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The Impact of Health Seeking Behaviour, Educational Attainment and Financial Strength on Home Management of Malaria in Rural Communities in Imo State, Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Author EAN designed the study, author CICE performed the statistical analysis, authors SNOI and EAN wrote the protocol and authors EAN, UMC and BON wrote the first draft of the manuscript. Authors CICE and SNOI managed the analyses of the study. Authors EAN and UMC managed the literature searches and All authors read and approved the final manuscript.

Original Research Article

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ABSTRACT

Aims: The objectives were to determine the impact of health seeking behaviour, educational attainment and financial Strength on home management of malaria in rural communities in Imo State, Nigeria.
Study Design: A descriptive survey design was used.
Place and Duration of Study: Imo State, Nigeria, between February 2013 and April 2013 Methodology: The sample size was 2674 adults (1650 males, 1024 females, age range 20-70 years). A structured, validated and reliable questionnaire (r=0.81) was used to collect data from 2674 consenting respondents.
Results: The result showed that the health seeking behaviours of respondents when they suspect malaria was as follows; 25.7 percent patronized patent medicine stores/chemist, 22.3 percent visited health centers/ hospitals,18.6 percent consulted family members/friends/ neighbor for help. This statistically had a significant influence on the pattern adopted in managing malaria at home (*Chi-square = 263.98, P -value* <

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0.001). Furthermore, 25.4 percent of those who visited the health centers/hospitals used more of Artemisinin-based Combination Therapy in managing malaria. Those who patronized patent medicine/chemist used more of chloroquine/quinine (25.7 percent), only 18.1 percent used a special herb, dogonyaro/Akum shut up leaf (Azadirachta Indica) in managing malaria at home. Those who visited herbalists (20.5%) also used chloroquine/quinine while those that visited prayer houses also used more of chloroquine/quinine (22.3%) and less of ACT (15.5%). The impact of educational attainment on pattern of home management of malaria was statistically significant (*Chi-square=155.47,P-value<0.001*). Those who had no formal education used more of Chloroquine/Quinine in managing malaria at home while those who attained secondary and tertiary education adopted more of Artemisinin-based combination Therapy (ACT) in managing malaria. Herbal treatment (Dogonyaro/Akum shut up leaf (Azadirachta Indica), seven leaves and application of local ointment/lotion) were less used by respondents with higher educational attainment. Financial strength was also found to be statistically associated with the pattern of management adopted by the rural dwellers (*Chi-square=118.46, P-value<0.001*). Those whose average monthly income was above 30,000 Naira used more of conventional medication and less of herbs.

Conclusion: The findings showed that the rural communities need more enlightenment and education on home management of malaria.

Keywords: Impact; health seeking behaviour; educational attainment; financial strength; home management; malaria.

1. INTRODUCTION

Malaria is a life threatening parasitic disease transmitted through the bite of infected female anopheles Mosquitoes. It is the commonest cause of hospital attendance in all age groups in all parts of Nigeria. It is also one of the four commonest causes of childhood mortality in the country [1]. Malaria kills nearly one million people a year, eighty-five (85) per cent of which are among children under 5 years of age. Nearly 250 million malaria cases are reported every year. Malaria affects 40 percent of the world's population, putting 3.3 billion people at risk in 108 countries [2].

Children under the age of five years and pregnant women are the most-at- risk groups for malaria. It consumes as much as 40 percent of public health expenditure in countries where it is endemic and it is one of the primary causes of poverty and puts additional burden on health systems and families [2].

Home management of malaria is the care of malaria that is done at the patients' home through family participation within available resources and sometimes in collaboration with health care workers. It is the care at home with what is available at hand (herbs, drugs from shops and tepid sponging) and then shifted to the health workers if there is no response or if the situation has worsened [3].

The effectiveness of home treatment depends upon early diagnosis, prompt, appropriate treatment, and proper health education about malaria. Early commencement of appropriate treatment will ensure better outcome and prevent the progression to severe malaria. An anti-malarial drug to be used at home must be safe, effective, affordable, easy to administer and preferably in single dosage packs [1].

Health seeking behaviour is any action undertaken by individuals who perceive themselves to have a health problem or to be ill for the purpose of finding appropriate remedy [4].

Treatment seeking behaviour is related to cultural beliefs about the cause and cure of illness [5] and the choice of treatment source was found to be influenced by accessibility, disease type and severity, patient's gender and patient's educational level [6]. Attitude toward providers was also an important factor in health seeking behaviour [5]. Mothers usually start care at home and within three days they shift to health workers if there was no improvement.

Malik et al in his study reported that the main health seeking behaviour was to consult the health facility or health personnel together with using traditional medicine or herbs [7]. Malik et al also noted that majority of mothers with febrile children reported taking drugs before visiting health facility and some health workers also visited patients home. Furthermore, the choice between the available options is determined by the availability of health facilities, users' fees, satisfaction with services, difficulty in reaching facilities and believing in traditional medicine [7]. Esiegbe et al. [8] reported that health care options utilized before presentation at the health facility were patent medicine seller, home treatment and herbal concoction with majority using more than one option.

Level of education or acquired knowledge or health education is essential in primary control of an endemic communicable disease like malaria. In a study by Kehinde et al, the post health education intervention study showed that there was a degree of change in the knowledge of referral signs and symptoms in the experimental group, 52.8% ($P<0.0001$) while it was 0.2% in the control group ($P=0.93$). Tepid sponging improved by 45.0%, paracetamol use by 55.3% and the use of herbs and other drugs were not significantly influenced in the experimental ($P=0.65$ and 0.99) and control group ($P=0.89$ and 0.88), respectively. Furthermore, there was 55.7% increase in the proportion of respondents using the correct dose of arthemisinin based combination therapy in the home management of malaria ($P<0.001$). The study showed that there was a shift in the home management of malaria with the use of current and effective anti-malaria drugs. It also demonstrated the effect of health education on the promptness of appropriate actions taken among the respondents for early diagnosis and treatment. Early diagnosis and appropriate treatment can be guaranteed if caregivers are knowledgeable on prompt actions to be taken in home management of malaria [9]. Mazigo et al also reported that respondents associated malaria with mosquito bites with significant difference between education level and knowledge on transmission ($P<0.001$), even usage of bed nets was significantly associated with education level ($P<0.01$) [10].

Worrall et al reported that direct and indirect treatment costs are among the most commonly mentioned obstacles to adequate health-seeking behaviour of the poor for obtaining prompt and adequate treatment, treatment compliance and access to preventive measures like mosquito-nets [11].

Even if direct costs are affordable, or if medical services are free, indirect costs (for transport, special food, and 'under-the-counter' fees) can limit access to treatment or lead patients to interrupt therapies [12]. The data from Sub-Saharan African countries showed differences in anti-malarial treatments by socio-economic status (SES) [13] which favoured the highest quartiles of SES groups.

Schellenberg et al. observed that even in a survey carried out in a rural poor society of South-eastern Tanzania, where SES seemed irrelevant, persons of the relatively higher SES

knew more danger signs and were more likely to bring their sick children to a health facility than those who were relatively poorer [14]. Muella et al. also noted that treatment costs are not only an obstacle for adequate health-seeking of the poor; they also signify a higher burden for the poorer households compared to the more affluent [13]. Based on the information available the researchers decided to access the impact of health seeking behaviour, educational level and financial strength on home management of malaria in Imo State, Nigeria. This study is important as the findings will provide operational profile for improving home management of malaria in rural communities in Imo State, Nigeria and in other areas with similar background.

2. METHODOLOGY

A survey design was used and approval was given by research ethical committee of Federal University of Technology Owerri, Imo State, Nigeria. The traditional rulers of the study communities and participants also gave their consent for the study. The study population involved adults resident in the rural communities of Imo State. A multistage sampling was used. Imo state has three zones, Orlu [twelve (12) local government areas (LGAs)], Owerri [Nine (9) local government areas], and Okigwe [six (6) local government areas]. Proportionately, four LGAs (33.3%), three LGAs (33.3%) and two LGAs (33.3%) were randomly sampled from each zone respectively. Two communities were randomly sampled from each LGA giving a total of eighteen communities. The next stage was the cluster sampling method where every head of house hold that was present on the day of interview for a particular community was interviewed in the language he understands best by trained field assistants. A total of two thousand six hundred and seventy four (2,674) adults were interviewed. The instrument used was the validated and reliable questionnaire. Section A of the questionnaire sought information on socio-demographic characteristics of the respondents; Section B, sought information on respondents health seeking behaviours, educational level, financial strength and home management of malaria in the rural communities of Imo State, Nigeria.

There was a trial test of the instrument on 20 adults from one community which was not included in the main study. The split half reliability technique was adopted in testing the reliability of the instrument. The Correlation Coefficient of r=0.81 was got indicating that the instrument was reliable. The administration of the instruments (questionnaire) lasted for three months and data analysis done using percentages and chi- square.

3. RESULT

Table 1, showed the socio-demographic characteristics of the respondents, 67.7 percent were females and 38.3 percent were males. Age group 31-40 was the highest 23.9 percent while married respondents were 76.4 percent. In educational level, 46.3 percent had secondary education followed by those that had primary education, 26.5 percent. Majority of the respondents were traders 23.4 percent while 50.7 percent respondents had average monthly income less than 18,000 naira followed by those that earn 18, 000–29,000 naira monthly, 22.4 percent. In terms of number of persons in a household, 1100 respondents had 5-6 persons in a household (41.1 percent) followed by 570 respondents with 7-8 persons in a household (21.3 percent) .

Table 1. Socio-demographic characteristics of the respondents

Socio-demographic characteristics	Frequency(N = 2674)	Percentage (%)
Gender		
Male	1024	38.3
Female	1650	61.7
Age group (years)		
< 21	66	2.5
21 - 30	504	18.8
31 - 40	639	23.9
41 - 50	526	19.7
51 - 60	399	14.9
61 - 70	317	11.9
71 +	223	8.3
Marital status		
Single	228	8.5
Married	2043	76.4
Divorced	117	4.4
Widowed	286	10.7
Level of education		
No Formal Education	304	11.4
Primary	709	26.5
Secondary	1239	46.3
Tertiary	422	15.8
Occupation		
Housewife	342	12.8
Student	219	8.2
Artisan	281	10.5
Farmer	497	18.6
Trader	625	23.4
Business tycoon	59	2.2
Civil servant	236	8.8
Professional (Lawyer, Engineer, Lecturer	151	5.6
etc)	264	9.9
Others (labourer, bricklayer, driver etc)		
Average monthly income		
<18,000	1356	50.7
18,000 - 29,000	598	22.4
30,000 - 49,000	394	14.7
50,000 - 99,000	209	7.8
100,000 and above	117	4.4
Number of persons in household		
1 – 2	48	1.8
3 - 4	307	11.5
5 - 6	1100	41.1
7 - 8	570	21.3
9 - 10	321	12.0
> 10	328	12.3

Table 2 showed the health seeking behaviour of respondents when they suspect malaria. Majority, 25.7 percent patronized patent medicine stores/chemist, also 22.3 percent visited

health centers/ hospitals. It is also indicated that 18.6 percent consulted family member/friends/ neighbor for help. This statistically had a significant influence on the pattern adopted in managing malaria at home (*Chi-square=263.98, p-value<0.001).* About 25.4 percent of those who visited the health centers/hospitals used more of Artemisinin-based Combination Therapy in managing malaria. Also about 22.3 percent used chloroquine/quinine in managing malaria at home. Only 18.1 percent used dogonyaro. Furthermore, those who patronized patent medicine/chemist used more of chloquine/quinine as indicated by 25.7 percent; also 19.7 percent used ACT while 11.4 percent used dogonyaro in managing malaria at home. Those who visited herbalists used 20.5 percent of chloroquine/quinine, 18.1 percent of *Azadirachta Indica* (dogonyaro), 9.9 percent of roots while about 12.6 percent had used ACT. The result showed that those who went to hospital used ACT more (24.5 percent) compared to those who patronized the patent medicine/chemist (19.7%) and the herbalists (12.6 percent). Those that visited prayer house used more of chloroquine/quinine (22.3 percent) and less of ACT (15.5percent).

Table 3 showed that the impact of educational attainment on pattern of home management of malaria was statistically significant (*Chi-square=155.47, p-value<0.001).* Those who had no formal education used more of Chloroquine/Quinine in managing malaria at home. Those who attained secondary and tertiary education adopted more of Artemisinin-based combination Therapy (ACT) in managing malaria when compared to those with lesser qualification. The result also indicated that those with higher educational attainment used less of *Azadirachta Indica* (Dogonyaro or Akum shut up), seven leaves and application of local ointment/lotion.

Table 4 showed that most of the respondents adopted the use of anti-malaria drug in managing malaria at home. Financial strength was also found to be statistically associated with the pattern of management adopted by the rural dwellers (*Chi-square=118.46, P<0.001).* Those whose average monthly income was above 30,000 Naira monthly used more of Chloroquine/Quinine in the treatment of malaria. Also those whose average monthly income was above 50,000 Naira utilized Artesunate/Amodiaquine more than those with lesser income. Furthermore, those whose average monthly income was less than 18,000 Naira had 23.8 percent that used Artemisinin-based combination and this is small compared to the percentage of respondents under this group (50.7 percent). The result also indicated that those with higher average monthly income (50,000 and above) used less of *Azadirachta Indica* (Dogonyaro or Akum shut up), seven leaves roots and application of local ointment/lotion.

Table 2. Association between health seeking behaviour and pattern of home management of malaria in rural communities in Imo State

Treatment options in Home management of malaria	Health seeking behaviour							Total
	Visit a herbalist	Visit a prayer house	Consult a family member / fried /nieghbour	Patronize patent medicine /chemist	Visit a health centre /hospital	Others	I do nothing	
Chloroquine/Quinine	93	72	82	704	572	28	5	1556
	20.5%	22.3%	18.6%	25.7%	22.3%	23.1%	26.3%	
Sulphadoxine/Pyrimethamine	35	21	25	187	148	7	0	423
	7.7%	6.5%	5.7%	6.8%	5.8%	5.8%	.0%	
Artemisinin based Combination Therapy (ACT)	57	50	64	540	653	15	3	1382
	12.6%	15.5%	14.5%	19.7%	25.4%	12.4%	15.8%	
Artesunate/Amodiaquine	29	19	42	277	200	13	3	583
	6.4%	5.9%	9.5%	10.1%	7.8%	10.7%	15.8%	
Dogonyaro (Akum Shut up)	82	38	59	311	200	14	0	704
	18.1%	11.8%	13.4%	11.4%	7.8%	11.6%	.0%	
Seven leaves	39	31	28	182	231	5	2	518
	8.6%	9.6%	6.4%	6.6%	9.0%	4.1%	10.5%	
Roots	45	20	30	143	179	9	2	428
	9.9%	6.2%	6.8%	5.2%	7.0%	7.4%	10.5%	
Steam inhalation	19	13	16	54	54	4	1	161
	4.2%	4.0%	3.6%	2.0%	2.1%	3.3%	5.3%	
Tepid sponging	7	4	13	36	39	6	0	105
	1.5%	1.2%	3.0%	1.3%	1.5%	5.0%	.0%	
Sun tanning	8	9	11	36	35	2	0	101
	1.8%	2.8%	2.5%	1.3%	1.4%	1.7%	.0%	
Application of local ointment/lotion	14	11	16	53	38	2	0	134
	3.1%	3.4%	3.6%	1.9%	1.5%	1.7%	.0%	
More than one in succession	8	6	8	53	37	4	0	116
	1.8%	1.9%	1.8%	1.9%	1.4%	3.3%	.0%	
Prayer	18	28	45	162	183	12	3	451
	4.0%	8.7%	10.2%	5.9%	7.1%	9.9%	15.8%	
Did nothing	0	1	1	2	1	0	0	5
	.0%	.3%	.2%	.1%	.1%	.0%	.0%	
Total	**454**	**323**	**440**	**2740**	**2570**	**121**	**19**	**6667**

Chi-square = 263.983, df = 78, p-value < 0.001N/B: Percentages and totals are based on responses

Table 3. Association between level of educational attainment and pattern of home management of malaria in rural communities in Imo State

Treatment options in home management of malaria	Educational level				Total
	No Formal Education	Primary	Secondary	Tertiary	
Chloroquine/Quinine	127	287	590	187	1191
	27.2%	24.3%	26.9%	24.4%	
Sulphadoxine/Pyrimethamine	25	59	161	44	289
	5.4%	5.0%	7.3%	5.7%	
Artemisinin-based Combination Therapy (ACT)	54	200	526	180	960
	11.6%	16.9%	23.9%	23.5%	
Artesunate/Amodiaquine	39	116	182	97	434
	8.4%	9.8%	8.3%	12.7%	
Dogonyaro (Akum Shut up)	69	139	230	48	486
	14.8%	11.7%	10.5%	6.3%	
Seven leaves	36	91	138	55	320
	7.7%	7.7%	6.3%	7.2%	
Roots	29	97	118	37	281
	6.2%	8.2%	5.4%	4.8%	
Steam inhalation	17	33	44	14	108
	3.6%	2.8%	2.0%	1.8%	
Tepid sponging	5	16	20	16	57
	1.1%	1.4%	.9%	2.1%	
Sun tanning	9	14	13	12	48
	1.9%	1.2%	.6%	1.6%	
Application of local ointment/lotion	15	27	21	13	76
	3.2%	2.3%	1.0%	1.7%	
More than one in succession	12	26	37	8	83
	2.6%	2.2%	1.7%	1.0%	
Prayer	29	78	116	53	276
	6.2%	6.6%	5.3%	6.9%	
Did nothing	1	0	1	2	4
	.2%	.0%	.0%	.3%	
Total	**467**	**1183**	**2197**	**766**	**4613**

Chi-square = 155.47, df = 39, p-value < 0.001 N/B: Percentages and totals are based on responses

Table 4. Association between financial strength and pattern of home management of malaria in rural communities in Imo State

Treatment options in home management of malaria	Average monthly income (NGN)					Total
	<18,000	18,000 - 29,999	30,000 - 49,999	50,000 - 99,999	100,000 & above	
Chloroquine/Quinine	582	268	198	88	55	1191
	24.1%	25.9%	30.6%	26.7%	29.3%	
Sulphadoxine/Pyrimethamine	138	71	49	20	11	289
	5.7%	6.9%	7.6%	6.1%	5.9%	
Artemisinin-based combination therapy (ACT)	573	168	125	60	34	960
	23.8%	16.2%	19.3%	18.2%	18.1%	
Artesunate/Amodiaquine	180	92	74	56	32	434
	7.5%	8.9%	11.4%	17.0%	17.0%	
Dogonyaro (Akum Shut up)	258	121	64	29	14	486
	10.7%	11.7%	9.9%	8.8%	7.4%	
Seven leaves	178	84	27	23	8	320
	7.4%	8.1%	4.2%	7.0%	4.3%	
Roots	170	60	26	17	8	281
	7.0%	5.8%	4.0%	5.2%	4.3%	
Steam inhalation	54	29	15	8	2	108
	2.2%	2.8%	2.3%	2.4%	1.1%	
Tepid sponging	30	15	7	5	0	57
	1.2%	1.4%	1.1%	1.5%	0.0%	
Sun tanning	23	16	3	3	3	48
	1.0%	1.5%	0.5%	0.9%	1.6%	
Application of local ointment/lotion	40	21	10	3	2	76
	1.7%	2.0%	1.5%	0.9%	1.1%	
More than one in succession	36	23	17	4	3	83
	1.5%	2.2%	2.6%	1.2%	1.6%	
Prayer	148	67	31	14	16	276
	6.1%	6.5%	4.8%	4.2%	8.5%	
Did nothing	2	1	1	0	0	4
	0.1%	0.1%	0.2%	0.0%	0.0%	
Total	**2412**	**1036**	**647**	**330**	**188**	4613

Chi-square = 118.46, df = 40, p-value < 0.001N/B: Percentages and totals are based on responses

4. DISCUSSION

The socio-demographic characteristics of the respondents showed that 67.7 percent were females and 38.3 percent were males. Age group 31-40 was the highest among the respondents (23.9 percent) while married respondents were 76.4 percent. In educational level, the majority, 46.3 percent had secondary education followed by those that had primary education, 26.5 percent. Their main occupation was trading 23.4 percent while 50.7 percent respondents had average monthly income less than 18,000 naira followed by those that earn 18, 000–29,000 naira monthly, 22.4 percent.

The findings revealed that majority of the respondents patronized patent medicine stores/chemist and used more of chloroquine/quininine than other means of home management. This is likely because the patent medicine dealers were more conversant with chloroquine/quinine and the cost of chloroquine/quinine may be cheaper. This study agrees with the study of Esiegbe et al where out of the health care options, the commonest first choice by the care givers was the patent medicine stores and some patronized traditional medicine and used herbal concoction [8]. Malik et al also noted that patients take drugs at home before any other source of help [7]. Those who visited health centers/ hospitals used ACT more compared to those that went to patent medicine store/chemist, prayer house, herbalist and neighbours. This is probably because the staff of the health centers/ hospitals was very much aware of the drug of choice that help to prevent resistance to drugs. Those that visited prayer house used more of chloroquine/quinine and less of ACT. Despite the multiple responses, *Azadirachta Indica* (Dogonyaro or Akum shut up), seven leaves roots and application of local ointment/lotion were mostly used by those who visited the herbalists. This is likely due to cultural beliefs about the cause and cure of illness which is in line with the study of Oberlander and Elverdan [5]. The results when put to statistical tests showed that health seeking behaviours had influence on home management of malaria in the rural communities, $P<0.001$.

Those who had no formal education used more of Chloroquine/Quinine in managing malaria at home. Those who attained secondary and tertiary education adopted more of Artemisinin-based combination Therapy (ACT) in managing malaria when compared to those with lesser qualification. The result also indicated that those with higher educational attainment used less of *Azadirachta Indica* (Dogonyaro or Akum shut up), seven leaves and application of local ointment/lotion. This is probably as a result of awareness associated with education. The results showed that the impact of educational attainment on pattern of home management of malaria was statistically significant, $P<0.001$. Kehinde et al in his study also noted that Level of education or acquired knowledge or health education is essential in primary control of an endemic communicable disease like malaria [9].

Financial strength also statistically influenced the pattern of home management adopted by the rural dwellers, $P<0.001$. Those whose average monthly income was above 30,000 Naira used more of Chloroquine/Quinine in the treatment of malaria. Also those whose average monthly income was above 50,000 Naira utilized Artesunate/Amodiaquine more than those with less income. Furthermore, those whose average monthly income was less than 18,000 Naira had 23.8 percent which is small compared to the percentage of respondents under this group (50.7 percent) this could be attributed to their financial status. The result also indicated that those with higher average monthly income (50,000 and above) used less of *Azadirachta Indica* (Dogonyaro or Akum shut up), seven leaves roots and application of local ointment/lotion. This agreed with the study of Muela who noted that treatment costs are not only an obstacle for adequate health-seeking of the poor; they also signify a higher burden for the poorer households compared to the more affluent [15]. Also, Asesso-Okyere et al in their study reported that the cost of orthodox health care is increasingly becoming a hindrance to many health care seekers leading them to look at alternative providers. The study also noted that drug peddlers and drug store operators provide services which are closer to the people and may be cheaper at the short run than services from regular health care providers because of nonpayment of consultation fees and transport expenses [16].

5. CONCLUSION

This study accessed the impact of health seeking behaviour, educational level and financial strengths on home management of malaria. It was concluded that health seeking behaviour,

educational level and financial strengths influenced home management of malaria in rural communities of Imo State Nigeria. There is need for health education on the conventional pattern of home management of malaria where the care givers are advised to recognize the signs and symptoms as early as possible and prompt treatment commenced with the right drugs.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Federal Ministry of Health (FMOH). National anti-malaria treatment policy: National malaria and vector control division, Abuja, Nigeria; 2005.
2. Gillespie B and Red Cross Society. Beyond prevention: Home management of malaria in Kenya, Report and Images; 2010.
3. World Health Organization. Lessons learned in home management of malaria: Implementation of research in four African countries. Geneva. Global Malaria programme. 2007;15-19.
4. Ward H, Mertens T, Thomas C. Health seeking behaviour and control of sexually transmitted diseases in health. Policy and Planning. 1997;12:19-28.
5. Oberlander L, Elverdan B. Malaria in the United Republic of Tanzania: Cultural considerations and health seeking behaviour. Bull World Health Organization. 2000;78:1352-1357.
6. Miguel et al. In Malik EM, Hanafi K, Ali SH, Ahmed ES, Mohmed KA. Treatment seeking behaviour for malaria in children under five years of age: Implication for home management in rural areas with high seasonal transmission in Sudan. Malaria Journal. 2006;5:60.
7. Malik EM, Hanafi K, Ali SH, Ahmed E.S and Mohmed KA. Treatment seeking behaviour for malaria in children under five years of age: Implication for home management in rural areas with high seasonal transmission in Sudan. Malaria Journal. 2006;5:60.
8. Eseigbe EE, Anyiam JO, Ogunrinde GO, Wammanda RD, Zoaka HA. Health seeking behaviour among caregivers of sick children who had cerebral malaria in Northwestern Nigeria. Malaria Research and Treatment; Article ID954975. 2012;4.
9. Kehinde OF, Olorunfemi EA, Kabir OA. The effect of health education on home management of malaria among the caregivers of children aged under 5 years in Ogun State, Nigeria. Eur J Med Res. 2012;17(1):11.
10. Mazigo HD, Obasy E, Mauka W, Manyiri P, Zinga M, Kweka E, Mnyone L, Heukelbach J. Knowledge, attitudes and practices about malaria and its control in rural Northwest Tanzania. Malaria Research and Treatment; Article ID 794261. 2010;9.
11. Worrall E, Basu S, Hanson K. The relationship between socio-economic status and malaria: A review of the literature. Background paper for Ensuring that malaria control interventions reach the poor. London. 2003;5-6.

12. Abel-Smith B, Rawal P. Can the poor afford 'free' health care? A case study of Tanzania. Health Policy and Planning. 1992;7(4):329-341.
13. Wardlaw. In Worrall E, Basu S, Hanson K. The relationship between socio-economic status and malaria: A review of the literature. Background paper for Ensuring that malaria control interventions reach the poor. London. 2003;5-6.
14. Schellenberg JA, Abdulla S, Nathan R, Mukasa O, Marchant T, Kikumbih N, Mushi AK, Mponda H, Minja H, Mshinda H, Tanner M, Lengeler CH. Effect of large scale social marketing of insecticide treated nets on child survival in rural Tanzania. The Lancet. 2001;357:1241-1247.
15. Muela SH, Ribera JM, Nyamongo I. Health-seeking behaviour and the health system response. DCPP Working Paper. 2003;14.
16. Asesso-Okyere, et al. In Uzochukwu SC and Onwujekwe OE. Socio-economic differences and health seeking behaviour for the diagnosis and treatment of malaria: A case study of four local government areas operating Bamako initiative programme in South –East Nigeria. International journal for Equity in Health. 2004;3:6.

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