Determinants of Preferences for Advertisement and Communication in the Promotion of Anti-Malaria Products in Ibadan, Southwestern Nigeria

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Abstract

One of the strategies for promoting malaria prevention and control globally is advertisement of anti-malaria products. This study was designed to determine users' preferences for style of advertisement and communication of anti-malaria products in Ibadan. Data collection involved twelve Key Informant Interviews and 500 copies of a questionnaire. Radio was the most preferred and most accessible medium of advert in both rural and urban areas. A large majority (86.4%) of rural dwellers preferred advertisements in form of speeches, house-to-house campaigns, face-to-face counselling and rallies. Whereas, advertisement in forms of drama (44.0%) and music (16.0%) were preferred by the urban dwellers. Results show that advertisements and communication programs on anti-malaria products do not relay messages on drug reaction and its treatment, and cost of anti-malaria products. Hence, advertisements and communicative programmes for controlling malaria would be more effective if the social and environmental factors influencing preferences for advertisement are put into consideration.

Keywords: Media, health communication, health promotion, malaria prevention, Nigeria

Background

Malaria as an endemic disease has continued to pose a major threat to the health of people in Nigeria. It accounts for a high rate of morbidity and mortality in the country (Nigeria Malaria Fact Sheet, 2011) with approximately 50% of the population suffering at least one episode of malaria each year (National Malaria Indicator survey, 2010). Malaria also creates a burden, not only on the welfare of households but also on the level of productivity, investment and economic wellbeing of a nation (Usman and Adebayo, 2011). As malaria is both preventable and treatable, the World Health Organization (WHO) recommends the use of Long Lasting Insecticide Treated Nets, Insecticides for vector control and Artemisinin-based Combination Therapy (ACT) for treatment of malaria. These, alongside environmental sanitation, promote the goal of combating malaria in sub-Saharan Africa where the disease is predominant (WHO, 2010). While most anti-malaria tools are

available in Nigeria through the joint efforts of pharmaceutical companies, the Federal Government and foreign donors, accessibility to these tools, especially regarding the information about their sources and promotion of their usefulness, is communicated to the public through various media.

Advertisements and sensitisation campaigns on malaria have also become regular features of media messages daily. The Roll Back Malaria (2012) noted that well-planned and executed communication programmes contribute to achieving malaria prevention and treatment in a wide range of ways. Reports from the Nigeria Malaria Indicator Survey (NMIS, 2012) established how pertinent it is to pass adequate information and ensure that educational materials get to both rural and urban population. The observation by Oladepo, Tona, Oshiname and Titiloye (2010) on dearth of knowledge and/or inadequate awareness concerning appropriate treatment or preventive practices against malaria creates concerns on the need for production of proper advertisement and communication strategies in the promotion of anti-malaria treatment and prevention. It is true that socio-cultural factors, environmental issues and differences in socio-economic status have influence on advertisement and communication preferences of rural and urban dwellers. Advertisement and communication strategies must take cognisance of the social environment and different life chances of target audiences (Salami and Onuegbu, 2016). Dramas, jingles, pictures, and song-relaying messages on malaria (Luyiga, 2013) often disseminated through radio, television, the internet, and billboards (among others) could be important strategies for controlling the disease. However, their strength may be limited by the way the messages are perceived by the people. This study examines the advertisement and communication preferences of the rural and urban dwellers pertaining to prevention and treatment of malaria in Ibadan, Nigeria.

Methodology

This descriptive cross-sectional study was carried out among care-givers in each of the communities in Egbeda Local Government Area (rural) and Ibadan North Local Government Area (urban) in Ibadan, Nigeria. The target population for this study comprised 500 caregivers and twelve patent medicine vendors. A multi-stage sampling technique was adopted, beginning with the purposive sampling/selection of one rural local government area (LGA) and one urban LGA in Ibadan. The second stage involved simple random selection of two (2) wards each out of the two LGAs initially selected; Egbeda LGA and Ibadan North LGA. In Egbeda LGA comprising 11 wards, Awaye and Egbeda were selected, while in Ibadan North LGA which is divided into 12 wards, Bodija and Mokola were selected. Hence, a total of four (4) wards were selected for this research. Finally at the wards selected for this study, efforts were made to locate respondents by visiting them in their homes. In the homes that the researchers visited, respondents were briefed on the background of the study and their consent to participate in the study was sought. Therefore, participation was voluntary. On daily basis all questionnaire copies were

edited. Edited copies of the questionnaire were duly coded and analysed using SPSS to prepare descriptive statistics for the quantitative data, while content analysis was used in analysing qualitative data.

Results

Table 1 reveals that more than half (57%) of the respondents are male. Respondents' ages range between 16-25 years (11%) and 66+ years (1.4%). The analysis of educational qualification of the respondents shows that 35.2% had SSCE, about 16.0% have primary school education while 14.0% have no formal education. A large majority (80.8%) of the respondents are married as against 15.8% that are single. The majority (77.8%) of the respondents belong to Yoruba ethnic group; 12.0% from Igbo ethnic group; 1.4% from Hausa ethnic group and others (8.8%) such as Tiv or people from Cotonou are also involved. Data on religious affiliation of the respondents show that 58.0% are Christians, 36.0% are Muslims, while 4.0% are traditional religious worshippers. In term of household structure, the large majority (82.4%) of the respondents are from nuclear families than from extended families (16%).

Table 1: Socio-Demographic Characteristics of the Respondents

Variable		Frequency (N=500)	Percentage
Sex	Male	285	57.0
	Female	215	43.0
Age	16-25	57	11.4
	26-35	108	21.6
	36-45	141	28.2
	46-55	132	26.4
	56-65	53	10.6
	66-75	3	0.6
	76-85	4	0.8
	No response	4	0.8
Educational status	No formal education	70	14.0
	Primary	81	16.2
	JSSE	28	5.6
	SSCE	176	35.2
	OND	24	4.8
	HND	63	12.6
	B.Sc	20	4.0
	M.Sc, Ph.D	26	5.2
	No response	12	2.4
Marital status	Single	79	15.8
	Married	404	80.8
	Divorced	2	0.4
	Widowed	15	3.0

Ethnic group	Igbo	59	11.8
	Yoruba	389	77.8
	Hausa	7	1.4
	Tiv, Cotonou	44	8.8
	No response	1	0.2
Religion	Christianity	290	58.0
	Islam	180	36.0
	Traditional worship	20	4.0
	No response	10	2.0
Household structure	Nuclear	412	82.4
	Extended	78	15.6
	No response	10	2.0

More than half (58.0%) of the rural dwellers live in their family houses than their counterparts in urban (3.6%) locations. The urban dwellers (66.0%) reside mostly in rented apartments. Most urban and rural dwellers possess radio and mobile phones. Electricity supply is recorded to be between 1-6 hours daily while very few respondents get electricity supply up to between 13-18 hours. The study also documented possession of indices for measuring health outcome at household level. Majority (n=339) of the respondents reportedly source their water from “well” (rural: 187= 74.8%, urban: 152= 60.8%). Water is stored in closed containers in rural (n=203) and urban (n=58) areas; and in clay pots (12.0%) each for rural and urban locations as shown in table 2. The respondents also provided information on their means for water disposal. More rural dwellers (51.8%) dispose water in open gutters, followed by 44.0% who use open grounds, while very few (4.0%) indicate that they dispose their unclean water via sewage system. In the urban area, a large majority (72.8%) of the respondents utilise open gutter; about 20.0% dispose unclean water via sewage system, while only 7.6% dispose unclean water on open grounds within their premises. Most rural (40.0%) and urban (51.2%) dwellers sanitise their drainage systems on a weekly basis, while 13.0% of rural dwellers and 8% of urban dwellers do not sanitise their drainages at all. Respondents in rural community reportedly dump their refuse at their backyards (52.0%), public grounds (40.0%) and in public incinerators (8.0%). Urban dwellers use covered bins (33.2%), refuse collectors (31.2%), backyards (28.0%) and public ground (7.6%).

Table 2: Respondents' Possession of Health Outcome Indices

Health outcome indices		Rural area		Urban area	
		Frequency (N=250)	Percentage	Frequency (N=250)	Percentage
House Ownership	Personal house	63	25.2	66	26.4
	Rented house	40	16.0	165	66.0
	Family house	145	58.0	9	3.6
	Staff Quarters	2	0.8	10	4.0
Sources of water supply	Tap	51	20.4	19	7.6
	Well	187	74.8	152	60.8
	Borehole	2	0.8	79	31.6
	Tanker trucks	10	4.0	0	0
Water storage facility	Clay pots	30	12.0	30	12.0
	Rubber tanks	0	0	111	44.4
	Open basins	17	6.8	51	20.4
	Closed containers	203	81.2	58	23.2
Toilet facility	Water closet	-	-	133	53.2
	Pit latrine	104	41.6	42	16.8
	Bucket/pail	10	4.0	-	-
	Bush/bare ground	136	54.4	75	30.0
Water disposal	Open gutter	129	51.8	182	72.8
	Sewage system	11	4.4	49	19.8
	Open ground	110	44.0	19	7.6
Drainage sanitation	Daily	28	11.2	64	25.6
	Weekly	100	40.0	128	51.2
	Monthly	10	4.0	38	15.2
	Rarely	28	11.2	-	-
	Not sure	52	20.8	-	-
	Not at all	32	12.8	20	8.0
Refuse bin system	Covered bin	0	0.0	83	33.2
	Backyard	130	52.0	70	28.0
	Public ground	100	40.0	19	7.6
	Regular refuse collector	-	-	78	31.2
	Public incinerator	20	8.0	-	-

Prevalence and treatment of malaria

The experience of malaria episode in the previous 2 weeks before the survey was shared by more than half of the respondents in both locations. In addition, malaria was reported more in the urban area (n=148; 59.2%) than the rural area (n=141; 56.4%). Malaria episodes within the last 3 months preceding the survey revealed that respondents had a range of 1 to 5 episodes of malaria in both locations. Many respondents in the rural (n=105; 42.0%) and urban (n=72; 28.8%) areas reportedly had one episode of malaria. Four and five episodes were reported by 72 (28.8%) and 32 (12.8%) respondents in the rural area than the 21 (8.4%) and two (0.8%) respondents in the urban area respectively. Also, two and three episodes were reported by 30 (12.0%) and 48 (19.2%)

respondents respectively in the urban locations, while only nine (3.6%) of the rural respondents reported two episodes of malaria. Only a few in urban area ($n=77$; 30.8%) than rural area ($n=32$; 12.8%) reported zero malaria episode in the last three months preceding the survey. Information on the possibility of preventing and treating malaria as well as the vulnerability of pregnant women to malaria was obtained from the respondents. All respondents in the urban location approved that malaria can be treated and that it was dangerous for women to have malaria during pregnancy. In the rural location, 17 (6.8%) and seven (2.8%) respondents were opposed to the possibility of malaria treatment and the risks it posed for pregnant women. In addition, 27 (10.8%) and 20 (8.0%) respondents in rural and urban locations respectfully did not believe that malaria is preventable.

Information placement and quality of advertisement for antimalaria product

Table 3 clearly presents data on the types of information that the respondents commonly received from advertisements of anti-malaria products. A large majority reportedly received information about causes of malaria (rural=93.2%; urban=84.0%), and prevention of malaria (rural 93.2%; urban 92.0%). Other information included appropriate dosage, effectiveness of antimalaria products, drug reaction and side effects and cost of antimalaria products, as shown in Table 3.

Table 3: Types of Information Received From Anti-malaria Advertisements

TYPES OF INFORMATION	RURAL AREA		URBAN AREA	
	FREQ	%	FREQ	%
Cause of malaria	243	97.2	210	84.0
Prevention of malaria	233	93.2	230	92.0
Effectiveness of anti-malaria products	10	4.0	80	32.0
Side effects and drug reaction of anti-malaria product	10	4.0	31	12.4
Cost of anti-malaria products	-	-	11	4.4
Appropriate dosage	80	32.0	89	35.6

Table 4 presents the opinion of the respondents on the quality of antimalaria drugs and products, and the quality of information that respondents received through different sources. Responses were rated as SA=Strongly Agreed, A=Agreed, U=Undecided, D=Disagreed, and SD=Strongly Disagreed. Values were awarded to the options as SA=5, A=4, U=3, D=2, and SD=1 giving rise to $5+4+3+2+1=15$. The mean score was 3 ($15/5=3$); hence, by merging the score, analysis indicated that any mean score 3 and above connotes that respondents “agreed” to the variable statement, while any mean score below 3 indicated that respondents “disagreed” to the variable statement. The Remarks shown in table 4 reveals the overall opinion of the respondents (either they agreed or disagreed to the statement). Clearly, Table 4 reveals that respondents in the

rural and urban areas agreed that: the language used in advertisement of anti-malaria drugs and products was appropriate and the information they received was clear to them; the duration was neither too long nor too short. Also, they revealed that advertisement of anti-malaria drugs and products was audience-friendly. Furthermore, respondents opined that advertisements should contain indications that they have been approved by the Federal Government of Nigeria; have a label that bear national logo; include statistics on prevalence of malaria; and billboards should contain photographs reflecting the menace of malaria.

Table 4: Respondents' Opinion about Advertisement of antimalaria drugs and products

RURAL	SA	A	U	D	SD	Mean score	Remarks
Appropriate Language	233	-	-	10	-	4.9	Agreed
Clarity of information	99	13	-	34	-	4.7	Agreed
Long duration of time	30	59	-	20	134	2.3	Disagreed
Short time duration	19	12	40	59	120	2.0	Disagreed
The advertisement are audience friendly	139	41	23	16	31	3.9	Agreed
Government approval of anti-malaria product advertisement	212	21	10	7	-	4.8	Agreed
Mounting of Billboard to present pictures reflecting the menace of malaria	151	52	30	-	10	4.4	Agreed
Advertisement of anti-malaria product should have a label that bear the national logo	106	31	40	32	41	3.5	Agreed
Advertisement of anti-malaria product should contain statistics on malaria	154	22	7	56	11	4.0	Agreed
URBAN	SA	A	U	D	SD	Mean score	Remarks
Appropriate Language	111	108	11	20	-	4.2	Agreed
Clarity of information	70	149	17	-	-	3.0	Agreed
Long duration of time	11	11	-	75	129	1.7	Disagreed
Short time duration.	31	39	82	-	98	2.6	Disagreed
The advertisement are audience friendly	58	109	83	-	-	3.9	Agreed
Government approval of anti-malaria product advertisement	158	70	22	-	-	4.5	Agreed

Mounting of Billboard to present pictures reflecting the menace of malaria	189	22	39	-	-	4.6	Agreed
Advertisement of anti-malaria product should have a label	159	20	10	19	40	4.0	Agreed
Advertisement of anti-malaria product should contain statistics on malaria	121	31	20	-	78	3.8	Agreed

Accessibility and Preference for Medium of Advertising Antimalaria

Table 5 shows findings on extent of accessibility and possession of medium of information about antimalaria by location. It also provides information about respondents' preferred medium of receiving advertisement, preferred forms of advertisement and preferred role models in antimalarial advertisement. Radio set was the most accessible tool of information as indicated by 333 (66.6%) respondents from rural and urban locations. Radio was also an acceptable medium to large majority (81.2%) of respondents in the rural area. Television as a medium of information was also reportedly accessible in both locations but exponentially accessible in urban (n=100) than in rural (n=5) locations. Internet facilities and social media usage were also accessible in the urban area, while adoption of town criers was reportedly a norm in the rural location as shown in Table 5.

Respondents clarified that their indication of accessibility was based on mobility (n=224; 44.8% in both locations) and affordability (n=167; 33.4% in both locations) of each medium of information. Other responses included the perceived portability of the medium and constant power supply. There is no gainsaying that respondents' expectation of a medium's degree of mobility was acceptable reason without much significant difference in the rural and urban locations, but that it was more alluded to as a determinant of "access" than other factors in both locations. When respondents were probed for their most preferred medium for receiving advertisements, radio set was also reported by the large majority (70.2%) in both locations and was preferred by 97.2% of the rural respondents. Preference for the medium of receiving advertisement was reportedly hinged on their perception that it is affordable (50.2%), more informative (20.0%), draws more attention (18.0%) and mobile (11.8%) as shown in both location.

The forms of advertisement that the medium utilised in promoting antimalaria was also examined. The various forms examined in this study include movable billboards screen at key location junctions; pictures; drama; music; speech; and jingles. In both locations, almost half (49.4%) of the respondents preferred advert in form of speech; while more than a quarter (26.2%) of the respondents in both locations preferred advert in form of drama. A sharp difference however exists in the level of preference by location. This may be explained in terms of available medium by location. For instance,

advert in form of speech could be preferred since it could be disseminated through radio (the most preferred medium of advert to rural dwellers) as indicated by 86.4% respondents in the rural areas. Whereas, advert in form of drama may be enjoyed and preferred more on television set as common to urban (44.0%) respondents.

Table 5 also indicates that the choice of the most preferred form of advertisement gained ground for being more informative/educative as reported by a large majority (73.6%) of the respondents in the rural areas, and nearly half (47.6%) of the total respondents in the urban areas. The form of advertisement was also considered self-explanatory by about a quarter of the total respondents in both locations. Table 5 also reveals the category of experts (role models) that respondents preferred in promoting advertisement of antimalaria drugs and products. The large majority (92.0%) of the respondents in rural area preferred popular health workers, while only 4.0% each (rural and urban) preferred university scholars and entertainment stars. As against the preference rates in rural areas, about half (n=118, 47.2%) of urban respondents preferred entertainment stars; followed by 44.8% who preferred popular health workers and 8.0% who preferred university scholars.

Table 5: Respondents' most accessible medium of information

Media types and features	Rural area (N=250)	Urban area (N=250)	Total (N=500)
	Frequency (%)	Frequency (%)	
Television	5 (2.0%)	100 (40.0%)	105 (21%)
Radio	203 (81.2%)	130 (52.0%)	333 (66.6%)
Internet	-	10 (4.0%)	10 (2.0%)
Social media	-	10 (4.0%)	10 (2.0%)
Town criers	42 (16.8%)	-	42 (8.4%)
Reasons for the Most Accessible Medium of Information			
Affordability	58 (23.2%)	109 (43.6%)	167 (33.4%)
Constant electricity supply	-	20 (8.0%)	20 (4.0%)
Mobility	113 (45.2%)	111 (44.4%)	224 (44.8%)
Portability	79 (31.6%)	10 (4.0%)	89 (17.4%)
Respondents' Most Preferred Medium of Advertisement			
Billboard	-	39 (15.6%)	39 (7.8%)
Television	-	92 (36.8%)	92 (18.4%)
Radio	243 (97.2%)	108 (43.2%)	351 (70.0%)
Newspaper	-	11 (4.4%)	11 (2.2%)
Town criers	7 (2.8%)	-	7 (1.4%)
Respondents' Reasons for Most Preferred Medium of Advertisement			
Affordability	161 (64.4%)	90 (36.0%)	251 (50.2%)
Mobility	39 (15.6%)	20 (8.0%)	59 (11.8%)
More informative	10 (4.0%)	90 (36.0%)	100 (20.0%)
It draws attention better	40 (16.0%)	50 (20.0%)	90 (18.0%)

Respondents' Most Preferred Form of Advertisement			
Movable Billboards	6 (2.4%)	20 (8.0%)	26 (5.2%)
Pictorial	7 (2.8%)	20 (8.0%)	27 (5.4%)
Drama	21 (8.4%)	110 (44.0%)	131 (26.2%)
Music	-	39 (15.6%)	39 (7.8%)
Speech	216 (86.4%)	31 (12.6%)	247 (49.4%)
Jingles	-	30 (12.0%)	30 (6.0%)
Respondents' Reasons for Choice of Most Preferred Form of Advertisement			
Self-explanatory	66 (26.4%)	61 (24.4%)	127 (25.4%)
Interesting	-	51 (20.4%)	51 (10.2%)
More informative/ educative	184 (73.6%)	119 (47.6%)	303 (60.6%)
It draws more attention	-	19 (7.6%)	19 (3.8%)
Respondents' Most Preferred Role Model in Promoting Antimalaria Products			
Entertainment stars	10 (4.0%)	118 (47.2%)	128 (25.6%)
University scholars	10 (4.0%)	20 (8.0%)	30 (6.0%)
Popular health workers	230 (92.0%)	112 (44.8%)	342 (68.4%)

The narratives from Patent Medicine Vendors (PMVs) compliment survey data in different ways. Results from focused observational studies (Akuse, Esegbe, Ahmed and Brieger, 2010; Brieger, Osamor, Salami, Oladepo and Otusanya, 2004) and scoping studies (Goodman, Brieger, Unwin, Mills, Meek and Greer, 2007) had confirmed PMVs as first possible point of contact not only for drugs and health products, but a major source of advice and guidance on health (Brieger *et al.*, 2004; Salami and Brieger, 2006) to the people in rural and urban areas. The PMVs in this study whose educational status ranged from “no formal education” to “SSCE” did not only sell drugs and other health products to consumers in rural areas, they were also consulted for health related information. Narratives from the PMVs revealed a low level of exposure to technology in the rural community, though the level of social interaction and solidarity is high. However, people take the advantage of local resources to disseminate information in the community. One PMV estimated the size of the community where they operate and affirmed that the best way to promote antimalarial drugs was to organise a community meeting where direct face-to-face information is passed to the people. The PMV noted that:

As this is a small community, one functional way to go about creating awareness on malaria here is to gather people with the consent of the community head (Baale). Then the people have to be addressed using ‘soft words’ as they are taught the best ways of preventing and treating malaria. Through the town hall meeting, people will be advised to clear their environment in order to reduce the risk of getting malaria. At the meeting, people will be told when to listen to the radio for more information. (KII/Egbeda/50yrs)

House-to-house approach was also emphasised as a useful first level approach in information dissemination in rural area. Preference for word of mouth in the local language that people understand was shared by a PMV:

House-to-house campaign will go a long way to help. It is the most effective for passing information in this locality. After the house-to-house campaign, the professionals can stay at the health centre for the people who will be visiting the hospital.
(PMV/Egbeda/32yrs)

A narrative that compared the value of advertisement disseminated through 'handbill or fliers' with one that was based on 'word of mouth' indicated that dissemination through 'word of mouth' requires no much expertise, yet it recorded a high success rate during a cholera outbreak in the community:

Usually when advertisements are disseminated via handbills, posters or fliers, people do not bother to read them and so they have no effect. Of recent, there was cholera outbreak here and it took at least 11 lives, then a group of health practitioners came here to lecture people from house-to-house, and it really made an impact here. (PMV/Egbeda/38yrs)

While respondents in the rural areas preferred advertisement of anti-malaria drugs and products to be on radio, from health workers, during rallies, in town hall meetings, and house-to-house campaigns, the narratives from the urban pharmacists revealed a contrasting view from what their PMV counterparts in the rural area said. For the urban PMVs, health information within the busy shores of an urban system should take the advantage of modern technology to reach the people. The PMVs placed particular emphasis on the use of radio set and television in advertising antimalarial drugs and products to improve the health behaviour of the people. This position was buttressed in an interview session with a PMV who said:

Television and radio advertisements are good for an area like this. For example, there are some TV adverts with nice drama and jingles that people cannot forget. Like that Lonart advert where malaria was taken to court 'is a nice one' and even if you bring a child here, the person can tell you about the advert.
(Pharm/Ibadan north/38yrs)

Radio sets was reported as more preferable by another PMV. Loss of trust in programmes that TV features most times actually discouraged its patronage in recent times as pointed out by a PMV:

I think radio advertisement is the best. This is because most people do not have the time to start watching television. Also, most people have lost interest in television because of the nonsense that are often projected on TV, like girls going naked and boys sagging. (Ibadan north/45yrs)

Clearly, the most preferred source of advertisement in the urban area is radio. A considerable number of people preferred television advertisement but were discouraged by factors such as immoral scenes, irregular supply of electricity and busy schedule.

Discussion

Malaria episodes are higher in rural locations than in urban in this study, even though both locations provided high rates of malaria experiences. Residents in this study had limited access to safe source of water. Respondents indicated well water as their main source from where they get water in both rural and urban locations. Most respondents in the rural (74.8%) and the urban (60.8%) areas in this study depended on Well; as their main source of water supply. Wells, especially those without cover, provide a conducive breeding ground for mosquitoes that cause malaria. Studies have established the fact that the absence of satisfactory water supply in households has implication for malaria occurrence (Joseph, 2012). Only 20.0% of the respondents in the rural area and 7.6% of the respondents in the urban area had access to tap water, while access to borehole was available to very few (0.8%) respondents in the rural area and 32.0% in the urban area.

Poor toilet facilities, poor water disposal and improper refuse disposal facilities were reported in this study. All these are attributes of behaviours and attitude that influence mosquito breeding. For instance, poor toilet, amongst other poor housing facilities, provides less protection against mosquito bite (Prathiba, 2012). Also, more than average of the respondents in both the rural (51.8%) and the urban (72.8%) areas disposed water into open gutters, which on average was sanitised weekly; such attitude and practice could promote conducive breeding-space and ready residuals for mosquito (Adeleke, Mafiana, Idowu, Adekunle and Samwobo, 2008), thus have an implication for the occurrence of malaria. This study also shows poor hygiene, sanitation and waste collection practices among the respondents. These are key determinants of malaria transmission. The more households dispose of waste properly, the lower the risk of liquid waste collecting in pools of stagnant water and forming vector breeding sites (Prathiba, 2012). In the rural area, more than half of the total respondents reported that they disposed their refuse at their back yard, while 40.0% reportedly dumped their refuse on public grounds. In the urban area, only 33.2% had covered bins in their house and about 31.0% had access to regular refuse collectors; others disposed their refuse either in an open space or on public grounds.

Information pertaining to side effects of antimalaria products, drug reactions and cost of antimalaria products were rarely received from advertisement of malaria products in both study locations. Clearly, advertisement of antimalaria products disproportionately focus on benefits of using antimalaria products while neglecting the risks involved in using such products. Such incomplete information, which shows the lack of fair balance between the benefits and risks of using a particular health-related product, is

inappropriate in health communication (Avery, Eisenberg and Simon, 2012; Adams, 2016). Previous studies (Frousch, Krueger, Hornik, Cronholm and Barg, 2007; Macias, Pashupati and Lewis, 2007; Avery, Eisenberg and Simon, 2012; Faerber and Kreling, 2014) that focused the content of advertisement of direct-to-consumer drugs, observed that most advertisements tend to pay less attention to drug risks or negative reactions of using drugs, but emphasized the benefits of using the drugs. Adams (2016) opined that most advertisement avoid information on drug risks because of their potential for making advertisements more lengthy and subsequent increase in the cost incurred on advertisement.

Respondents in this study emphasized the issues of quality in advertisement; standard practice in advertisement; and use of appropriate technology in advertisement as ways of best practice. For instance, the use of appropriate language, clear information, and adequate timing of advertisement were emphasized as factors that influenced the quality of advertisement of antimalaria products in both rural and urban areas. Also, the need for the rate of malaria episode to be included on the advertisement was expected to give a clear picture of malaria prevalence and incidence rates, while putting billboards with picture of someone that has malaria at key junctions in rural and urban areas, was expectedly necessary to depict the cause, mode of transmission and consequence of malaria. The use of pictures in advertisements tends to be more effective than written words as it; attracts attention of the audience towards the message being passed across, enables easy comprehension, help people recall information easily and provides cue to action (Nkana, 2015). Graphic visuals, presenting the severity of a health issue, is noted an effective strategy used in health communication especially in improving appropriate health behaviour (Adams, 2016). This strategy tends to introduce fear appeals to the audience and persuade individuals towards appropriate preventive and curative actions. Studies on the effects of graphic anti-smoking and anti-drinking advertisements revealed that people who come in contact with such advertisements were more likely to avoid smoking and drinking (Kees, Burton, Andrews and Kozup, 2010; Yu, Ahern, Connolly-Ahern and Shen, 2010; Andrews, Netemeyer, Keeys and Burton, 2014). Adoption of such practice in the advertisement of antimalarial drugs and products could produce useful results in the control of malaria.

The findings in this study show radio as the most preferred and most accessible medium of getting information pertaining to malaria in both rural and urban areas in Ibadan. This corroborates the finding by Luyiga (2013) from a study on the knowledge, attitude and practices of malaria prevention and control in Uganda, where majority (62.9%) of the respondents got their information from radio. This is also in line with the findings of Ndifreke, Abraham and Aniekan (2012), where it was established that greater percentage of the youths in Calabar get information about malaria on radio.

Attention should be paid to differences in the acceptable means of information dissemination in rural and urban locations as shown in this study.

For instance, asides radio, urban dwellers prefer advertisement shown on TV, as most of them either possess one, or can access it. The rural dwellers on the other hand prefer rallies, community meetings and house-to-house visitations. These positions were also maintained in Luyiga's (2013) study where rural dwellers reportedly got information from health centre (23.6%) and the village health team members (17.9%); for these media allowed speeches and face-to-face interaction, and opportunity to make enquiries when they were not clear. Luyiga (2013) also reported that urban dwellers preferred advertisements and communication programmes designed in form of drama and music, for reasons that information that come through these media is easy to remember, interesting and self-explanatory.

This study further discovered a difference in the preferred forms of advertisements of antimalaria products in rural and urban areas. A very large majority (86.4%) of the respondents in the rural areas expressed their preference for advertisements in form of speeches. This is explained in terms of the nature of rural environments where information is mostly disseminated using folk-media such as house-to-house visitations, town criers and town hall meetings (Salami and Onuegbu, 2016). On the other hand, most urban dwellers prefer advertisement in form of drama on TV sets and find it more informative and educative. This is also reflective of the nature of urban centers where most people either own or can access TV sets (Salami and Onuegbu, 2016).

The relevance of role model in health communication is expressed in this study. Preference for role model is influenced by the location in this study; the urban dwellers mostly preferred popular stars in entertainment while the rural dwellers mostly preferred popular health workers in promoting advertisement of antimalaria drugs and products. Both categories of people are perceived as celebrities to the public. It was noted that the credibility or attractiveness of popular role models exert much influence with their presence in advertisements (Zipporah and Mberia, 2014). Similar studies on the influence of the presence of celebrities in advertisements of products found that, consumers are more likely to purchase products advertised by celebrities than other products advertised by unknown models (Joshi and Ahluwalia, 2008; Matrade, 2005; Lalitha and Kumar, 2010).

Conclusion

This study shows that information on side effect or possible reactions of anti-malaria drugs and treatment of possible side effects are less available to clients. Rather, common messages are centred on causes, prevention and sometimes on appropriate dosage of drugs. This suggests the need for manufacturers and distributors of anti-malaria products (ACTs, ITNs and insecticides) to design advertisement in such a way that it includes clients' needs on antimalarial treatment information. No dissatisfaction was reported from both rural and urban respondents on the language used in advertisement of anti-malaria products, clarity of the information received from advertisement of anti-malaria products, and the appropriate time and duration of time schedule. However, the

respondents opined that advertisements should also lay more emphasis on government approval through drug regulatory bodies, as proof of effectiveness of the drugs. Also, billboards reflecting the menace of malaria should be mounted at strategic points in the rural areas.

The findings of the study reveal that in passing information across to people on malaria prevention and treatment, the location of the people must be considered. This is important to ensure that the most accessible and most preferable means of communication is utilised in the dissemination of information on malaria treatment and prevention in Nigeria.

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