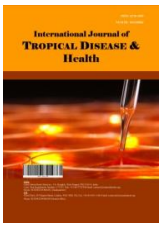

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Health- Seeking Behaviour among Caregivers in Treatment of Childhood Malaria in Imo State, Nigeria

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Authors' contributions

This work was carried out in collaboration among all authors. Author OGU designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Author HIU managed the analyses of the study. Author CCI managed the literature searches. All authors read and approved the final manuscript

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ABSTRACT

Aim: The health seeking behavior in the treatment of childhood malaria was assessed to investigate influence of educational level and occupation of caregivers on choice of health services.
Methodology: Between September, 2005 and January, 2008 in two Local Government Areas of Imo State, Nigeria. A total of 6259 respondents were interviewed through household survey of caregivers domiciled in the communities in the study area.
Results: Result showed the major malaria management practices in the study area to include; use of herbs from local healers, buying of over the counter anti-malarials from pharmacies and attendance to hospitals/clinics. The result also revealed that majority (35.4%) of respondents went to pharmacies for the treatment of their children while 27.1% of respondents were self-medicating. Some (9.8%) of the caregivers used herbs, while 3.7% visited both herbalists and hospitals. The malaria management practices differed significantly ($P<.05$) among occupational groups and educational levels.

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Conclusion: There should therefore be intensive and sustained public health education aimed at improving attitudes of care givers towards the use of health facilities for timely treatment of childhood malaria.

Keywords: Childhood malaria; health seeking behavior; care givers.

1. INTRODUCTION

The ability of caregivers to recognize and seek appropriate care for the common childhood illnesses like malaria is instrumental in reducing child deaths in low and middle income countries [1]. Factors that have been cited as responsible for the low coverage include the inability by caregivers to know the true cause of malaria [2,3], failure to link danger symptoms, such as convulsions and anaemia to malaria illness [4]. Even within a single country, the factors can be complex [5] necessitating the need to consider local context in framing solutions. A number of studies of treatment-seeking in general have shown high rates of self-treatment [5]. Three factors that emerge repeatedly as related to self-treatment are time, cost and perception of severity [6,7]. Self – treatment saves time and lowers the cost of treating an illness [8], and is more common for illness episodes that are not considered severe. Socio-economic and demographic factors are often related to self-treatment, but these are reported with less consistency than time, cost and severity, and tend to vary more across geographic sites [5,9,10]. For instance, in Nigeria, self-treatment was more common among males and among single people [11] while in Kerala State, India, obtaining medicines without a prescription was associated with low education and perception of the expense of visiting a doctor [12].

Self-treatment is often viewed negatively by health workers, who fear that giving it recognition would encourage its use [13]. Even in the scientific literature, self-medication is often associated with under-dosing and blamed for the emergence of resistant strains, although the evidence for these relationships is not clear [5].

A number of studies from Sub-Saharan Africa have shown that private drug shops and informal providers are the first choice for treatment of childhood illnesses for between 15% and 73% of the population [14,15,16,17]. In Nigeria, treatment seeking behaviour among youths in Ibadan showed self-treatment to be common [18]. Similarly, a study in Abakaliki revealed extensive use of self-treatment in treatment seeking pattern of malaria infection [19]. The health care decision of minors is made by their caregivers; this study is therefore aimed at investigating the influence of educational and economic status on the choice of health care provision in the treatment of childhood malaria. Limited information on treatment-seeking behavior and anti-malarial use hinders the evaluation and implementation of effective malaria prevention and treatment programmes [20]. To this end, an understanding of health-seeking behavior enables communities and the formal health care system to design interventions that cater to a specific population (Lindblade et al., 2000), hence this study.

2. METHODS

2.1 Study Area

Imo State is located in the South eastern region of Nigeria. It lies between latitude $5°10^{1}$ and $5°51^{1}$ North, Longitude $6°35^{1}$ and $7°28^{1}$ East. It is bordered, on the North by Anambra State, on the South and West by Rivers State and on the east by Abia State. The state comprises an area of about 6,346 square Kilometers, which is about 0.9% of the total land area of the Federation. The population by the provisional census figure of 2006 was around 3.9 million inhabitants, which is about 2.8% of the total population of the Federation. The largest towns are Owerri, which is the State capital with a population estimated at about 289,721 in 2006, Okigwe, Orlu and Oguta with population estimates of 133,699, 177,343, and 87,415 respectively. The predominant occupation in the urban areas is civil service and trading. Moreover, a lot of artisans are also present in the area. The majority of the rural dwellers are farmers while others engage in trading, fishing, palm wine tapping, hunting activities etc.

The study is descriptive based on door to door questionnaire administration through interview of caregivers in the selected study communities. It was conducted in two Local Government Areas (LGAs) in Imo State namely Owerri Municipal and Orlu LGAs. The availability of hospitals and diagnostic facilities were important factors for their selection.

2.1.1 Data collection and analysis

Community level consent was obtained to carry out the survey. Individual oral consent was obtained before questionnaire administration. The minimum Sample size was calculated using the formula; $N=Z^2P\ (q)/d^2$ of Aronye [21]. A total of 6259 structured questionnaires (successfully completed) were administered randomly by trained data collectors through household survey of caregivers domiciled in the communities in the study area between September, 2005 and January, 2008. Incomplete questionnaires were not included in the study. The questionnaires were designed to obtain information on the choice of health care provision of caregivers, their educational levels attained and occupation during the period of survey.

The data was analyzed using statistical Package for Social Science (SPSS) version 9. The Chi-Square test was used test relationships between health seeking variables and education and economic status, also, to obtain the P-value with level of significance taken as $P<05$. Percentages and bar charts were used to show proportion.

3. RESULTS

3.1 Demographic Characteristics of Respondents in the Study Area, Owerri municipal and Orlu LGA

A total of 6259 respondents participated in the study area, out of which, 3529 were located in Owerri municipal LGA, while 2730 were in Orlu LGA. In Owerri municipal LGA, majority of respondents were business women (32.0%), followed by nurses (24.7%), civil servants (20.7%), teachers (12.3%), while the least respondents were housewives (10.3%). In terms of educational attainments, 48% of respondents had tertiary education, while 32.3% and 19.7% have had secondary and primary education respectively.

In Orlu LGA, respondents interviewed were civil servants (16.9%), teachers (20.2%), business women (36.3%), housewives (14.3%), and nurses (12.3%). Based on educational level of the respondents, 38.8% had obtained tertiary education, 27.5% secondary education while 33.7% had primary education.

3.2 Anti-Malaria Health Seeking Bahaviour among Respondents (Caregivers) in the Study Area

Malaria management practices of the caregivers were found to include; use of herbs from local healers, buying of over the counter anti-malarials from pharmacies and attendance to hospitals/clinics. The overall (6259) anti-malaria treatment seeking behaviour among respondents in the study area revealed that 2216(35.4%) of respondents used pharmacies for the treatment of their children, 1321(21.1%) were sought treatment in health-care facilities, 1696(27.1%) of respondents were self-medicating and 613(9.8%) of caregivers used herbs, while 232(3.7%) used both herbalists and hospitals (Fig. 1).

Of the 3529 interviewed caregivers (respondents) in Owerri, 1013(28.7%) indicated self-medication by buying anti-malarial drugs over the counter without laboratory diagnosis, 120(3.4%) self medication with laboratory results, 734(20.8%) attended hospital/clinic, 1242(35.2%) treated in pharmacies, while 420(11.9%) used herbal medicine. From the total of 2730 respondents interviewed in Orlu LGA, 683(25.0%) used self-medication without laboratory diagnosis and 57(2.1%) self medication with laboratory results. Moreover, 576(21.1%) of the participants attended hospital/clinic, 975(35.7%) treated their children in pharmacies; 194(7.1%) used herbal medicine, while 232(8.5%) of respondents sought hospital health care and used medicine from local healers.

3.3 Occupation Related Anti-Malarial Health Seeking Behaviour among Respondents for the Treatment of Children $\leq$ 5 years in Owerri Municipal and Orlu LGAs, Imo State

The health seeking behaviour among various occupational groups in Owerri showed self-medication without laboratory diagnosis as often practiced by nurses 361(41.4%), while use of hospital/clinic was among housewives 82(22.6%) and nurses 183(21.0%). Herbal treatment was often patronized by teachers 67(15.4%). Malaria management practices differed significantly ($P=$ 0.05) in relation to occupational groups in Owerri.

The malaria health seeking behaviour varied significantly among occupational groups in Orlu, LGA ($P<.05$). Results revealed that 203(44.0%) of civil servants, 395(39.8%) of business women

and 152(39.0%) of house wives often treated their children in pharmacies, while 182(33.0%) of teachers and 128(38.1%) nurses were often self medicating. (Table 1).

3.4 Educational Related Anti-Malarial Health Seeking Behaviour among Respondents for the Treatment of Children ≤ 5 years in Owerri municipal and Orlu LGAs, Imo State

The use of hospital/clinic 324(20.1%), pharmacies 761(47.1%) and herbal treatment 232(14.4%) was often observed among primary level respondents. Secondary 639(33.8%) and tertiary 816(29.6%) levels used pharmacies often. The health seeking behaviour in relation to educational level of respondents differed significantly (P<.05).

In Orlu LGA, Fifty two percent of 481 respondents with primary level education often used pharmacies often, while 239(31.8%) of secondary level and 355(33.5%) of tertiary level respondents were commonly self medicating (Table 2).

In Owerri, most respondents with primary and secondary and tertiary levels education preferred pharmacies 280(40.29%) and 421(36.93%) and 540 (31.9%).

4. DISCUSSION

The effort to document the malaria treatment seeking practices in the study area revealed that the caregivers were either practicing self-medication by buying antimalarial drugs over the counter without any consultation, or consulting or/and getting treatment for their children in medicine shops, or attending health-care facilities, or/and getting treatment from herbalists. Although consultation of health facilities was common, yet most treatments for malaria were obtained from pharmacies. Similar reports were made from various surveys, that self-medication is common in Africa. Among children with reported fever in Kenya and Togo, 66% and 83% respectively had been treated at home with an antimalarial drug [22,23]. Also home treatment rates have ranged from 28% in Zaire, 40% in Southeast Nigeria to 77.6% in Southern Ghana [24,25,26]. Poverty and ignorance, availability of credit facilities, affordability of shop-keeper's drugs, effectiveness of their drugs and their closeness to the people as well as speedy receipt treatment may be the reasons for patronage of drug sellers [27]. The tendency to provide home treatment earlier than seeking care at health facilities has been documented in Kenya, Togo, rural Malawi as well as in Nigeria [22,23,24,26]. Whereas, traditional healers were the sole source of antimalaria treatment for only 9.8% of the respondents, this concurred with the results of the studies conducted in Ngorongoro Crater Area, Northern Tanzania (8.2%) and Southeast Nigeria [28,29].

People's health seeking dynamics in the study were found to be similar to patterns reported from Kenya, Tanzania and Nigeria characterized by the simultaneous use of western antimalarial drugs and traditional medicines [28,29,30]. According to the Kleinmann's (1980) model of pattern of treatment seeking behaviour, a serious health condition stimulates people to seek simultaneous medical remedies, as which was observed in the study of Mutalemwa et al. [31]. They also observed that home treatment is common among the people of Mwakidi lain Tanzania.

The study has also revealed that low percentages of respondents were taking their children to the diagnostic laboratory for confirmation of malaria before initiation of antimalarial treatment. This clearly suggests that clinical symptoms were the most widely used approach to identification of malaria among caregivers.

Assessment of the utilization of health-care facilities for malaria treatment in this study revealed that only 21.1% of the respondents sought this option. Similar health facility utilization rates were observed by Ruebush (23) in Kenya (19%) and by Aribodor et al. [28] in Ihiala LGA, Southeast Nigeria (24.6%). The low attendance at health facilities in the study area could be due, according to Mboera et al. [29], to the fact that communities close to health facilities are expected to be more knowledgeable of the disease and its control through health education provided directly or indirectly by health-care providers, thus resulting in better understanding of treatment of malaria at home. Other factors may also contribute to the low attendance, such as shortage of antimalarial drugs in most government owned hospitals, while private health facilities though they provide better services are relatively expensive. The delay of treatment is also present due to large number of patients attending hospital and there is serious lack of medical practitioners that might influencd treatment seeking behaviour among caregivers.

Table 1. Occupation-related anti-malaria health seeking behavior among respondents in owerri municipal and orlu l.g.as imo state

Health Seeking Behaviour	No (%) respondents																	
	Occupational groups																	
	Civil servant			Teachers			BusinessWomen			HouseWives			Nurses			Total		Grand total
	OW No = 731	OR No = 461	T No = 1192	OW No = 434	OR No = 552	T No = 986	OW No = 1129	OR No = 991	T No = 2120	OW No = 363	OR No = 390	T No = 753	OW No = 872	OR No = 336	T No = 1208	OW No = 3529	OR No = 2730	OW + OR N0 = 6259
Self medication without laboratory diagnosis	151 (20.7)	77 (16.7)	228 (19.1)	139 (32.0)	182 (33.0)	321 (32.5)	253 (22.4)	211 (21.3)	464 (21.9)	110 (30.3)	87 (22.3)	197 (26.2)	361 (41.4)	128 (38.1)	489 (40.5)	1014 (28.7)	685 (25.1)	1699 (27.1)
Self medication with laboratory diagnosis	13 (1.8)	10 (2.2)	23 (1.9)	27 (6.2)	15 (2.7)	42 (4.3)	35 (3.1)	18 (1.8)	53 (2.5)	12 (3.3)	7 (1.8)	19 (2.5)	33 (3.8)	8 (2.4)	41 (3.4)	120 (3.4)	58 (2.1)	178 (2.8)
Hospital / clinic	153 (20.9)	101 (21.9)	254 (21.3)	80 (18.4)	130 (23.6)	210 (21.3)	236 (20.9)	189 (19.1)	425 (20.0)	82 (22.6)	73 (18.7)	155 (20.6)	183 (21.0)	91 (27.1	277 (22.7)	734 (20.8)	584 (21.4)	1318 (21.1)
Pharmacies	327 (44.7)	203 (44.0)	530 (44.5)	121 (27.9)	150 (27.2)	271 (27.5)	472 (41.8)	395 (39.8)	867 (40.9)	126 (34.7)	152 (39.0)	278 (36.9)	195 (22.4)	75 (22.3)	270 (22.3)	1241 (35.2)	975 (35.7)	2216 (35.4)
Herbalist	87 (11.9)	31 (6.7)	118 (9.9)	67 (15.4)	30 (5.4)	97 (9.8)	133 (11.8)	81 (8.2)	214 (10.1)	33 (9.1)	32 (8.2)	65 (8.6)	100 (11.5)	21 (6.2)	121 (10.0)	420 (11.9)	195 (7.1)	615 (9.8)
Herbalist and hospital	0 (0.0)	39 (8.4)	39 (3.3)	0 (0.0)	45 (8.1)	45 (4.6)	0 (0.0)	97 (9.8)	97 (4.6)	0 (0.0)	39 (10.0)	39 (5.2)	0 (0.0)	13 (3.9)	13 (1.1)	0 (0.0)	233 (8.5)	233 (3.7)

Key: No = Number Interviewed Ow = Owerri Municipal L.G.A; Or = Orlu L.G.A; T = Owerri + Orlu L.G.A

Table 2. Education-related anti-malaria health seeking behavior among respondents in owerri municipal and orlu l.g.as imo state

Health seeking behaviour	No (%) respondents											
	Educational level											
	Primary			Secondary			Tertiary			Total		Grand Total
	OW No = 695	OR No = 920	T No =1615	OW No = 1140	OR No = 751	T No =1891	OW No =1694	OR No =1059	T No =2753	OW No =3529	OR No =2730	OW + OR NO =6259
Self medication without laboratory diagnosis	127 (18.27)	91 (9.9)	218 (13.5)	367 (32.19)	239 (31.8)	606(23.1)	520 (30.7)	355 (33.5)	875(31.8)	1014 (28.7)	685 (25.1)	1699(27.2)
Self medication with laboratory diagnosis	13 (1.87)	5 (0.5)	18(1.1)	27 (2.37)	17 (2.3)	44(2.3)	80 (4.7)	36 (3.4)	116(4.2)	120 (3.4)	58 (2.1)	178(2.8)
Hospital / clinic	168 (24.17)	156 (17.0)	324(20.1)	180 (15.79)	168 (22.4)	348(18.4)	386 (22.8)	260 (24.6)	645(23.5)	734 (20.8)	584 (21.4)	1318(21.1)
Pharmacies	280 (40.29)	481 (52.3)	761(47.1)	421 (36.93)	218 (29.0)	639(33.8)	540 (31.9)	276 (26.1)	816(29.6)	1241 (35.2)	975 (35.7)	2216(35.4)
Herbalist	107 (15.4)	125 (13.6)	232(14.4)	145 (12.72)	42 (5.6)	187(9.9)	168 (9.9)	28 (2.6)	196(7.1)	420 (11.9)	195 (7.1)	615(9.8)
Herbalist and hospital	0(0.0)	62 (6.7)	62(3.8)	00.0)	67 (8.9)	67(3.5)	0(0.0)	104 (9.8)	104(3.8)	0(0.0)	233 (8.5)	233(3.7)

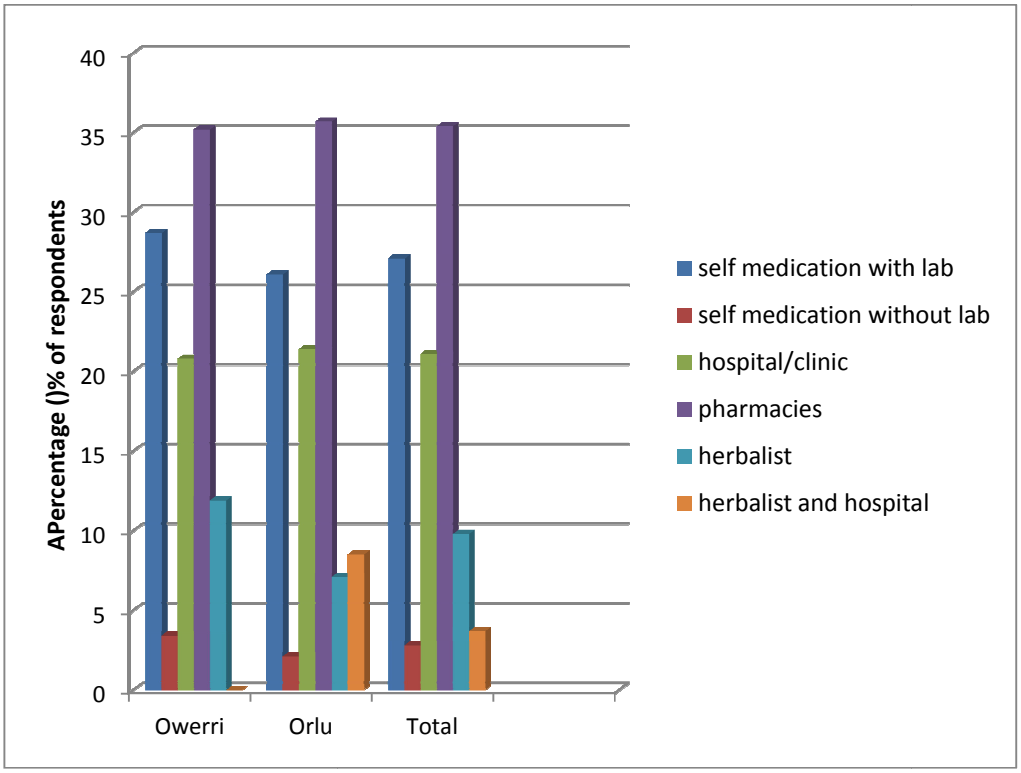

Fig. 1. Overall anti-mlaria health seeking behaviour among respondents

Contrary to the findings of this study, the rate of utilization of healthcare facilities by care givers was high (59%) in Ebonyi State, Nigeria [26], Tanzania (69.0% - 87.4%) [29] and Southern Ghana (77.6%) [25]. Observed high rates could be due to the fact that some governments, religious organizations and/or Non-governmental organization provide free medical treatment for children in those areas [26]. Mutalemwa et al., [31] also observed that some respondents were pessimistic about anti-malarial drugs available from drug shops and some of them were also relatively expensive. Moreover, shopkeepers lacked the necessary dispensing knowledge, and sometimes they even dispense expired drugs.

From the results obtained, it was also observed that anti-malaria health seeking behaviour among respondents in both LGAs (Owerri municipal LGA and Orlu LGA) were similar, with exception of some respondents in Orlu LGA who used more than one choice simultaneously to treat malaria.

The influence of occupation on the treatment seeking behaviour among respondents in Owerri municipal LGA revealed that, self-medication without laboratory diagnosis was frequent among nurses (41.4%). This observation in the present study is not surprising. Nurses belong to the medical profession and are well trained to recognize the symptoms of the disease, its treatment and its control. Therefore, they are capable of handling uncomplicated malaria at home. Use of pharmacies for the consultation and treatment of malaria in children $\leq$ 5 years of age was commonly observed among civil servants (44.7%) and business women (41.8%). Long working hours in the office or business premises, unstable or small financial budget of the family, proximity to the residence, and many other factors that were mentioned above may have influenced treatment seeking behaviour.

5. CONCLUSION

The study revealed that caregivers' health seeking dynamics were found to be similar to the patterns reported from other African countries like Kenya, Tanzania, Southern Ghana and Togo (Deming,1989; Mboera et al., 2005; Munguti, 2000). Self-medication was common among caregivers in the study area. Anti-malaria treatment pattern among caregivers was frequently monotherapy. Moreover, Chloroquine

and other older drugs were commonly used for the treatment of childhood malaria by caregivers/respondents. Use of artemisinin combination therapy by caregivers for treatment of malaria among children was very low within the study period.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

It is not applicable.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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