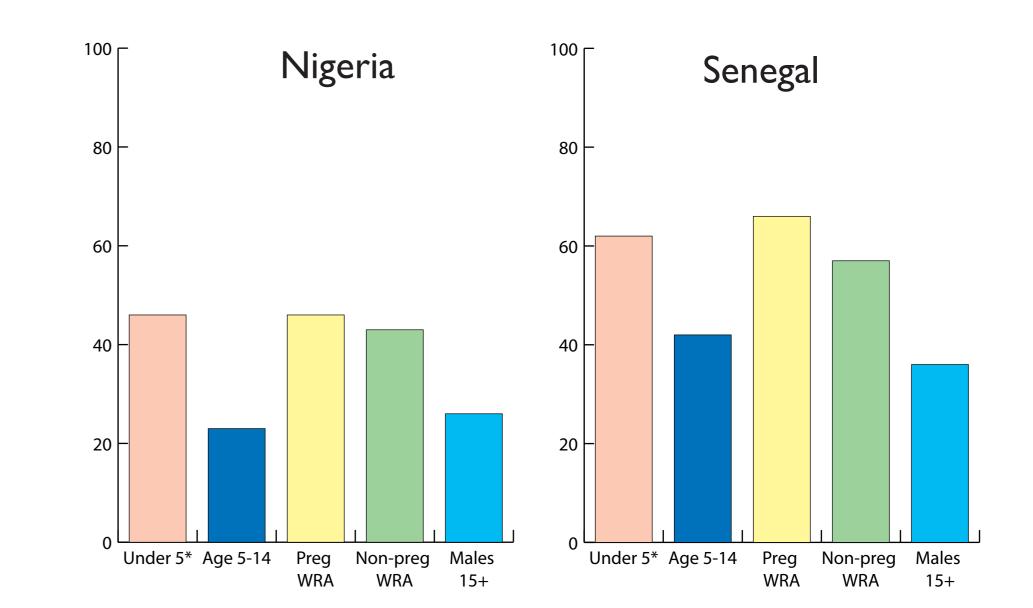
• Nets cover 2-3 people in all countries except Nigeria, where they cover 1-2 people. Across countries, the mean number of people under a net is greater in rural than urban households.

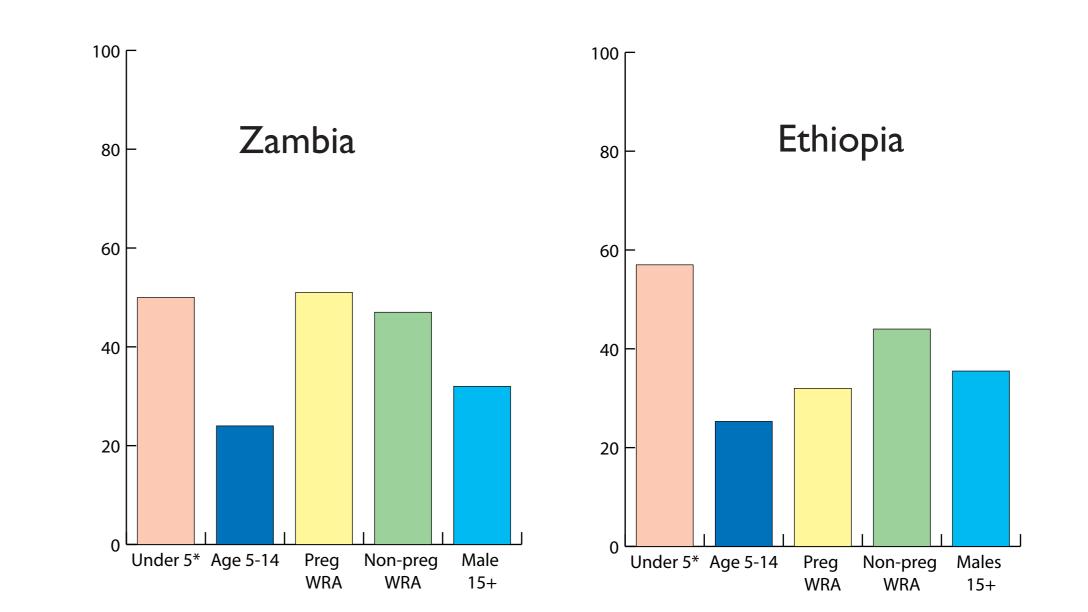
• In all countries except Senegal, a sizeable minority of nets that are owned are not being used (see Figure 3).

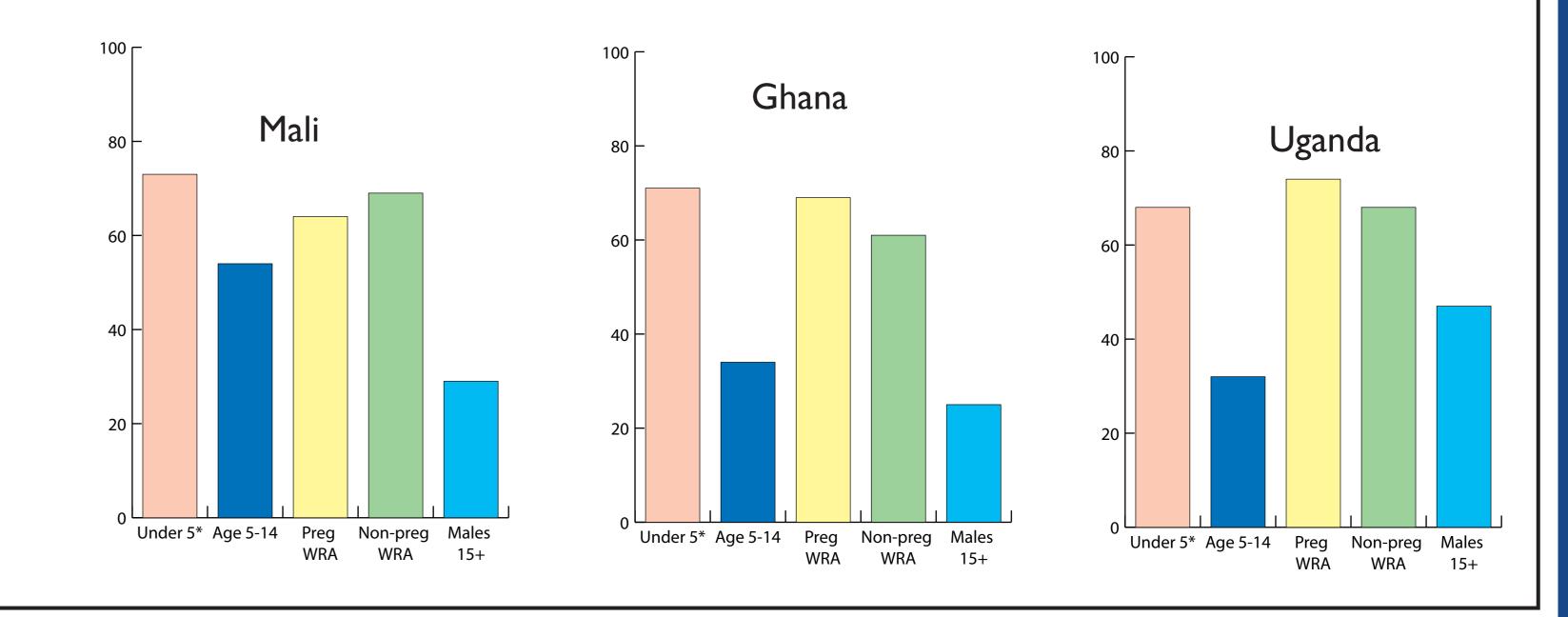
Figure 2: Percent of under-fives (in net-owning households) sleeping under a net, by yearly cohort

100 –

Figure I: Percent of household members who slept under a net the prior night, among net-owning households







I 20 ┌

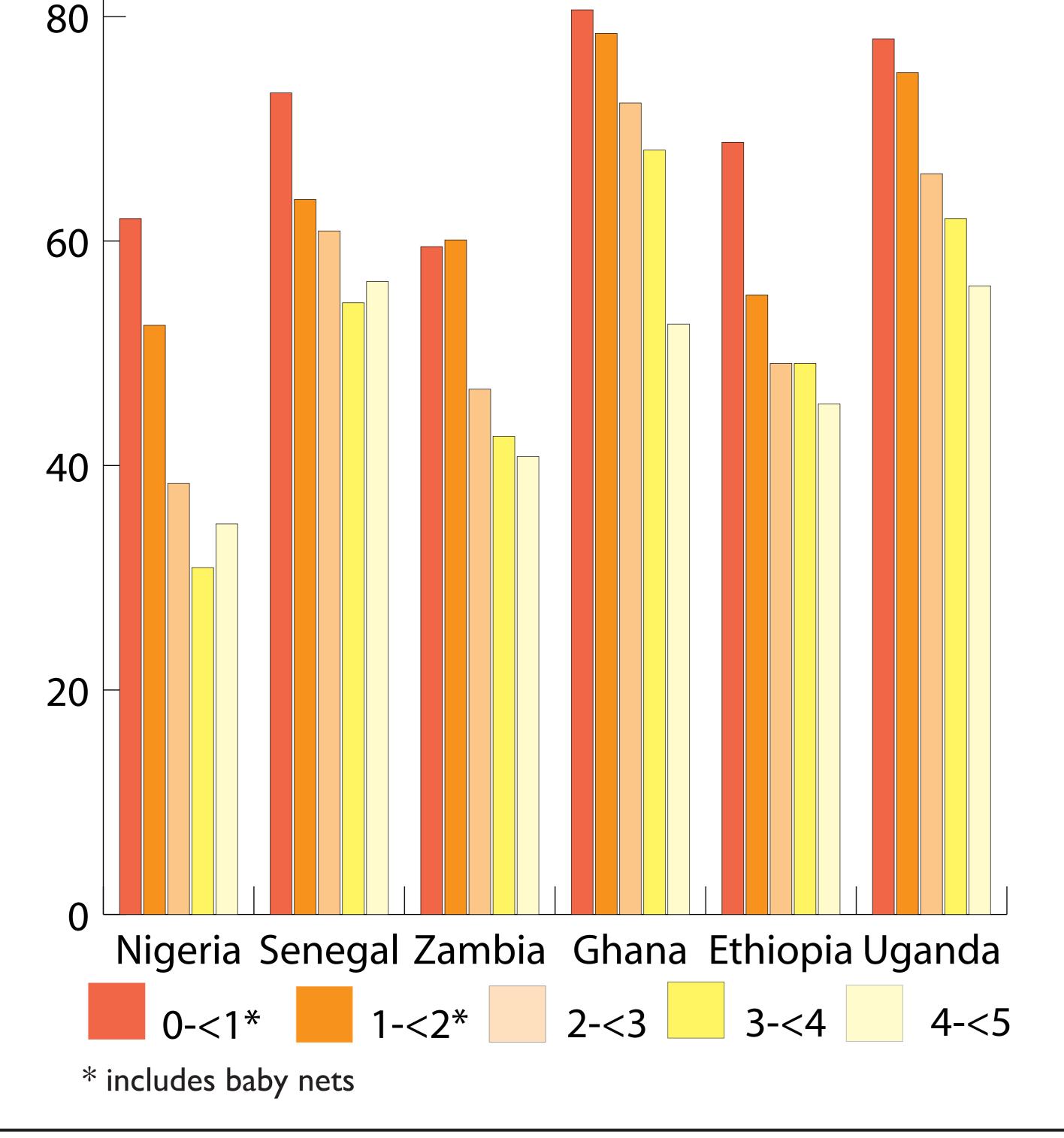


Figure 3: Percent of nets used the prior night

Net allocation over time

• In 2000, household net allocation patterns were generally good and in 2004 they were even better, with higher levels of net use by vulnerable groups.

• In Nigeria, the percent of under-fives and pregnant women under a net in netowning households decreased since 2000 due to a larger number of unused nets, although these two groups were still more likely than other household members to be under a net.

• A pregnant woman is now more likely to use the household net than she was in 2000. In Zambia, the proportion of pregnant women under a net increased dramatically from 2000 to 2004, rising from 18% to 51%.

Conclusion

Contrary to a popular belief that men are most likely to use household nets, our data show that the most vulnerable groups -- children under five and pregnant women -- are most likely to sleep under the net. ITN promotion programs need only periodically to reinforce messages about who should use the net, rather than make this a priority message. Programs need to find out why people do not use the nets they own and to devise ways to increase nightly use.

