

Ghana MBS Brief

What Do the Data Mean?

INTRODUCTION

With funding from the U.S. President's Malaria Initiative and The Global Fund to Fight AIDS, Tuberculosis, and Malaria and technical support from the Breakthrough ACTION project, managed by the Johns Hopkins Center for Communication Programs, the Ghana National Malaria Elimination Program (NMEP) and other stakeholders implemented a Malaria Behavior Survey (MBS) to investigate the psychosocial determinants of malaria-related behaviors. The behaviors examined included: net use, net care, prompt and appropriate care-seeking, antenatal care and receipt of IPTp, administration and adherence to SMC doses, and acceptance of IRS. Data on respondents' media habits were also collected. The study used a representative sample of households across three geographic zones from March-April 2022. It employed a cross-sectional survey design in which structured questionnaires were administered to a random sample of women (15–49 years old) and men (18–59 years old). The sample size included 1,706 men and 5,376 women from 5,284 households. The analysis utilized bivariate and multiple logistic regression to test the associations between determinants and behaviors.

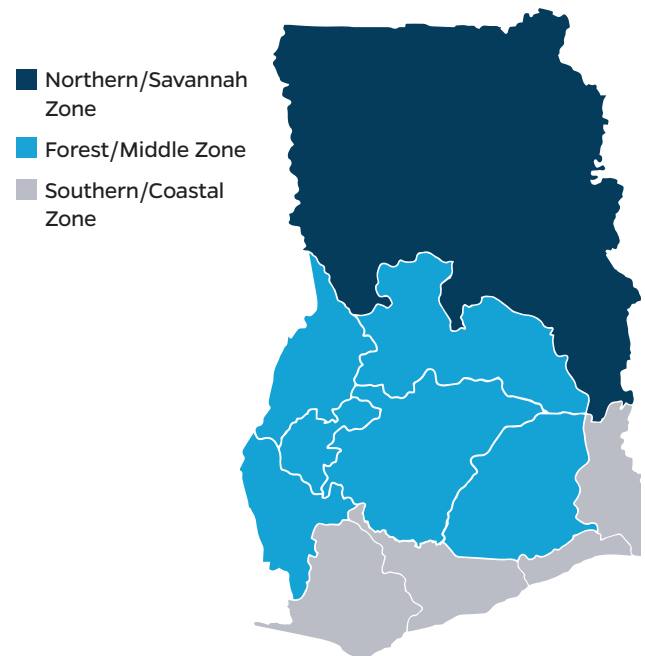
There were two main objectives of this study: First, to better understand the sociodemographic and psychosocial characteristics associated with malaria-related behavioral outcomes. Second, to use this information to determine the appropriate focus of social and behavior change (SBC) activities.

WHAT DO THE DATA MEAN?

This MBS brief summarizes the proportion of the population practicing a variety of recommended


malaria behaviors and the demographic and psychosocial factors associated with the recommended behaviors. The brief also uses these results to present recommendations for SBC activities for each of the primary malaria intervention areas. A complete report is available on the [MBS Website](#).

Ghana MBS Study Zones 2022



The Ghana MBS collected data from:

 **5,284 households**

 **7,082 individual respondents**
5,376 women | 1,706 men



Malaria Case Management

BEHAVIORS AT-A-GLANCE

According to several behavior change theories, intention is a very important determinant of behavior. Other psychosocial factors such as attitudes and perceptions of risk are believed to influence intention, which then influences behavior [2]. Due to a technical glitch, behavioral results for case management are not available, however, the Ghana MBS captured valuable data about intention and other psychosocial factors.



of caregivers of a child under five intended to seek prompt (same or next day) and appropriate (at a health facility or with a CHO) treatment for a child with fever in the future



95% Northern Zone 83% Southern Zone 90% Forest Zone



SBC RECOMMENDATIONS

Challenge: The 2022 MBS shows high levels of intention to seek prompt and appropriate care for fever for children under five years of age (88%), and almost universal self-efficacy (confidence in one's ability to see malaria testing and treatment). However, the 2019 Malaria Indicator Survey found that only 41% of caregivers with febrile children under 5 sought prompt care, and 69% of all cases were brought to a public or private health facility [3]. Even if it is assumed that intention and behavior improved in the three years since the 2019 MIS, the gap between intention and behavior is likely still quite large, particularly for promptness. In response, SBC activities should:

1 Position prompt and appropriate care-seeking as a regular and expected behavior in society.

- The belief that prompt care-seeking after fever onset is the norm in one's community was associated with two-fold increased odds of intending to promptly seek care at a health center (aOR:1.99***, 95% CI: 1.49–2.67); however, only 52% of caregivers surveyed held this belief. SBC activities could feature testimonials from a wide range of community members attesting to their care-seeking behaviors and their benefits. SBC activities should create a cultural expectation that seeking prompt care or advice is a responsible and important action, and that delay should be avoided.

2 Increase the intensity and reach of SBC activities.

- Respondents who had been exposed to malaria messages within 6 months of the MBS had 7.5 higher odds of intending to seek care for their febrile children under 5 than those who were not exposed to malaria messages (aOR:7.48***, 95% CI: 5.80–9.65). Radio and television broadcasts should be increased and aired based on media consumption patterns (see Media Habits below). Broadcasts should be pulsed to prevent listener fatigue.

3 Strengthen caregivers' plans to follow through on their intentions.

- Unlike habitual behaviors, such as net use and care, situations that require prompt and appropriate care-seeking arise infrequently, requiring more conscious intent and guidance [2]. Implementation intentions are if-then plans that specify when, where, and how one would act when a certain situation arises and have been linked with small-to-medium changes in uptake for a range of health behaviors [4]. SBC activities should use role models who express detailed plans for prompt and appropriate care when a child develops a fever and encourage families to develop their plans/intentions. Interpersonal communication activities can also explicitly support caregivers with planning tools to help them identify situational cues that merit prompt care-seeking (such as fever onset), and where and how they would achieve the goal of seeking care promptly and from appropriate sources. Encouraging caregivers to testify of these plans in public and recognizing those who follow through will strengthen their commitment and normative perceptions.

*p<0.05; **p<0.01, ***p<0.0001

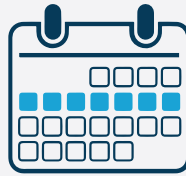
Insecticide-Treated Nets

BEHAVIORS AT-A-GLANCE



ITN use the previous night 6 in 10

of respondents who have access to an ITN slept under one the previous night. The use-to-access ratio indicates the ratio of people who slept under an ITN the previous night (use) to people who could have slept under an ITN, assuming each ITN in the household provides access for up to two people (access).



ITNs used 4 in 10

ITNs used every night of the previous week

consistent use of an ITN was low in both urban and rural areas and all zones



ITN care 7 in 10

ITNs that had been hung were tied up
7 in 10
ITNs that had been washed were washed with mild soap
5 in 10
ITNs that had been washed were dried in the shade



SBC RECOMMENDATIONS

Challenge #1: Too few people in Ghana who have access to ITNs in their households use them. Ghana's use-to-access ratio is much lower (0.56) than other sub-Saharan African countries with little difference across survey zones; Africa-wide, the mean use-to-access ratio is 0.95 and the median is 0.94. Moreover, only 44% of respondents with at least one ITN in their homes reported consistent ITN use (every night in the week preceding the survey). Consistent ITN use is crucial for ITNs to have maximum efficacy. To increase consistent use among those with access to ITNs, SBC activities should:

1 Demonstrate how easy it is to use an ITN every night, in a variety of circumstances.

- Perceived confidence to use an ITN (self-efficacy) was associated with an almost sixfold increase in the odds of consistent ITN use (aOR: 5.70***, 95% CI: 4.79 - 6.79). To increase self-efficacy, SBC activities can portray opinion leaders modeling ITN use in situations community members can identify. For example, the population's confidence to use ITNs every night can be increased by promoting options for ITN hanging and use in more logistically complex situations such as outdoor sleeping, which is common in warm, rural areas [1]. Implementers at the community level can assist the 23% of households who have not hung their ITNs to do so, and then encourage them and help them troubleshoot how to use their ITNs every night.

2 Promote positive attitudes toward ITNs.

- Attitudes are made up of cognitive and emotional responses toward an idea, and these responses can be positive or negative. Overall, having favorable attitudes toward ITNs was associated with more than two-and-

a-half-fold increased odds of consistent ITN use (aOR: 2.57***, 95% CI: 2.14–3.09). In the Southern and Forest zones, respondents with favorable attitudes had 3 times higher odds of using ITNs consistently (aOR 2.74***, 95% CI: 1.93–3.89 and OR: 2.96***, 95% CI: 2.23–3.94); in the Northern zone, the odds were 90% higher (aOR: 1.90***, 95% CI: 1.30–2.76). Concerns about warm temperatures, the smell of the insecticide, the inconvenience of unfolding it over a sleeping space every night, and the belief that expensive ITNs were more effective than free ITNs were held by at least half of all respondents. SBC activities should show opinion leaders expressing positive attitudes toward ITNs. In addition to espousing the benefits of malaria prevention, non-malaria benefits such as a peaceful night's sleep; making a sleeping space look tidy, private, and attractive; and protection from nuisance biting can be promoted.

- SBC activities should not ignore or downplay common concerns about ITN use; they should acknowledge that minor inconveniences exist but the benefits outweigh them. Otherwise, they risk creating unrealistic expectations and ultimately undermining trust in ITNs and the health system.

Challenge #2: While ITN care appears widespread, there is room to improve. Recommended net care behaviors include keeping the net away from children, pests and food, rolling up nets when not in use, handling nets with care, not soiling the net with food, keeping it away from flame or fire, washing it gently, wash with soap, wash only when dirty, inspect regularly for holes and repair small holes quickly. Most (89%) respondents practiced at least one type of ITN care behavior. Only 73% of ITNs that were hung over a sleeping space were folded up or tied in a manner that protects them from possible damage (holes, burns, etc.) during the day when they are not in use. Of the ITNs that had been washed (approximately 50%), most (72%) had been washed with mild soap, as recommended. However, 53% of washed ITNs were left to dry in the sun.

1 Promote intergenerational communication.

- Respondents over 45 years old were almost three times as likely to practice positive net care behaviors than other age groups (aOR:2.77***, 95% CI: 2.34-3.27). SBC activities should feature those over 45 who are practicing positive ITN care behaviors as role models, along with how and why they practice those behaviors.

2 Remind communities that ITNs are valuable and that properly caring for nets ensures they continue to provide value.

- Overall, favorable attitudes towards ITNs increased the odds of positive ITN care behaviors by over three and a half times (aOR:3.62***95% CI: 1.96-6.69). This result suggests that individuals who value ITNs are more likely to care for them.

3 Increase self-efficacy to use ITNs.

- Perceived confidence in using an ITN was associated with an almost twofold increase in the odds of positive ITN care (aOR: 1.81***, 95% CI:1.55-2.12). This suggests that ITN use and care behaviors are connected; the more

confidence one has in using and handling ITNs, the better one is likely to care for them. As suggested above, SBC activities can demonstrate how easy it is to use an ITN every night, using a variety of circumstances that feel relevant to Ghanaians today.

4 Boost people's trust in the effectiveness of ITNs.

- The perception that ITNs are an effective way to prevent malaria is associated with a 20% increase in the odds of positive ITN care (aOR: 1.20*, 95% CI:1.04-1.37). SBC activities should demonstrate the reduction in malaria that Ghanaian communities have experienced when more than 80% consistently and correctly used their ITNs. They should also feature characters or individuals who used to believe that ITNs are not effective and then realized that using ITNs has improved the malaria situation in their own lives. Respected health authorities could also be featured in SBC activities reiterating ITN efficacy.

Antenatal Care and Intermittent Preventive Treatment During Pregnancy

BEHAVIORS AT-A-GLANCE



99%

attended at least one antenatal care (ANC) visit

1 in 3

attended at least one visit with their partner/husband

96%

received at least one dose of IPTp during their pregnancy



92%

said they intend to take IPTp during their next pregnancy



71%

received an ITN during ANC

94%

attended four or more ANC visits

1 in 4

responded correctly to all 3 knowledge questions about when a pregnant woman should start ANC, how many visits she should have, and how many doses she should take.



SBC RECOMMENDATIONS

Challenge: According to the 2019 Malaria Indicator Survey, although many women access ANC and IPTp, there is a need to close the gap between those who get 3 or more IPTp doses (61%) and women who complete at least 4 ANC visits (91%)[3]. Due to a technical glitch, the MBS did not capture the number of women who received 3 or more doses. However, the MBS sheds light on factors that influence women's intention to seek IPTp3. SBC activities can increase IPTp3 rates by:

1 Promoting the belief that IPTp is effective against malaria (response efficacy) and providing encouraging feedback to women who return for their doses.

- Women who believed that IPTp is effective and that it should be taken even when a pregnant woman sleeps under an ITN every night were 7.8 times as likely to intend to take three or more doses of IPTp in their subsequent pregnancies (aOR: 7.84**, 95% CI: 2.22-27.72). Communication materials should provide clear information on the additive protective benefits of layering nets and IPTp. This can help women understand exactly how IPTp can help them and can increase their belief in the effectiveness of IPTp. In addition, SBC activities can feature testimonials from women who have had pregnancies with and without IPTp, and how they fared.
- For provider-side interventions, SBC activities can guide providers to emphasize the effectiveness of IPTp. Facility-based providers can give returning clients encouraging feedback about their health and the growth of their child, framing them as a sign that the client is taking appropriate steps to prevent malaria. Additionally, implementers at the community level can remind women to return for IPTp, reinforcing the perception of its efficacy.

2 Increasing the proportion of women with favorable attitudes toward ANC and IPTp.

- Women who reported favorable attitudes toward ANC and IPTp had 4.2 higher odds of intending to get IPTp3 in their next pregnancy (aOR: 4.2**, 95% CI: 1.44-12.05). To facilitate the spread of favorable attitudes, SBC activities can feature women sharing positive perceptions of ANC and IPTp, debunking common misconceptions, and discussing how they benefited from accessing these services. In addition, people may be triggered to adopt positive attitudes toward a behavior when they feel that their current attitudes do not match their ideas of who they are and who they aspire to become (a situation called "cognitive dissonance"). To this end, SBC activities can use humor to trigger cognitive dissonance; by pointing out the irony between the priority individuals endow some things (such as getting a vehicle tune-up for a new taxi business), vs. ANC and IPTp, for example, can position ANC attendance and IPTp use as responsible things parents should do to give their children the best start possible.

Indoor Residual Spraying

BEHAVIORS AT-A-GLANCE

Of the 262 households surveyed in areas of the Forest and Northern Zones where IRS has been deployed:



SBC RECOMMENDATIONS

Challenge: IRS acceptance is relatively high, but experience from other contexts shows this can decrease over time. SBC activities should proactively address the following to ensure IRS acceptance stays high:

1 Increase the population's confidence in the effectiveness of IRS in reducing malaria, particularly among rural and Forest zone residents.

- 8 in 10 of all eligible respondents expressed confidence in the effectiveness of IRS, but this was significantly more common among urban (87%) than rural respondents (43%*), and among Forest than Northern zone respondents (96% vs. 76%*). There is significant room to increase rural residents' confidence that IRS is an effective intervention against malaria. SBC activities could talk about reductions in malaria caseloads in the area after the introduction of IRS and use testimonials from residents who have experienced fewer malaria episodes after their homes have been sprayed. Health authorities could raise trust in IRS, stating for example, that this approach "underwent rigorous testing" to receive "WHO prequalification," and its ability to provide 8-10 months of protection [5, 6].

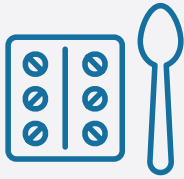
2 Sustain and increase positive attitudes about IRS.

- Although positive attitudes about IRS are already relatively high (78%), current SBC activities should be sustained and refined to address remaining concerns. Only 56% disagreed with the statement that many people develop skin problems after spraying, suggesting that 44% agree with this statement or do not know enough to have an opinion. This suggests that there is a need for more education about the safety of IRS. Opinion leaders can be invited to testify about positive experiences with IRS. These leaders should be coached to explain that side effects are rare, mild, and short-lived and that the reduction in malaria risk means that families are much safer overall.
- Similarly, 3 in 4 disagree with the statement that people have problems with bed bugs after spraying, suggesting that 1 in 4 (a substantial minority) agree that bed bugs are a problem associated with IRS or do not feel informed enough to have an opinion. The negative connection between IRS and bedbugs can be reframed; one of the new compounds in use (Actellic), for example, is approved for use against bed bugs [7].

Seasonal Malaria Chemoprevention

BEHAVIORS AT-A-GLANCE

Of the 1,156 respondents surveyed in areas of the Northern Zone where SMC has been deployed:



83%

of children aged three to 59 months received the first dose during the most recent cycle of SMC



86%

in urban areas

80%

in rural areas



SBC RECOMMENDATIONS

Challenge: A large proportion of caregivers harbor doubts about the safety of SMC. Furthermore, most seem to feel that they have no choice but to give their children the medication. This suggests that the community may not fully believe in the benefits of SMC and may comply out of perceived pressure from distributors or campaign personnel. These concerns, if left unchecked, could mean that caregivers would not promote SMC to other families, and may not give day 2 and day 3 doses. Furthermore, if caregivers feel pressured to comply with an intervention, it could lead to a perception that the health system is not respectful of their autonomy or their right to make informed decisions about their family's health. This erosion of trust could lead to decreased acceptance of future health interventions and reduced engagement with health services. SBC activities should:

1 Continue to promote the high perceived effectiveness of SMC drugs in combination with an understanding of SMC as a three-day course to ensure equally high uptake on days two and three.

- Nine (9) in 10 respondents believe that the medication given to children during the rainy season to prevent malaria is effective. However, only 72% of respondents knew how many days a month it should be given, and knowledge was significantly lower among women aged 15-24 (63% compared to 75% among women aged 45 and above). SBC activities can increase understanding of SMC as a three-day intervention during each month of the rainy season and reinforce the importance of administering the second and third days' doses. Peer-to-peer approaches involving young women, and messaging that accounts for the social and cultural context that young women live in can improve knowledge levels among this group.

2 Show caregivers that participation in SMC is widespread.

- The percentage of respondents who perceive that at least half of the children in the community take the medication to prevent malaria during the rainy season was only 70%, indicating that programs should reinforce the reality that most children in Northern Ghana do receive SMC.

SBC activities can highlight the high participation rate to encourage the 17% (14% urban, 20% rural) who did not receive SMC to ensure their young children receive it during the next rainy season.

3 Foster positive attitudes toward SMC.

- Despite high acceptance rates, only 5 in 10 disagreed with the statement that SMC can harm children, suggesting that about half of the respondents carry doubts about the safety of SMC. Future SMC campaigns should promote that the medication is very safe, that side effects are rare, and that any side effects that occur are usually very minor.
- Most (7 in 10) disagreed that sleeping under ITNs is necessary when children take SMC, suggesting that the majority do not know of or do not see the importance of using ITNs when children take SMC. SBC activities should emphasize the additive protection of using both SMC and ITNs.
- Finally, most respondents implied that they felt some level of duress. Only 2 in 10 disagreed with the statement that SMC distributors force parents to accept the medication, suggesting that 8 in 10 agreed or did not feel informed enough to say either way. Strengthening the interpersonal communication skills of distributors could mitigate this concern.

Media Habits and Channels

BEHAVIORS AT-A-GLANCE

Of those surveyed in areas where SMC has been deployed in the Northern Zone (n=1,156):



4 IN 10

had heard a malaria message in the past 6 months

Television (**73%**) and radio (**35%**) were the most common sources of malaria messages

2 in 10

could identify the campaign logo



88%

own a mobile phone

76%

watch TV at least once a week

59%

listen to the radio at least once a week



4 pm-12 am

are the best times to air malaria messages on TV

4 am-8 am

are the best times to air malaria messages on the radio



SBC RECOMMENDATIONS

Challenge: Exposure is the critical first step to increasing awareness of the desired products, practices, or services and may ultimately influence an individual to adopt a behavior. In Ghana, for example, exposure to malaria messages was associated with 7.5 times higher odds of prompt care-seeking. The population's ability to recall messages about malaria is an indicator of how widely SBC activities have penetrated the target audience. Exposure rates can be influenced by the timing and frequency of airing or implementation, the choice of channels, and how well the design and content of the materials resonated with the audience. The MBS found low levels of exposure to malaria messages, campaign slogan completion, and logo identification in the six months before the survey, which is not unexpected since there was no nationwide SBC campaign during that period. However, it indicates that malaria has not been in the public consciousness in recent months. Future SBC activities should:

1 Leverage the vast reach of TV, phones, and radio.

- Given the level of ownership and access to television, radio, and mobile phones among respondents, media alone has the potential to reach the majority of the population. A strategy that combines television, radio, and mobile technology is indicated for all the study zones. A transmedia approach using storylines across TV, radio, and mobile platforms can further strengthen message recall.
- Likewise, interpersonal communication activities should reinforce the messages being broadcast on multiple forms of mass media. A very small proportion of respondents had heard a malaria message from friends or families, social media, or community health

volunteers (less than 5% from each channel) suggesting that there is little active discussion about malaria amongst the population.

2 Consider mobile phones as a reinforcement channel.

- There is a high level of mobile phone or tablet ownership (88%). Beyond mass SMS, current technology provides engaging formats that can be tailored to any audience. For example, interactive voice response can be activated by inbound or outbound calls and can be used by listeners to pose questions and hear pre-recorded content. Using IVR instead of text messages in Ghana has been found to result in participation rates two times higher for women, four times higher for rural populations, and ten times higher overall [8]. Mobile phones have

been used for providing social support, self-monitoring, and behavioral feedback in other health areas.

3 Schedule TV airings based on the specific media habits of the target audience.

- Although late evenings are overall the most popular time (44%) to watch television, there is a large variation within Ghana. Overall, respondents preferred to watch television in the late evening (8 pm to 12 am, 43%). Females preferred watching television earlier in the day (8 am-8 pm) while males significantly preferred watching in the late evening (8 pm-12 am). The Southern zone preferred watching TV in the early evening more than the Forest and Northern zones. In general, placing malaria messages between 4 pm-12 am has the highest chance of reaching most people in these zones.

4 Broadcast radio materials based on the specific media habits of the target audience.

- Likewise, although early morning is overall the most popular time (35%) to listen to the radio, there is a large variation by residence and socio-demographic factors. Overall, 35% of those who listen to the radio regularly prefer to listen in the early morning (4-8 am). In the Forest zone, by far the most preferred time to listen to the radio was early in the morning (44%) while the Southern zone preferred late morning (8 am-12 pm-34%). The Northern zone preferred early in the evening (4-8 pm-28%) and late evening (8 pm-12 am-24%). Those with no formal education, the youngest age group (15-24 years old), and those in the lowest wealth quintile most preferred to listen in the early evening (4-8 pm) while those in the oldest age group (45+ years old) and in the highest education and wealth quintile preferred to listen to the radio in the early morning (4-8 am).

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