

EXECUTIVE SUMMARY

NETMARK BASELINE SURVEY ON INSECTICIDE-TREATED MATERIALS NIGERIA

PURPOSE: Provide baseline measures of

- Knowledge and beliefs about mosquitoes and malaria
- Beliefs and attitudes about use of treated and untreated mosquito nets
- Access, affordability, and ownership of mosquito nets
- Net treatment practices
- Use of nets and treated nets by vulnerable groups: children under five, pregnant women, and women of reproductive age
- Consumer preferences regarding mosquito nets
- Usage and attitudes regarding mosquito control products

METHODOLOGY: Survey

SAMPLE: 1000 Nigerian households from 5 sites: Lagos, Ibadan, Nsukka, Maiduguri, and Kano. Target sample in each site was 200: 80 respondents from urban households, 60 from households within 100km, and 60 from households 100-200 km from the urban center. Respondents were women aged 15-49 who were mothers/guardians of children under five years of age.

DATA COLLECTION: October 2000

STUDY FINDINGS:

Knowledge and beliefs about malaria and mosquitoes

Recognition of the English term “malaria” was very high and knowledge of symptoms good; however knowledge about causes and vulnerable groups was somewhat low. Exposure to information about malaria prevention appears low and came mainly from health personnel, friends, or relatives.

- Almost all respondents (94%) reported having heard of the English term “malaria.” Sixty-two percent (62%) mentioned fever as a symptom; most named other symptoms that are also manifestations of malaria. Hardly any (1%), however, mentioned convulsions, a symptom of severe malaria. Only 55% knew that children under five and pregnant women are the groups most susceptible to severe malaria. Although the vast majority knew that mosquitoes cause malaria (81%), only 29% knew that mosquitoes are the *only* cause of malaria.
- Over half (60%) of the respondents had not received any information about avoiding malaria in the past 12 months. Among the 40% who had received information about malaria prevention, the main sources of information were health personnel (37%) and friends or relatives (33%). Eighteen percent (18%) of respondents had heard information *only* from non-professional sources (friends, neighbors, or relatives), rather than from more professional and presumably more reliable sources.

Perceived advantages and disadvantages of net use

Levels of perceived advantages of net use by vulnerable groups—children under five and pregnant women—were high, while levels of perceived disadvantages were relatively low. Nets were seen as providing good protection against mosquitoes and malaria. *Treated* nets were seen as especially effective, with the added advantage of killing and repelling mosquitoes. The main disadvantages of nets were discomfort from heat and inconvenience. Respondents cited stronger disadvantages of *treated* nets, voicing concern about the safety of the chemical and its smell.

- Almost all respondents (98%) perceived advantages for a child under five sleeping under a mosquito net. Most commonly mentioned advantages were “avoid getting bitten by mosquitoes”(79%); “avoid getting malaria” (31%); and to “sleep better” (19%).
- Sixty eight percent (68%) cited disadvantages for a child under five sleeping under a mosquito net. The most commonly mentioned disadvantages were “it is hot sleeping under a net” (27%); “it is difficult/inconvenient if the child has to get up in the night” (11%); “there is not enough air under the net” (10%); “child may suffocate” (8%); and “child may tear the net” (8%).
- Almost all respondents (95%) perceived advantages for a child under five sleeping under a *treated* net. The most commonly mentioned were “kills mosquitoes” (48%) and “works better against mosquitoes than an untreated net” (39%).
- Sixty one percent (61%) cited disadvantages for a child under five sleeping under a *treated* net. The most commonly mentioned disadvantages had to do with concerns about the safety of the chemical: the “chemical is dangerous” (18%), “causes cough/irritation” (13%), “causes illness” (11%), or even that it “can kill child” (9%).
- Almost all respondents (94%) perceived advantages for a pregnant woman sleeping under a *treated* net. The most commonly mentioned were “kills mosquitoes” (44%) and “works better against mosquitoes than net that has not been treated” (38%).
- Sixty five percent (65%) cited disadvantages for a pregnant woman to sleep under a *treated* net. The most commonly mentioned disadvantages had to do with smell and safety issues: “smell is bad” (20%); “chemical is dangerous” (17%); “might make the pregnant woman nauseated/vomit” (16%); “causes irritation/cough” (11%); and “chemical can kill fetus/cause miscarriage” (10%).

Access to mosquito nets

Access to nets was limited; it appears that few outlets carry them and consumers would have to travel fairly far to find them.

- The great majority (92%) of respondents said that the closest place they could purchase a net was an outdoor market, and that the average time to get to there would be approximately one hour by bus.
- Four percent (4%) said they did not know where to purchase a net, or that nets were unavailable.

Mosquito net ownership, treatment, and use

Net ownership in the study sites was somewhat low. Almost all nets had been obtained from informal commercial sources. Non-owners said that the main reason they did not own a net was cost. Although children under five and pregnant women are more likely than other family members to use nets, overall use of nets by vulnerable groups was low and nets were not used year-round. Awareness of *treated* nets was very low, and treatment of nets was virtually nonexistent.

- Twelve percent (12%) of households reported owning a mosquito net, although 25% of net-owning households owned more than one mosquito net. Households in the highest socio-economic status (SES) segment were more likely than other households to own a net.
- Few (7%) households had heard of treating mosquito nets with insecticide solution. Those from higher SES households were more likely to be aware of net treatments. Only one household reported owning a net that had been pretreated with insecticide before purchase, and no household had treated a net since purchase.
- About three-fourths (73%) of children under five in net-owning households slept under a net the prior night, representing 9% of all children under five in the households in the sample. Only one household reported owning a *treated* net, and one child under five in that household did sleep under the *treated* net the night prior to the interview. The proportion of net-owning households where all children under five slept under a net the prior night decreased the more children the household had.
- About half (47%) of women of reproductive age in net-owning households slept under a net the prior night, representing 6% of the total number of women of reproductive age in the households in the sample. Only one household reported owning a *treated* net. No woman of reproductive age slept under a *treated* net the night prior to the interview. Fifty-eight percent (58%) of pregnant women in net-owning households slept under a net the prior night, representing 7% of pregnant women in the households in the total sample. (The denominators for pregnant women, however, were very small.) None slept under a *treated* net.
- For those household members who did sleep under mosquito nets, the average number of months per year they slept under nets was 7.6.
- Two or three people usually slept under a large net.
- Over half (60%) of non-owners said they didn't own a net because they don't have enough money; another 22% said they did not like or need nets.

Characteristics of nets owned

Almost all nets were purchased in an open-air market. Most had been purchased within the past four years. Almost all were rectangular, and most were either single or double size; average price among all nets was 4.92 USD. Tailor-made (non-manufactured) nets were common. Nets are currently unbranded products; consumers were unaware of the brand. The vast majority of nets were reportedly washed at least every month.

- The vast majority of nets owned were purchased in the market (90%). Only those households in the highest SES segments purchased their nets from a formal commercial source (fixed store). Over one-fourth (28%) of household nets had been acquired within the past 2 years; 21% had been acquired five or more years ago.
- Households reported paying an average of \$4.92 USD per net (conversion based on the exchange rate for the dollar on the date of the data collection).
- A high proportion (38%) of nets owned were tailor-made, especially in Lagos, Ibadan, and Kano sites.
- Only 3% of nets were identified as being of an existing brand.
- The most common net sizes owned were single (35%) and double (31%). The most common shape was rectangular (93%).
- The vast majority of nets (91%) had been washed. Over three-fourths (77%) of nets that had been washed were reportedly washed at least once a month, with about one-third (32%) being washed weekly.

Consumer mosquito net preferences

Consumers, whether net-owning or not, generally preferred rectangular, king size, light-colored nets.

- Over half (59%) of all respondents preferred rectangular shaped nets; one-fourth (24%) preferred round/conical nets. Preferred net sizes were king (56%) and double (35%).
- Thirty-four percent (34%) preferred white mosquito nets; 22% pink; 15% light blue; and 12% light green. Over half (52%) disliked black nets; 14% disliked dark green; 10% disliked dark blue; and 9% disliked white nets.

Awareness, use, and price of mosquito control products

Aerosol insecticides and mosquito coils were the mosquito control products that consumers were most aware of and used. Consumers tended to purchase these products frequently, from different types of outlets.

- Awareness (unprompted) of mosquito control products was highest for aerosol insecticides (80%) and mosquito coils (78%); few respondents (8%) were aware of repellants. The most frequently used products were coils (62%) and aerosol insecticides (54%). (These use figures may be low, given that “use” was asked only of those who indicated unprompted that they were aware of a given product.) Use of aerosols was higher in urban areas whereas use of coils was higher in rural areas.
- The average reported price for 300-350 ml can of aerosol insecticide (the size the majority of respondents bought) was \$1.35. Single mosquito coils averaged \$0.06. Nearly three-fourths (73%) of households that had purchased mosquito coils in the 12 months prior to the interview did so within the last 7 days; 62% of households purchased aerosols within the last month or less. Aerosols were generally purchased in markets (50%), kiosks (15%), and supermarkets (10%). Coils were most frequently purchased in kiosks (49%) and markets (25%).

Perceptions of mosquito control attributes, products, and brands

The most highly valued attribute that consumers wanted in an insect control product was that it kills mosquitoes. Consumers rate sprays/aerosols most highly on this and other desired attributes. Mosquito nets and window screens were considered to be most safe around children. Consumers were most aware of the Mobil, Shelltox, and Raid brands. Mobil and Raid were associated with the insect control attributes they most value.

- On a scale of 1-7, respondents said that the most important attributes of mosquito control products were “kills mosquitoes” (6.08), “high quality and effective brand” (5.75), and “reduces malaria” (5.71).
- Respondents rated sprays/aerosols more highly than all other insect control products on “kills mosquitoes” (82%); “keeps mosquitoes away for a long time” (64%); “keeps mosquitoes away while sleeping” (63%); “is a good value for the money” (64%); “is a long-term solution to mosquito problems” (63%); “is a high quality/effective brand” (76%); and “reduces malaria” (51%). Mosquito nets were considered to be the safest product to use around children, and were also associated with “keeps mosquitoes away while sleeping” (62%) and “is a long-term solution to mosquito problems” (63%).
- Brand awareness was highest for Mobil (85%), Shelltox (70%), and Raid (65%). Awareness of any brands was lower in rural than in urban areas. Mobil and Raid were most associated with the insect control attributes consumers value.

PROGRAM/PRODUCT IMPLICATIONS:

There are a number of favorable factors for ITM promotion and sales, but efforts are needed to increase availability and access to ITMs, to overcome some negative perceptions of nets and net treatments, and to stimulate product demand.

Favorable factors include:

- high awareness of malaria and general understanding of how it is transmitted;
- fairly common use and frequent purchase of commercial insect control products;
- favorable attitudes toward safety of mosquito nets compared to other insect control products;
- evidence of higher net coverage where nets have been promoted;
- strong valuing of the product attributes that ITMs deliver;
- high level of perceived advantages of net use by vulnerable groups.

Main barriers to overcome for ITM promotion are:

- perceived high cost of nets and limited access to nets;
- lack of variety in net size, shape and color; lack of strong net branding;
- some negative perceptions of nets;
- concerns regarding the safety and potential adverse health effects of treated nets, particularly with regard to young children and pregnant women;
- novelty of net treatment/re-treatment; virtually non-existent treatment practices;
- inadequate use of ITMs by young children and pregnant women;
- low exposure to malaria prevention messages;
- misperceptions about the causes of malaria and groups most vulnerable to severe malaria.