

**Kertas Asli/Original Article**

## Health – Seeking Behaviour of Rural Dwellers for the Treatment of Presumptive Malaria in North-Western Nigeria

(Sikap Ingin Mendapatkan Khidmat Kesihatan dalam Kalangan Penduduk Luar Bandar di Barat Daya Nigeria bagi Rawatan Andaian Malaria)

ABDULRAZAQ ABDULLAHI GOBIR, MOHAMMAD NASIR SAMBO & SULEMAN IDRIS HADEJIA

### ABSTRACT

*Malaria is endemic throughout Nigeria. Majority of Nigerians, 70%, live in rural areas where subsistence farming is the main occupation. Most of them live below poverty line, earning less than USD1.25 a day. Their health-seeking behaviour for treatment of malaria is influenced by their low socioeconomic status since cost of treating malaria varies according to type of drug prescribed and source of treatment. This cross-sectional descriptive study was conducted to assess the health-seeking behaviour of rural dwellers for treatment of presumptive malaria in Gimba village, a rural community of Kaduna State, Nigeria. It was conducted during Community Diagnosis posting of trained final year medical students of Ahmadu Bello University, Nigeria, in July 2012. An interviewer-administered questionnaire was used to collect data from all households in the community. Data analysis was done using STATA (Version 11. Stata Corporation 2009). Most of the respondents were farmers (69.7%). The category of household members that were most affected by malaria (presumptive) were under fives (47.4%) followed by housewives (26.5%). Majority of the households (73%) treated their last episodes of presumptive malaria at private drug vendor shops. There was a statistically significant association between cost of treatment and place of seeking treatment ( $p < 0.001$ ). The result indicated that most rural dwellers patronise unprofessional drug vendors for cheaper treatment of presumptive malaria. This jeopardizes malaria control efforts. For successful malaria control, it is recommended that the treatment of malaria should be free or subsidized and policies that favour Rural Economic Development should be implemented.*

*Keywords: Health-seeking, Behaviour, rural dwellers, malaria, treatment, Nigeria*

### ABSTRAK

*Malaria adalah endemik di Nigeria. Majoriti penduduk Nigeria 70% tinggal di kawasan luar bandar dan kebanyakannya bekerja sebagai petani. Kebanyakan mereka hidup di bawah tahap kemiskinan dan mempunyai pendapatan kurang daripada USD1.25 sehari. Sikap ingin mendapatkan khidmat kesihatan bagi rawatan malaria dipengaruhi oleh status sosioekonomi mereka yang rendah memandangkan kos rawatan malaria berbeza bergantung kepada jenis ubat dan sumber rawatan. Kajian keratan rentas diskriptif ini dijalankan untuk menilai kemahuan mendapatkan khidmat kesihatan dalam kalangan penduduk luar bandar di Kampung Gimba, daerah Kaduna, Nigeria bagi rawatan penyakit andaian malaria. Kajian dijalankan semasa kepaniteraan diagnosis komuniti pelajar perubatan tahun akhir Universiti Ahmadu Bello, Nigeria pada bulan Julai 2012. Kajian soal selidik digunakan bagi mendapatkan data daripada semua penduduk rumah dalam komuniti tersebut. Data di analisa menggunakan perisian STATA versi 11. 2009. Kebanyakan responden adalah petani (69.7%). Kategori ahli keluarga yang paling terdedah kepada jangkitan adalah mereka di bawah umur 5 tahun (47.4%) diikuti suri rumah (26.5%). Kebanyakan (73%) ahli keluarga mendapatkan rawatan malaria daripada kedai ubat swasta. Terdapat perkaitan yang bermakna secara statistik antara kos rawatan dan tempat mendapatkan rawatan ( $p < 0.001$ ). Hasil kajian menunjukkan kebanyakan penduduk luar bandar mendapatkan rawatan daripada penjual ubat bukan profesional bagi rawatan andaian malaria yang lebih murah. Ini menjejaskan usaha kawalan malaria. Bagi kawalan malaria yang berjaya, adalah disyorkan agar rawatan malaria diberi secara percuma atau diberi subsidi dan polisi pembanguan ekonomi luar bandar seharusnya dijalankan.*

*Kata kunci: Sikap ingin mendapatkan khidmat kesihatan, penduduk luar bandar, malaria, rawatan, Nigeria*

### INTRODUCTION

Malaria is endemic in many countries. In Nigeria, it is a serious public health problem, with official estimate suggesting as much as four bouts of malaria per person

per year on the average (World Health Organisation 2002). It currently accounts for nearly 110 million clinically diagnosed cases per year worldwide, 60% of outpatient visits, and 30% hospitalisations. An estimated 300,000 children die of malaria each year. It is also believed to

contribute up to 11% maternal mortality, 25% infant mortality, and 30% under-five mortality. In addition to the direct health impact of malaria, there are also severe social and economic burdens on communities and the country as a whole, with about 132 billion Naira lost to malaria annually in the form of treatment costs, prevention, loss of work time, etc ( Federal Ministry of Health and National malaria control Programme 2009).

The burden of malaria is often greatest in most rural communities of Africa, where access to standard health care delivery services and facilities are limited. Majority of Nigerians, 70%, live in rural areas where subsistence farming and livestock rearing is the main occupation (Adeloye 2007). Almost 80%, live below poverty line, earning less than USD1.25 a day (IFAD 2005) Because an individual's health care behavior is influenced by his/her educational and economic status, the rural dwellers tend to have undesirable health-seeking behaviours (Amaghionyeodiwe 2008; Godfrey & Sarah 2012). Malaria is commonly referred to as a disease of poverty and is mainly found in the poorest regions of the world. There is a vicious cycle between malaria and poverty: malaria contributes towards poverty, while poverty influences the risk of malaria infection. Poor people are at particular risk of malaria because they are less likely to purchase preventive measures and to seek prompt effective treatment (Sachs 2002; World Bank 2001; Worrall et al. 2005; Asenso-Okyere & Dzator 1999).

The Roll Back Malaria strategy recommends early diagnosis and effective treatment of malaria as one of the main strategy in combating malaria (Binka 2000). Prompt and effective treatment of malaria is conducted only at orthodox Health Facilities. In such health facilities, patients pay certain amount of money for diagnosis and treatment of malaria. The amount paid could constitute a significant portion of household income. For example, in Wad-Medani, Sudan, the average cost of diagnosis and treatment of an episode of malaria was US dollars 5.12 for home-treated cases and US dollars 17.2 for a hospitalized case and this was noted to be a significant economic burden to family income (Abdel-Hameed et al. 2001). The cost of treatment of malaria varies according to type of treatment, type of health care provider and in hospitalized versus home-treated cases.

In most rural Nigerian communities, out-of-pocket payment for health care is the only available form of Health Care Financing. Health insurance schemes are not available. Rural dwellers therefore bear the cost of malaria treatment (UHC Forwards 2011). Because rural dwellers are poor, most of them cannot afford the cost of early diagnosis and effective treatment at health facilities and so they often resort to cheaper, sources of treatment like purchase of anti-malarial drugs over the counter from drug vendors where diagnosis is not conducted. Others use traditional medicine, mostly herbs, to treat it which is even a much cheaper option. For example, in a study

in Assam, India, 12.9% of respondents were treated for their last malaria episode by a tea garden doctor; 7.6% were treated by traditional healers; 9% were treated by homeopath practitioners (Borah & Sarma 2012). In Sub-Saharan Africa, about 60% of malaria episodes are not treated at public health facilities but rather from private health sector such as from private drug vendor shops and drug peddlers (Hanson et al. 2004).

Therefore, understanding the health seeking behaviour for treatment of malaria in a rural community will aid in the effective control of Malaria, since majority of Nigerians live in rural areas. Moreover, community-based information on treatment practices are not readily available (Remme et al. 2001). Hence, this study was conducted to assess the health-seeking behaviour for treatment of malaria among residents of Gimba community a rural settlement in North – western Nigerian.

## METHODOLOGY

A cross-sectional descriptive study conducted during community diagnosis posting of final year medical students of Ahmadu Bello University, Zaria, from 25<sup>th</sup> June 2012 to 20<sup>th</sup> July 2012. The study was conducted in Gimba community, a rural settlement in Soba Local Government area of Kaduna state, North-western Nigeria. It is located between latitude 11.00 to 11.06 N and longitude 7.54 to 7.58E. It is 30kilometres from Zaria town. The village has a total population of 4,160 people and one primary health centre (Department of Community Medicine 2012). Farming is the major occupation.

All household heads in the community were interviewed (total population study). Data was collected by final year medical students using a structured interviewer administered questionnaire in which respondents were asked about their socio-demographic profiles; household malaria incidence and preventive practices; household practices regarding treatment of presumptive malaria like place of treatment and cost of treat. Repeated visits for questionnaire administration were conducted to households where the head was not met at first or previous visit. The questionnaire was pretested on 42 randomly selected Household heads in Yakasai Village, a community with similar characteristics with the study area.

Appropriate entry permission to conduct the study was sought from Soba Local Government Area, Kaduna State and from Gimba community leaders. An informed verbal consent was given by the respondents. Ethical clearance for the study was obtained from Ahmadu Bello University Teaching Hospital's ethical committee. After the data collection, all completed questionnaires were checked properly for any error and edited. The data obtained were cleaned and analysis was done using STATA (Version 11. Stata Corporation 2009). Results are presented in tabular form.

## RESULTS

A total of six hundred and eighty six (686) questionnaires were returned within the period of the study, giving a response rate of 100%. The ages of the respondents ranged from 15 to above 92 years.

As shown in Table 1, 32.1% of the respondents were aged between 30 to 39 years. Most of the respondents (69.7%) were farmers; had only Quranic education (57%); had between one to five children (54.2%). A large proportion of the respondents (47.3%) earned between N10, 000.00 to N20, 000.00. monthly (approximately US\$64.5-US\$129. Average monthly income = N14,840.53 [\$95.7]).

TABLE 1. Socio-demographic profile of respondents

Variable	Frequency (n = 686)	Percent (%)
<b>Age (years)</b>		
<20	6	0.9
20-29	162	23.6
30-39	220	32.1
40-49	158	23
50-59	80	11.7
60-69	36	5.2
70-99	24	3.5
<b>Level of Education</b>		
None	9	1.3
Quranic	391	57
Informal	16	2.3
Primary	108	15.8
Secondary	111	16.2
Tertiary	51	7.4
<b>Number of children fathered</b>		
None	54	7.9
1-5	372	54.2
6-10	171	24.9
11-20	75	10.9
21-30	12	1.8
31 and above	2	0.3
<b>Monthly Income (TN)</b>		
<10	325	47.4
10-20	252	36.7
21-30	54	7.9
31-40	22	3.2
41-50	19	2.8
51-60	6	0.9
61-70	3	0.4
70	5	0.7
<b>Occupation</b>		
None	11	1.6
Farming	478	69.7
Petty trading	59	8.6
Artisan	68	9.9
Businessman	18	2.6
Civil servant	52	7.6

N155 = US\$1 TN = Thousand Naira

Table 2 shows the category of household members that last had presumptive malaria. The most affected group were under fives (47.4%) followed by housewives (26.5%). The average number of presumptive malaria cases per household per year was 13 cases. Majority of the households (73%) treated their last cases of presumptive malaria at chemist shops. Most of the households (52.9%) spent between N300 and N500 (US\$1.9-US\$3.2) to treat their last cases of presumptive malaria. The average cost of treating a case of presumptive malaria was N680.00 (\$4.4). There was a statistically significant association between cost of treatment and place of seeking treatment ( $p = 0.001$ ). Most of the respondents (55.2%) mentioned lack of money as the main reason for not treating their last episode of malaria at the health facility in the community. Other reasons given include preference of private drug vendor shops (33.1%), health workers are unfriendly (22.9%) and preference of Traditional Medicine (18.4%).

TABLE 2. Household cost of malaria treatment and type of healthcare provider

Variable	Frequency	Percent (%)
<b>Affected person</b>		
Under five	325	47.4
House wife	182	26.5
House hold head	96	14
Youth	67	9.8
Relation	14	2
All member of family	2	0.3
<b>Place of treatment</b>		
PHC Facility	152	22.2
pvs (Chemist)	501	73
Others	33	4.8
<b>Cost of treatment in Naira</b>		
<N300	143	20.8
N300-N500	363	52.9
N501-N1000	134	19.5
>N1000	46	6.7
<b>Reasons for not going to health facility for treatment</b>		
Lack of money	295	55.2
Prefer chemist shop	177	33.1
Unfriendly health workers	122	22.9
Poor services at health facility	81	15.3
Services are expensive	165	30.9
Prefer traditional medicine	98	18.4
Others	18	3.5

$X^2 = 79.39$ ,  $df = 9$ ,  $p = 0.001$

## DISCUSSION

A large proportion of the respondents (43.2%) had no formal education which could be attributed to the low primary school enrolment in the northern part of Nigeria (Yakubu 1996). The average number of children per

household alone was 5. This puts the average household size in the community above the national figure of 4.6 for rural Nigerian communities (NPC & ORC Macro 2009).

With regards to malaria treatment in the community, the high patronage of unqualified medicine vendors for the treatment of presumptive malaria is similar to findings of Uzochukwu in South-Eastern Nigeria (Uzochukwu & Onwujekwe 2004). There was a statistically significant association between cost of treatment and place of seeking treatment ( $p = 0.001$ ), meaning that the cost of treatment determines where respondents go for treatment, in this case mainly to private vendor shops. This statistical finding is also supported by the large proportion of respondents (55.2%) that mentioned lack of money as the main reason for not treating their last episodes of malaria at the rural health facility (Table 2). Patronage of private drug vendor shops for treatment of malaria poses a great obstacle to malaria control in the country because the private vendor shops are potential sources of substandard and fake antimalarial drugs which have resulted in several treatment failures (Obinna et al. 2009; World Health Organisation 2003; Bate et al. 2008). Moreover, the drug vendors know little or nothing about the correct dosage of the drugs. It is therefore not surprising that a significant proportion of patients do not complete the entire treatment course when drugs are purchased over-the-counter in rural communities (Cohen et al. 2012). This poses another threat to effective malaria treatment.

Similar findings were documented in Tanzania where 8.5% of respondents also sought for treatment of malaria from private drug vendor (Kinunghi et al. 2010). Possible explanations for this lower patronage of private vendor shops in Tanzania include government's subsidy on malaria treatment; free malaria treatment; or availability of quality and affordable treatment at health facilities. On a contrary note, findings from a study in Malawi showed that majority of children with malaria were first managed at home with treatment regimens other than effective anti-malarials (Chibwana et al. 2009).

One limitations of the study is that it relied on recall of the clients with respect to estimations of costs incurred at point of service. The estimates might be inaccurate due to poor recall. Another limitation is that it was based on the assumption that a febrile illness was due to malaria (presumptive malaria). This might not be true in all cases. Both limitations might affect the statistical significance of findings.

## CONCLUSION

The results indicated that most respondents do not practice prompt diagnosis of malaria nor do they sought for an effective treatment for it due to the financial cost. They sought for treatment of presumptive malaria at drug vendor shops instead of health facilities where both early diagnosis and effective treatment are provided. Free or subsidized

treatment of malaria and rural health insurance schemes are recommended in rural areas. Upgrading available health facilities in rural areas is also recommended.

## CONFLICT OF INTEREST

The authors declare that they have no competing interests.

## ACKNOWLEDGEMENT

The authors would like to thank all the study participants and the final year medical student for their support in the preparation and implementation of the study. We are grateful to the village head for permitting us to conduct the research and for his moral support.

## REFERENCES

- Abdel-Hameed, A.A., Abdalla, H.M. & Alnaury, A.H. 2001. Household expenditure on malaria case management in Wad-Medani, Sudan. *African Journal of Medicine and Medical Sciences* 30 Suppl: 35-8.
- Adeloye, V.S.A. 2007. Satellite technology in rural communication systems. *Bulletin of Science Association of Nigeria* 28: 91-96.
- Amaghionyeodiwe, L.A. 2008. Determinants of the choice of health care provider in Nigeria. *Health Care Management Science* 11(3): 215-27.
- Asenso-Okyere, W. & Dzator, J. 1999. Household cost of seeking malaria care: a retrospective study of two districts in Ghana. *Social Science & Medicine* 45: 659-677.
- Bate, R., Coticelli, P., Tren, R. & Attaran, A. 2008. Antimalarial drug quality in the most severely malarious parts of Africa - a six country study. *PLoS One* 3(5): e2132.
- Binka, F. 2000. The goals and tasks of the Roll Back Malaria WHO Cabinet Project. *Med Parasitol (Mosk)* (2): 8-11.
- Borah, J.D. & Sarma, P.S. 2012. Treatment seeking behavior of people with malaria and households' expenditure incurred to it in a block in endemic area in Assam, North East India. *BMC Infectious Diseases* 12 (Suppl 1): 41.
- Chibwana, A.I., Mathanga, D.P., Chinkhunba, J. & Campbell, C.H. 2009. Socio-cultural predictors of health-seeking behaviour for febrile under-five children in Mwanza-Neno district, Malawi. *Malaria Journal* 8: 219.
- Cohen, J.L., Yavuz, E., Morris, A., Arkedis, J. & Sabot, O. 2012. Do patient adhere to over-the-counter artemisinin combination therapy for malaria? Evidence from an intervention study in Uganda. *Malaria Journal* 11: 83.
- Department of Community Medicine, Ahmadu Bello University, Zaria, Nigeria. 2012. Community Diagnosis Conduct Census for Gimba Village, Soba Local Government Area, Kaduna State, Nigeria.
- Federal Ministry of Health and National Malaria Control Programme. 2009. Abuja, Nigeria. Strategic Plan 2009-2013 "A Road Map for Malaria Control in Nigeria." Abridged Version. Yaliam Press Limited. Abuja, Nigeria. p. 12.
- Godfrey, B.S.I. & Sarah, I.I. 2012. Health-Seeking Behavior of Rural Dwellers in Southern Nigeria: Implications for Healthcare Professionals. *International Journal of Tropical Disease & Health* 2(2): 62-71.

- Hanson, K., Goodman, C., Lines, J., Meek, S., Bradly, D. & Mills, A. 2004. The economics of malaria control interventions. Geneva: Global Forum for Health Research.
- IFAD. 2005. Rural poverty in Nigeria. Available at [www.ruralpovertyportal.org](http://www.ruralpovertyportal.org). Accessed on 16<sup>th</sup> November, 2012.
- Kinunghi, S.M., Mashauri, F., Mwangi, J.R., Nnko, S.E., Kaatano, G.M., Malima, R., Kishamawe, C., Magesa, S. & Mboera, L.E.G. 2010. Knowledge ,attitude and practices about malaria among communities: comparing epidemic and non-epidemic prone communities of Mulebba district, northwestern Tanzania. *BMC Public Health* 10: 395.
- NPC & ORC Macro. 2009. Nigeria Demographic and Health Survey, 2008. Calverton, Maryland: National population commission and ORC Macro.
- Obinna, O., Harparkash, K., Nkem, D., Elvis, S., Benjamin, U., Kara, H., Viola, O. & Paul, O. 2009. Quality of anti-malaria drugs provided by public and private healthcare providers in south-east Nigerian. *Malaria Journal* 8: 22.
- Remme, J.H.F., Binka, F. & Nabarro, D. 2001. Toward a Framework and Indicators for Monitoring Roll Back Malaria. Available at [www.Ncbi.nlm.nih.gov/books/NBK2625/](http://www.Ncbi.nlm.nih.gov/books/NBK2625/). Accessed on 11<sup>th</sup> May 2013.
- Sachs, J. & Malaney, P. 2002. The economic and social burden of malaria. *Nature* 415: 680-685.
- UHC Forwards. 2011. Nigeria: Towards universal health coverage. Available at <http://uhcforwards.org/content/national-health-insurance-system>. Accessed on 12<sup>th</sup> November, 2012.
- Uzochukwu, B.S. & Onwujekwe, O.E. 2004. Socio-economic differences and health seeking behavior for the diagnosis and treatment of malaria: a case study of four local government areas operating the Bamako initiative programme in south east Nigeria. *International Journal for Equity in Health* 3: 6.
- World Bank. 2001. Poverty reduction and the health sector. World Bank's poverty reduction strategy source book. World Bank, Washington DC.
- World Health Organization. 2002. Malaria Desk Situation Analysis.
- World Health Organization. 2003. The African malaria report 2003. Available at [www.who.int/malaria/publication](http://www.who.int/malaria/publication). Accessed on 12<sup>th</sup> September, 2012.
- Worrall, E., Basu, S. & Hanson, K. 2005. Is malaria a disease of poverty? A review of the literature. *Tropical Medicine and International Health* 10: 1047-1059.
- Yakubu, A.M. 1996. Western Education in the Northern Nigeria: challenges and strategies. First Edition. Published by National Gamji Memorial Club. p. 32.

Abdulrazaq Abdullahi Gobir  
 Mohammad Nasir Sambo  
 Suleman Idris Hadejia  
 Department of Community Medicine  
 Ahmadu Bello University, Zaria, Nigeria

Correspondence author: Abdulrazaq Abdullahi Gobir  
 Email address: [aagobir@yahoo.co.uk](mailto:aagobir@yahoo.co.uk)

Received: May 2013  
 Accepted for publication: December 2013

