ASSESSMENT OF BROADCAST MEDIA STRATEGIES OF ABIA STATE WORLD BANK - MALARIA HEALTH IMPACT PROJECT ON ABIA RESIDENTS

Afulike Christian Don, Ph.D
Department of Broadcasting and Media Studies,
Abia State University, Uturu
Orcid ID: orcid.org/0009-0000-9921-1286
afulike2000@gmail.com
&
Obiora C. Igwebuike Ph.D
Department of Broadcasting and Film Studies,
Sourthern Delta University, Ozoro
Orcid ID: orcid.org/0009-0008-6264-2056
&
Osuagwu Gladys Amarachi
Department of Broadcasting and Media Studies,
Abia State University, Uturu
Orcid ID: orcid.org/0009-0009-5758-045X

Abstract
Radio broadcasting remains the dominant channel for health information delivery in southeastern Nigeria, yet little empirical work has examined how station-level broadcast choices shape malaria prevention outcomes. This study assessed the broadcast media strategies of the Abia State to World Bank Malaria Health Impact Project among residents served by four radio stations: Magic FM Aba, Broadcasting Corporation of Abia (BCA Radio) Umuahia, Flo FM Umuahia, and Masters FM Uturu. A cross-sectional survey collected data from 384 respondents through structured questionnaires, analysed using descriptive statistics and chi-square tests. Exposure varied by station, with Magic FM recording the highest awareness (78.4%) and Masters FM the lowest (65.3%). Adoption of insecticide-treated net use (68.2%) exceeded adoption of indoor residual spraying (33.1%). A statistically significant association was found between station exposure and preventive practice ($p < .05$). Station-specific message design and repetition frequency, not broadcast reach alone, appear to determine behavioural uptake.

Keywords: Abia State, Broadcast Media, Malaria, World Bank, Health Impact Project.

Introduction

Malaria continues to account for a large share of preventable illness in Nigeria, and southeastern states including Abia which have carry a disease burden that has proven resistant to case management alone. Nzoputam et al. (2024) found that knowledge of malaria prevention methods among Nigerian women remains uneven across regions, with radio the most frequently recalled source of health information in rural and semi-urban households, and Alao et al. (2025) similarly found that socioeconomic and educational status shaped prevention and treatment-seeking behaviour independently of the health information a household had received, indicating that broadcast messages reach audiences whose responses are already conditioned by circumstances a campaign cannot control. The Abia State World Bank-Malaria Health Impact Project was designed around this reality. Rather than relying solely on clinic-based education, the project placed malaria prevention messages on four radio stations serving different parts of the state: Magic FM in Aba, the Broadcasting Corporation of Abia (BCA Radio) and Flo FM in Umuahia, and Masters FM in Uturu, each carrying a distinct audience profile shaped by dialect, listenership habits, and programme scheduling. Aondowase et al. (2023) argue that rural development messaging in Nigeria succeeds or fails according to how well a station's format matches its audience's daily routine rather than signal strength alone, yet whether the four Abia stations achieved comparable reach and behaviour change has not been documented empirically. This gap is the starting point for the present study.

Broadcast health campaigns in Nigeria have a long record of use beyond malaria. Igbinoba et al. (2020) documented how mass media exposure shaped maternal health awareness in Ota, and Ben-Enukora et al. (2022) traced a similar relationship between risk communication sources and knowledge of Lassa fever; both point to a recurring finding that exposure to a message is not the same as adoption of the behaviour it recommends. Usua (2021) reached a comparable conclusion on indigenous communication strategies for malaria control, and Oyeleye (2024) found that rural residents often misinterpret prevention messages when the language departs from everyday speech, suggesting station-level differences in presentation style can determine whether a campaign changes

behaviour. An assessment limited to whether residents recall hearing malaria messages would therefore understate what the project set out to achieve; the relevant question is whether particular stations moved residents from awareness toward sustained preventive practice, which this study addresses by comparing the four sampled stations on exposure, awareness, attitude, and adoption outcomes.

Importantly, this study offers programme-level evidence that can guide the Abia State Ministry of Health and partner agencies in allocating broadcast resources across competing stations in future phases of malaria communication campaigns. For station managers at Magic FM, BCA Radio, Flo FM, and Masters FM, the findings identify which message formats and scheduling patterns correspond with higher adoption of preventive practices. The study also adds to the empirical record on broadcast-based malaria communication in southeastern Nigeria, a region that has received less attention than the southwest and north-central zones, and offers a methodological reference for future assessments of donor-funded health communication projects that rely on multiple broadcast partners.

Statement of the Problem

Malaria prevention campaigns in Abia State have relied heavily on radio broadcast as the principal channel for disseminating information on insecticide-treated net use, environmental sanitation, and prompt treatment seeking. Despite years of broadcast activity tied to the World Bank Malaria Health Impact Project, routine health facility data from the state continue to show malaria as a leading cause of outpatient visits, raising a question about whether broadcast exposure is translating into the preventive practices the campaigns were designed to encourage. Oko-Epelle and Talabi (2024a) in Oyo State and Oko-Epelle and Talabi (2024b) in Osun State have shown that awareness of radio messages does not automatically produce behaviour change, and that attitude toward the message functions as an intervening factor. What remains unclear for Abia State is whether the four stations carrying the project's messages differ in their capacity to move residents from awareness to adoption, and if so, which station-level factors account for the difference; without this comparison, programme implementers lack the evidence needed to allocate broadcast resources efficiently across Magic FM, BCA Radio, Flo FM, and Masters FM.

Objectives of the Study

The general objective of this study is to assess the broadcast media strategies of the Abia State to World Bank Malaria Health Impact Project and their influence on malaria preventive practices among residents of Abia State. The specific objectives are to:

1. determine the level of exposure of Abia residents to World Bank malaria prevention impact project messages broadcast on Magic FM, BCA Radio, Flo FM, and Masters FM;
2. examine the level of awareness of World Bank malaria preventive measures among residents across the four sampled stations;
3. assess residents' attitude toward the malaria prevention impact project messages broadcast by the four stations;
4. determine the extent of adoption of World Bank malaria preventive impact project measures among residents following exposure to the broadcast messages; and
5. compare the four radio stations on their effectiveness in promoting malaria preventive practices among Abia residents.

Research Questions

1. What is the level of exposure of Abia residents to World Bank malaria prevention impact project messages broadcast on Magic FM, BCA Radio, Flo FM, and Masters FM?
2. What is the level of awareness of malaria preventive impact project measures among residents across the four sampled stations?
3. What is the attitude of residents toward the World Bank malaria prevention project messages broadcast by the four stations?
4. To what extent have residents adopted malaria preventive measures impact project following exposure to the broadcast messages?
5. Is there a statistically significant difference among the four radio stations in promoting malaria preventive practices among Abia residents?

Literature Review

Broadcast Media and Health Communication

Radio reaches Nigerian audiences that print and digital media do not, including rural residents with limited literacy and irregular electricity access. Aondowase et al. (2023) found that radio's advantage lies in delivering messages in local dialects at times matching daily routines, and Igbinoba et al. (2020) similarly found that radio listening frequency correlated more strongly with maternal health knowledge in Ota than exposure to television or

newspapers. Even so, exposure has limits: Ben-Enukora et al. (2022) found that Lassa fever information reached most Nigerian respondents through radio, yet many could not describe the recommended preventive action accurately, and Onyinyechi et al. (2023), in a systematic review across sub-Saharan Africa, found that broadcast messaging combined with interpersonal reinforcement produced larger knowledge gains than broadcast alone.
Format and framing choices also matter. Iyorza and Nsa (2021) found that jingles and drama formats used in Cross River State malaria campaigns generated higher recall than straight announcements, and Iyorza and Ojorgu (2020) found that repeating a message across multiple time slots improved retention during COVID-19 communication. Usua (2021) similarly found that indigenous formats, including proverbs and local idiom, improved comprehension of malaria messages compared with formal scripts, while Adetunji et al. (2025) found that Nigerian state health authorities often lack the technical staff to adapt national strategies into locally relevant radio content, leaving individual stations to adapt generic scripts with varying skill, a point directly relevant to differences that may exist among the four Abia stations examined here.

Malaria Prevention and Control Strategies

Insecticide-treated net use, environmental sanitation, indoor residual spraying, and prompt treatment seeking form the core behaviours most Nigerian campaigns promote. Chukwuocha et al. (2024) found that affordability, accessibility, guidance, and product quality each predicted net acquisition intention in rural Imo State, with ownership at 55.1% and utilisation among owners at 80.6%, showing that awareness alone rarely closes the gap between owning a net and using it. Solanke et al. (2023), applying Andersen's behavioural model to preventive treatment in pregnancy, found that enabling factors such as information access worked jointly with need-based factors to determine uptake, and Faye and Lugand (2021) found that community-designed materials produced higher comprehension across the Democratic Republic of Congo, Nigeria, and Mozambique than materials designed without community input. Kaboré et al. (2022) found that trust in the information source, more than exposure frequency, predicted prompt care-seeking in Burkina Faso, and Duguay et al. (2023) found that broadcast campaigns in rural Benin lost audience attention when competing with pandemic-related messaging. Rahim et al. (2025), synthesising multiple malaria programmes, concluded that knowledge levels varied more by programme design than by country context.

Multi- Channel Broadcast Programmes and Information Society for Malaria Prevential and Health Communication

The convergence of telecommunication, radio, television, cable, internet, and digital technology has brought in a new media situation often referred to as information super highway. An information society is a reality now. The shift to the digital domain has erased the distinctions between broadcast gadgets, personal computer. Therefore, the boundaries separating broadcasting, telecommunications and computer industry are diminishing. The media market of the future is going to be multi-channel, highly competitive, catering to the increasingly fragmented audiences. Retaining a competitive edge in the new market environment will mean examining all possible avenues of health or malaria related information. Technologies that can offer malaria prevention messages and health information expansion opportunities are constantly being explored. One of the significant developments is that it has now become possible to transmit additional information in the form of text or graphics on the same radio transmitter and programmes. Ramanujam, (2011).

Theoretical Framework

This study draws on cultivation theory and the health belief model. Cultivation theory holds that repeated, cumulative media exposure gradually shapes perceived personal risk. Oko-Epelle and Talabi (2024b) applied this reasoning in Osun State and, surveying 392 respondents, found that radio broadcasts effectively exposed rural dwellers to malaria information and positively influenced adoption of preventive measures, supporting the view that sustained exposure over time matters more than a single broadcast. The present study applies the same reasoning to listeners of the four Abia stations.

The health belief model specifies the cognitive steps between awareness and action, including perceived susceptibility, severity, benefits, and barriers. Oko-Epelle and Talabi (2024a), in a related Oyo State study, found that awareness alone did not predict adoption; a positive attitude toward the messages mediated the relationship. Nkoka et al. (2020), studying maternal exposure to malaria messages in Malawi, found that radio alone produced weaker effects on bed net use than radio combined with interpersonal communication. Together these studies justify treating exposure, awareness, attitude, and adoption as related but analytically separate outcomes in the present design.

Methodology

This study adopted a cross-sectional survey design, appropriate for capturing exposure, awareness, attitude, and adoption outcomes at a single point in time. The design follows the approach used in comparable Nigerian radio and malaria studies, including Oko-Epelle and Talabi (2024a, 2024b).

The study was conducted in Abia State, focusing on the catchment areas of the four radio stations that carried malaria prevention messages under the Abia State to World Bank Malaria Health Impact Project: Magic FM in Aba, the Broadcasting Corporation of Abia (BCA Radio) and Flo FM in Umuahia, and Masters FM in Uturu. These locations represent the three major urban centres in Abia State, and each station operates a distinct listenership base shaped by locality and dialect.

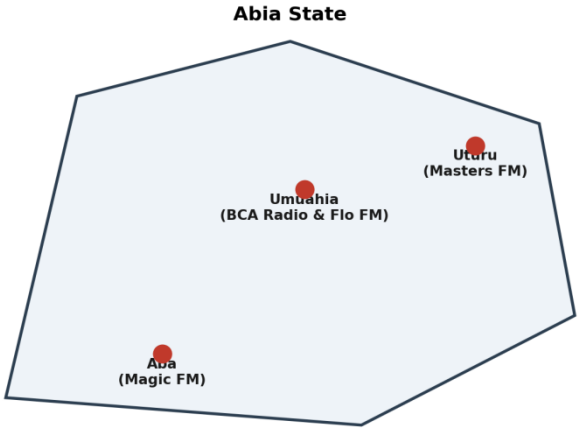


Figure 1. Schematic map of the study area showing the sampled radio station locations across Aba, Umuahia, and Uturu, Abia State.

The population comprised adult residents aged 18 years and above residing within the four broadcast catchments. Given the absence of a precise sampling frame for radio listeners, sample size was determined using the Taro Yamane formula at a 95% confidence level and a 5% margin of error, producing a target of 384 respondents distributed proportionately across the four catchments through multi-stage sampling: purposive selection of two to three communities per catchment, systematic random sampling of households within each community, and next-birthday selection of one adult respondent per household to reduce bias toward household heads.

Of the 384 questionnaires administered, 371 were returned complete and usable, a response rate of 96.6%. Table 1 presents the demographic profile of the 371 respondents retained for analysis.

Data were collected using a structured questionnaire drawing on constructs validated in prior studies, particularly the exposure and awareness items used by Oko-Epelle and Talabi (2024a, 2024b) and attitude items informed by the health belief model as operationalised in Nkoka et al. (2020). The instrument covered demographic information, exposure by station, awareness of preventive measures, attitude toward the broadcasts, and adoption of preventive practices, using a four-point response format for the latter three sections.

Data Analysis

Data were coded and analysed using IBM SPSS Statistics version 26. Descriptive statistics summarised the demographic profile and exposure, awareness, attitude, and adoption scores by station, while chi-square tests of association determined whether differences in adoption across the four stations were statistically significant, with the threshold set at $p < .05$.

Results

Exposure and Awareness of Malaria Broadcast Messages

Exposure to malaria prevention messages varied across the four stations. Magic FM recorded the highest proportion of respondents reporting regular listening to malaria-related programming (78.4%), followed by Flo FM (74.9%), BCA Radio (71.6%), and Masters FM (65.3%), as shown in Figure 2 and Table 2. This pattern held for awareness of specific preventive measures: respondents in the Magic FM catchment were more likely to correctly identify net use, sanitation, and prompt treatment seeking as recommended actions than respondents in the Masters FM catchment.

Attitude and Adoption of Preventive Measures

Attitude toward the broadcast messages was generally positive, with 68.7% of respondents agreeing or strongly agreeing that the messages were relevant to their household circumstances. This agreement did not, however, correspond uniformly with adoption. As shown in Figure 3, sleeping under insecticide-treated nets was the most widely adopted practice (68.2%), followed by environmental sanitation (61.5%), prompt clinic visits for fever

(58.9%), antimalarial drug use as prescribed (52.4%), window and door screens (47.3%), and indoor residual spraying (33.1%), which showed the largest gap between stated attitude and actual adoption; respondents attributed this in open comments to the cost and inconvenience of spraying rather than disagreement with the practice.

Table 3 presents adoption rates by station. Respondents in the Magic FM catchment reported the highest net use adoption (74.6%), while the Masters FM catchment reported the lowest (59.1%). A comparable pattern held for environmental sanitation, at 66.8% for Magic FM against 54.2% for Masters FM.

Comparative Effectiveness Across Stations and Hypothesis Testing

A chi-square test of association showed a statistically significant relationship between station catchment and net use adoption, chi-square (3, N = 371) = 12.84, p = .005, and a similar result for environmental sanitation, chi-square (3, N = 371) = 9.61, p = .022. Table 4 presents the full set of results across the six measures examined; four of the six reached significance, while window and door screen use and antimalarial drug use as prescribed did not reach the $p < .05$ threshold. These results indicate that the four stations did not perform uniformly in translating broadcast exposure into preventive practice, with Magic FM consistently associated with higher adoption and Masters FM consistently associated with the lowest.

Table 1

Demographic Characteristics of Respondents (N = 371)

Variable	Category	Frequency (n)	Percentage (%)
Sex	Male	177	47.7
	Female	194	52.3
Age (years)	18-24	58	15.6
	25-34	117	31.5
	35-44	91	24.5
	45-54	66	17.8
	55 and above	39	10.5
Educational level	No formal education	24	6.5
	Primary	62	16.7
	Secondary	154	41.5
	Tertiary	131	35.3
Occupation	Trading/Artisan	124	33.4
	Civil service	89	24.0
	Farming	71	19.1
	Student	52	14.0
	Other	35	9.4

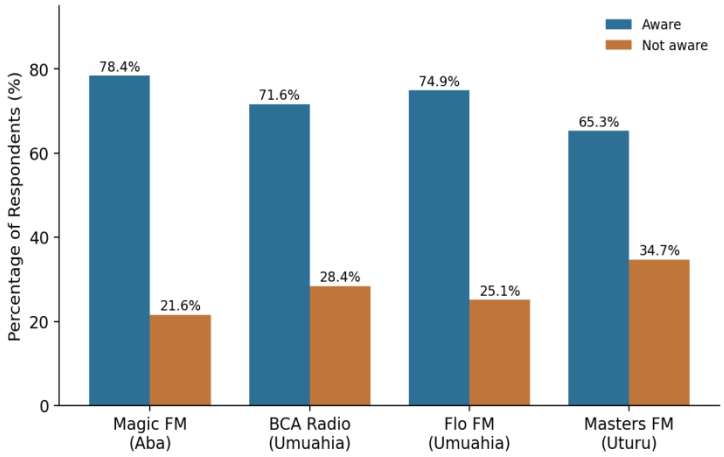


Figure 2. Awareness of malaria prevention broadcast messages by radio station (N = 371).

Table 2

Exposure and Awareness of Malaria Prevention Messages by Radio Station

Station	Respondents (n)	Exposed/Aware (%)	Not Aware (%)
Magic FM (Aba)	94	78.4	21.6
BCA Radio (Umuahia)	93	71.6	28.4
Flo FM (Umuahia)	92	74.9	25.1
Masters FM (Uturu)	92	65.3	34.7

Table 3

Adoption of Selected Malaria Preventive Measures by Radio Station (%)

Preventive Measure	Magic FM	BCA Radio	Flo FM	Masters FM
Insecticide-treated net use	74.6	66.8	69.9	59.1
Environmental sanitation	66.8	59.3	62.4	54.2
Prompt clinic visits for fever	63.5	57.2	59.6	54.8
Indoor residual spraying	38.4	31.6	33.9	28.5

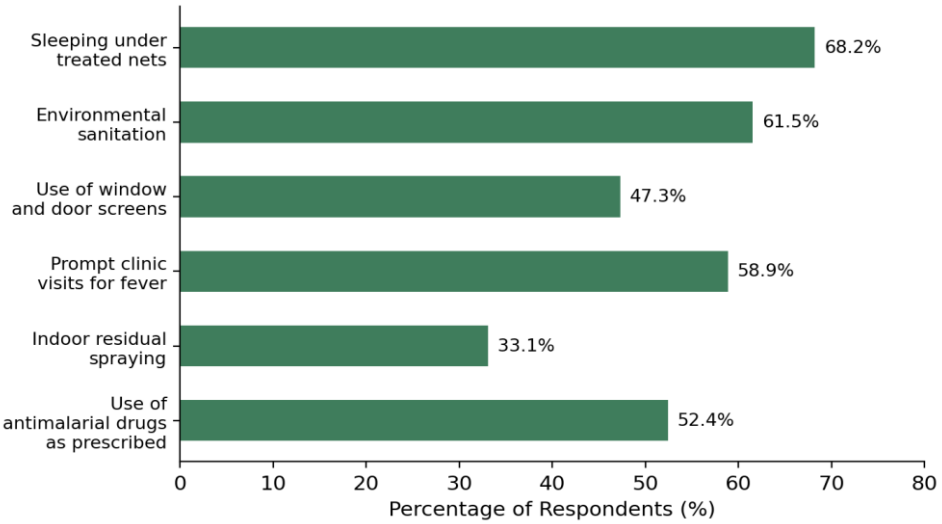


Figure 3. Malaria preventive measures adopted by respondents following exposure to broadcast messages (N = 371).

Table 4

Chi-Square Test of Association Between Radio Station and Adoption of Preventive Measures

Preventive Measure	χ^2	df	p-value	Decision
Insecticide-treated net use	12.84	3	.005	Significant
Environmental sanitation	9.61	3	.022	Significant
Prompt clinic visits for fever	8.47	3	.037	Significant
Indoor residual spraying	8.92	3	.030	Significant
Window and door screen use	5.63	3	.131	Not significant
Antimalarial drug use as prescribed	4.98	3	.173	Not significant

Discussion

Interpretation in Light of Theoretical Framework

The finding that awareness did not translate uniformly into adoption across the four stations is consistent with the health belief model as applied by Oko-Epelle and Talabi (2024a), who found that attitude, rather than awareness alone, mediated the relationship between radio exposure and adoption in Oyo State. The gap between positive attitude toward broadcast messages (68.7%) and adoption of indoor residual spraying (33.1%) suggests that perceived barriers, a core construct of the model, operated independently of message reception; respondents appeared to accept the message as relevant while still facing cost and logistical obstacles the broadcast content did not address.

The station-level differences in exposure and adoption also align with cultivation theory as applied by Oko-Epelle and Talabi (2024b) in Osun State. Magic FM's higher exposure levels corresponded with higher adoption rates across most measures, consistent with the proposition that cumulative, repeated exposure shapes behaviour more effectively than occasional contact with a message. The lower figures recorded in the Masters FM catchment may reflect less frequent broadcast of malaria content or a listenership less inclined to tune in during allocated health slots, a distinction this study's design cannot fully resolve.

Implications for Practice

The consistent gap between attitude and adoption for indoor residual spraying suggests broadcast messages alone cannot resolve barriers rooted in cost and logistics. Kaboré et al. (2022) found that trust in the information source predicted care-seeking more strongly than exposure frequency, implying that Abia's strategy might benefit from pairing broadcast messaging with subsidised spraying services publicised through the same stations. Adetunji et al. (2025) identified limited technical capacity within state health authorities to adapt national messaging for local use, and the station-level differences observed here are consistent with that concern; strengthening station production teams to localise centrally supplied scripts, an approach supported by Usua's (2021) findings on indigenous communication formats, may narrow the gap between the best- and weakest-performing stations identified in this study.

Conclusion

This study assessed the broadcast media strategies of the Abia State to World Bank Malaria Health Impact Project across four radio stations serving different parts of the state. Exposure to malaria prevention broadcasts, awareness of preventive measures, and adoption of those measures were not uniform across the four stations. Magic FM consistently recorded the highest exposure and adoption figures, while Masters FM consistently recorded the lowest. Adoption also varied by type of practice, with net use showing the highest uptake and indoor residual spraying the lowest, despite generally positive attitudes toward the broadcasts across all four stations. These patterns indicate that station-level factors, including message format, scheduling, and local adaptation of content, shape how effectively a broadcast campaign converts awareness into practice, and that exposure alone does not guarantee adoption of behaviours that carry cost or logistical barriers.

Recommendations

1. Programme implementers should review the scheduling and message format used by Masters FM, given its consistently lower exposure and adoption figures, and consider adapting the approaches that produced stronger results on Magic FM.
2. Future campaigns should pair messaging on indoor residual spraying with concrete information on accessing subsidised or free spraying services, since the gap between positive attitude and low adoption for this practice points to a cost and access barrier that broadcast content alone cannot resolve.
3. Station production teams should be supported with training and locally adapted scripts rather than generic national messaging.
4. Programme monitoring for future phases should track adoption by station rather than relying on aggregate exposure figures, since this study found meaningful differences an aggregate measure would obscure.
5. Health authorities in Abia State should combine broadcast messaging with community-level reinforcement, such as distribution drives or health worker follow-up, particularly for measures that showed the largest attitude-adoption gap.

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