

EXECUTIVE SUMMARY

NETMARK BASELINE SURVEY ON INSECTICIDE-TREATED MATERIALS MOZAMBIQUE

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 other mosquito control products

METHODOLOGY: Survey

SAMPLE: 999 households in Mozambique from 5 sites: Maputo, Beira, Quelimane, Tete, and Nampula. Target sample in each site was 200: 80 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: November 2000

STUDY FINDINGS:

Knowledge and beliefs about malaria and mosquitoes

Recognition of the Portuguese term for malaria—“paludismo”—was very high and knowledge of symptoms good; however knowledge of causes and vulnerable groups was somewhat low. Exposure to information about malaria prevention appears moderate and came mainly from radio and health services.

- Virtually all respondents (95%) reported having heard of the Portuguese term “paludismo.” Although the majority (77%) knew that mosquitoes cause malaria, only 30% knew that mosquitoes are the *only* cause of malaria. Sixty-eight percent (68%) mentioned fever as a symptom; most named other symptoms that are also manifestations of malaria. Few (3%), however, mentioned convulsions, a symptom of severe malaria. Only 58% knew that children under five and pregnant women are the groups most susceptible to severe malaria.
- Thirty-nine percent (39%) of respondents had not received any information about avoiding malaria in the past 12 months. Among the 61% who had received information about malaria prevention, the main sources of information were radio (59%) and health facilities (39% from posters and 30% from staff).

Perceived advantages and disadvantages of net use

Levels of perceived advantages of net use by vulnerable groups—children under five and pregnant women—were very high, while levels of perceived disadvantages were very low. Nets were seen as providing good protection against mosquitoes and malaria and helping children sleep better. *Treated* nets were seen as especially effective, with the added advantage of killing and repelling mosquitoes. The small portions of respondents citing disadvantages of a child sleeping under a net were concerned with noise of mosquitoes, heat, and inconvenience. Most respondents said there were no disadvantages to treated nets. Those who did voiced concerns about the safety of the chemical and its smell.

- Almost all respondents (92%) perceived advantages for a child under five to sleep under a mosquito net. Most commonly mentioned were “avoid getting bitten by mosquitoes” (74%), “avoid getting malaria” (59%); and “to sleep better “ (28%).
- The majority of respondents (85%) did not cite any disadvantages to a child under five sleeping under a mosquito net. The most commonly mentioned disadvantages were that the “mosquitoes still make noise” (4%), “it is hot sleeping under a net” (4%), and “it takes time to tuck in the net each night” (3%).
- Most respondents (82%) perceived advantages for a child under five to sleep under a *treated* net. The most commonly mentioned were “kills mosquitoes” (48%), “repels mosquitoes away from the net” (48%), and “works better at preventing malaria” (29%).
- Most respondents (82%) did not cite any disadvantages for a child under five sleeping under a *treated* net. The most commonly mentioned had to do with concerns about the safety and smell of the chemical: “smell is bad” (7%); “chemical is dangerous” (5%); “causes irritation/cough” (5%); “chemical can kill child” (4%); and “child might chew/suck net” (4%).
- The majority of respondents (83%) perceived advantages for a pregnant woman sleeping under a *treated* net. The most commonly mentioned were “kills mosquitoes” (44%), “works better against mosquitoes than a net that has not been treated” (33%), that the “pregnant woman is more protected “ (30%), and that “it is better at preventing malaria” (30%).
- Seventy-eight percent (78%) did not cite any disadvantages for a pregnant woman sleeping under a *treated* net. The most common disadvantages that were mentioned had to do with safety and smell issues: “might make woman nauseated/vomit” (9%); “chemical is dangerous” (7%); “smell is bad” (7%); “causes irritation/cough” (6%)’ and “chemical can kill fetus/cause miscarriage” (5%).

Access to mosquito nets

Nets were available through different outlets, with markets and general shops being reported as the most accessible. Consumers said they would have to travel varied amounts of time to find nets. Over one-quarter of respondents said that nets are not available or that they did not know where to get one.

- The nearest places where a mosquito net could be bought were open air/structured markets (39%) and general shops (16%). The average time to get to the nearest place of purchase was approximately ½ hour by foot or 1 ¼ hour by bus.
- Overall 28% of respondents — representing over one-third (35%) of those in rural areas — reported that mosquito nets are not available or that they did not know where to get them.

Mosquito net ownership, treatment, and use

Net ownership in the study sites was moderate. Nets had been obtained mostly from commercial outlets but from some non-commercial sources as well. Non-owners said that the main reason they did not own a net was cost. Use of nets by vulnerable groups was somewhat low, and nets were not used year-round. Awareness of treatment of nets with insecticide was low and relatively few people treated their nets. The proportion of people most vulnerable to malaria sleeping under any nets and treated nets in net-owning households was moderate.

- Twenty-seven percent (27%) of households reported owning one or more mosquito nets. Thirty-eight percent (38%) of net-owning households owned more than one mosquito net. (These figures may be higher than the national average, given that the Maputo and Quelimane sample sites have active net promotion projects). Ownership was higher in urban (34%) than rural (22%) areas and households of higher socio-economic status (SES) were more likely to own a net than households of lower SES.
- A minority of households (28%) had heard of treating mosquito nets with insecticide solution. Seven percent (7%) of households owned a treated mosquito net. Urban households and those with higher SES were more likely to be aware of net treatments and to own a treated net than rural and lower SES households. Twenty-six percent (26%) of nets were treated: 18% of nets were pretreated before purchase while 19% were treated/re-treated after purchase. On average, nets had been treated/re-treated 1.7 times since purchase, and were last treated 3.7 months ago.
- Net treatment was generally obtained from both commercial (50%) and non-commercial (13%) sources: markets (17%), general shops (16%), and clinics (12%). For 33% of treated nets, respondents did not know where the treatment was obtained. Respondents were generally unaware of what product was used to treat the net.
- About half (48%) of children under five in net-owning households slept under a net (treated or untreated) the prior night, representing 13% of all children under five in the households in the sample. Only 14% of children under five in net-owning households slept under a *treated* net the prior night, representing 4% of all children under five in the households in the sample. The proportion of net-owning households where all children under five slept under any net decreased the more children the household had.
- Forty-six percent (46%) of women of reproductive age (WRA) in net-owning households slept under a net (treated or untreated) the prior night, representing 13% of the total number of WRA in the households in the sample. Only 14% of WRA in net-owning households slept under a *treated* net the prior night, representing 4% of WRA in the households in the total sample.
- Fifty-six percent (56%) of pregnant women in net-owning households slept under a net the prior night, representing 19% of pregnant women in the households in the total sample. Only 17% of pregnant women in net-owning households slept under a treated net the prior night, representing 6% of all pregnant women in the sample households. (The denominators for pregnant women, however, were very small.)
- For those household members who did sleep under mosquito nets the average number of months per year they slept under nets was 6.
- Two people, on average, usually slept under a large net.
- The vast majority of non-net owners (84%) said they did not own a net because they did not have enough money. Percentages were higher in rural (85%) than in urban (79%) areas.

Characteristics of nets owned

The vast majority of nets were obtained from commercial sources. Over forty percent of all nets were purchased in a market. The average price of a net was 11 USD. The majority of nets had been acquired within the past two years. Most were round/conical and double sized. Nets are commonly unbranded products; consumers were unaware of the brand. The majority of nets were reportedly washed at least once a month.

- Forty-four percent (44%) of nets were purchased in a market; 12% from street vendors; 12% from general shops; 6% from textile shops; 5% from projects; 4% as gifts; and 3% from clinics. A higher percentage of nets in lower SES households were purchased from non-commercial sources (e.g., projects, clinics) than nets in higher SES households. The vast majority (83%) of nets owned by households were acquired within the past 2 years.
- Households reported paying an average of 11 USD per net (conversion based on the exchange rate for the dollar on the date of data collection).
- Owners did not know the brand name for the almost all nets (93%).
- The most common net sizes owned were double (53%) and king (23%). The most common shapes were round/conical (59%) and rectangular (35%).
- Sixty-nine percent (69%) of nets had been washed. The majority (68%) of washed nets were reportedly washed at least once a month, with almost one-third (30%) of nets being washed weekly.

Consumer mosquito net preferences

- Households, whether net-owning or not, generally preferred round/conical, king size, light-colored nets.
- Over half (56%) of the respondents preferred round/conical nets. Thirty-three percent (33%) preferred rectangular nets. Preferred net sizes were king (54%) and double (37%).
- Twenty-nine percent (29%) of the respondents preferred white mosquito nets; 18% pink; 16% light blue; and 13% light green. The majority (66%) disliked black nets; 29% dark green; 27% white; 19% pink; and 17% dark blue.

Awareness, use, and price of mosquito control products

Mosquito nets, aerosol insecticides, and coils were the mosquito control products that consumers were most aware of. Use of aerosols and coils, however, was fairly low. The consumers who did purchase these products tended to purchase them frequently, mostly from markets and general shops.

- Awareness (unprompted) of mosquito control products was highest for mosquito nets (63%), aerosols (45%), and mosquito coils (42%). The most frequently used commercial products were aerosols (26%) and mosquito coils (25%). (These figures may be low, given that “use” was asked only of those who indicated that they were aware of a given product.) Use of commercial mosquito control products was higher in urban than in rural areas.
- The average reported prices for 180-220 ml can of aerosol insecticide was 1.72 USD and for a 300-350 ml can 2.10 USD; and 0.24 USD for a single mosquito coil. Almost half (49%) of households that had purchased mosquito coils in the past 12 months prior to the interview did so within the last 7 days. Almost two-thirds (62%) of households that had purchased aerosols did so within the last month. Coils were purchased mostly in markets (61%). Aerosols were most frequently purchased in general shops (40%) and markets (32%).

Perceptions of mosquito control attributes, products, and brands

Consumers wanted a mosquito control product that kills mosquitoes and other insects and reduces malaria. Among all insect control products, nets were rated most highly among consumers on the majority of positive mosquito control attributes, except “killing mosquitoes and other insects,” “being good value for the money,” and “being a good quality and effective brand.” Consumers were most aware of the Baygon brand and associated it with insect control attributes they value, except being safe around children, for which the majority of respondents associated no brand.

- On a scale from 1-7, respondents said that the most important attributes of mosquito control products were “kills mosquitoes” (6.17), “kills other insects, other than mosquitoes” (5.75), and “reduces malaria (5.37).
- Respondents rated mosquito nets more highly than all other insect control products on the majority of insect control attributes including, “keeps mosquitoes away for a long time” (53%), “keeps mosquitoes away while sleeping” (70%), “is safe to use around children (55%), “is a long-term solution to mosquito problems” (43%), and “reduces malaria” (45%). Aerosols were most strongly associated with “kills mosquitoes” (88%), “kills other insects, other than mosquitoes” (78%), and being “a high quality/effective brand” (42%). Coils were seen as being the best “value for the money” (33%).
- Brand awareness was highest for Baygon (84%) and Doom (46%). Baygon was most associated with the positive insect control attributes consumers value.

PROGRAM/PRODUCT IMPLICATIONS:

A number of factors make this a favorable setting 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, to increase awareness of ITMs, and to stimulate product demand.

Favorable factors include:

- high awareness of malaria and some general understanding of how it is transmitted;
- favorable attitudes toward mosquito nets compared to other insect control products;
- strong valuing of product attributes that ITMs deliver;
- high level of perceived advantages and low level of perceived disadvantages of net use by vulnerable groups;
- a growing net culture – about one-fourth of households already own at least one net and the majority were acquired in the last two years; and
- evidence of higher rates of net ownership where they have been promoted.

Main barriers to overcome for ITM promotion are:

- high cost and limited access to nets;
- lack of variety in net size, shape and color;
- 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;
- low level of ITM awareness;
- inadequate use of ITMs by young children and pregnant women;
- inadequate net treatment practices, including lack of regular treatment and re-treatment of nets;
- lack of strong branding of nets and insecticide treatments;
- only moderate exposure to malaria prevention messages;
- misperceptions about the causes of malaria; and
- misperceptions of persons most susceptible to severe malaria.