The Compliance of Mothers/ Care-Givers to Drugs used in the Treatment of Malaria among under Five Children in Ukwuani Local Government Area, Delta State

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ABSTRACT

The study was carried out to investigate the compliance of Mothers/Guardians to drugs used in treating malaria among under than five children in Ukwuani Local Government Area of Delta State. A well structured questionnaire was used to elicit relevant information from Mothers/Guardians on their life style of use and adherence to medications particularly for malaria treatment. Two hundred and three questionnaires were administered to the respondents by the researcher. The data obtained were analyzed with Statistical Package for Social Sciences (SPSS) version 21. The research questions were answered using descriptive statistics; while the research hypotheses were tested using regression analysis. The results were presented in tables. There was a statistically significant correlation (r= 0.26) between attitude of Mothers/Guardians and their adherence to treatment, there was also a statistically significant relationship between health seeking behavior of Mothers/Guardians and the ability of Mothers/Guardians to adhere to treatment of their wards(r= 0.23; F (1, 201) = 11.12 and p = 0.00). In conclusion, although attitude influences adherence to treatment, however, there are certain factors which may be responsible for this. It is therefore recommended that Mothers/ care-givers should be educated on the need to ensure adherence to medications given by medical personnel, so as to ensure proper treatment of the ailment, there is also need to create more awareness on the use of anti-malarial drugs amongst mothers.

Keywords: Compliance, Care Givers, Adherence, Malaria, Medication, Treatment.

INTRODUCTION

Malaria is a major public health problem leading to avoidable death. The latest estimates, released in December, 2013, shows about 207 million cases of malaria occurred in 2012 (with an uncertainty range of 135 million to 287 million) and an estimated 627 000 deaths (with an uncertainty range of 473 000 to 789 000), (WHO, 2014). Each year, between 300 and 500 million new cases are usually reported worldwide (Breman, *et al*, 2004). Malaria killed an estimated 482 000 children under five years of age, i.e. 1300 children every day or one child almost every minute (WHO, 2013), 90% of all malaria deaths occur in sub-Saharan Africa, Malaria mortality rates have fallen by 42% globally since 2000, and by 49% in the WHO African Region (WHO, 2014). Malaria remains the Nigeria's most important health problem accounting for about 25% of infant mortality, 30% of under-5 mortality and 11% of maternal mortality. Between 2000 and 2010; at least 50% of the population had one episode of malaria per year, while children below 5 years had two to four attacks(FMOH; 2011). The management of severe malaria remains challenging, mainly due to the fact that it does not only depend on the use of effective anti-malarial drugs. It also depends on relatively cost-intensive supportive measures, the availability of highly skilled personnel (Jimoh, *et al.,* 2007).

In Nigeria, the main strategy for reducing childhood morbidity and mortality is presumptive treatment of all fevers in children under five with anti-malarial drugs. This is in line with World Health Organisation (WHO) recommendation for endemic countries where the availability and use of laboratories are limited (WHO, 2006). Compliance to medication among children is one of many important issues that the health care providers should focus on. Medication compliance is critical for all aspects of pediatrics, specifically in successful treatment, disease prevention, and health promotion. It is unfortunate that numerous studies and physician accounts reveal difficulties in achieving compliance with pediatric medication. At least one third of all patients fail to complete relatively short-term treatment regimens (Jones, 1983). Medication compliance was well reviewed by Jones in 1983, and little has changed since then in terms of medication issues. Many pediatricians are surprised to know that not all the medicines prescribed to the patient are taken (Matsui, 1997). Children not taking their medications can be attributable to parents' lack of

understanding of the diagnosis, concerns about drug therapy effectiveness, and fear of medication side effects. This is especially true in children with chronic diseases. Age, socioeconomic status, race, and family factors can also influence compliance to treatment (Snodgrass, *et al.*, 2001 and McQuaid, *et al.*, 2003).

Strategies to improve compliance in children include regular contact between parents and physicians, information counseling, simplified drug regimens, and self-management plan. Physicians can improve the compliance by providing patient information sheet with names of medicines, schedule, dosage, and common side-effects (Gardiner, *et al.*, 2003). Health care providers should play a major role in this issue and adapt some points when communicating with pediatric patients. This study is aimed at evaluating the compliance of mother /care givers to drugs used in the treatment of malaria among under five children In Ukwuani Local Government Area, of Delta state.

METHODOLOGY
Study Design
A cross-sectional design was employed in this study. Random sampling technique was used to select five (5) communities in Ukwuani local government area of Delta state. This design was considered more appropriate for this study since it identifies, describes, and interprets conditions that exists, the practice that prevails and the point of view of people.

DESCRIPTION OF AREA OF STUDY
Ukwuani Local Government with its headquarters in Obiaruku was carved out of the former Ndokwa West on the 4th December, 1996. Ukwuani Local Government Area has a population of 119,034 by the 2006 National Population Census and a population 137,054 according to immunization yearly chart of 2010. Obiaruku is an ancient city with an estimated population of 1, 0211 people .Ukwuani Local Government, is a mono-linguistic society with Ukwuani as the language of the people. They are hospitable peace loving and law-abiding citizens (Ukwuani Local Government information unit population, 2002).

STUDY POPULATION
The population of this study consisted of mothers/care givers whose children are five years and below in Ukwuani Local Government Area of Delta State. It has nine (9) clans namely: Akoku, Amai, Obiaruku, Ebedei, Eziokpor Umukwata, Umuebu, Umutu and Ezionum.

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SAMPLE AND SAMPLING TECHNIQUE

Random sampling technique was used; using dip-hand method, five out of the nine clans in Ukwuani Local Government Area of Delta State were sampled for the study. They are Amai, Akoku (Umuaja ward), Obiaruku, Umutu and Ezionum, Umukwata (Owaabbi ward). A sample size of two hundred and three (203) was used. Purposive sampling technique, the reason for choosing this sampling procedure was in accordance with Nworgu (1991), assertion that purposive sampling ensures that only elements relevant to the research are included and it also guarantees selection of subjects that satisfy the requirements of the research only.

METHOD OF DATA COLLECTION

A structure questionnaire was administered to the respondents' in the five (5) clans, randomly selected. A total of 203 questionnaires were given to the client. The researcher self administered the questionnaire. It was retrieved the same day in each of the selected hospitals, health centers, houses and markets in each of the chosen communities it was distributed. The research was aided by free willed volunteers , who helped him in organizing the mothers who came to the hospital and health centers, For those questionnaires administrated to houses he was assisted in locating the houses were he could meet mothers within the age range of his research population . Most times they helped in explaining his purpose, thus reducing the barrier, since they are known faces in the community.

Ethical Considerations

Administrative approval was obtained from Ndokwa West Local Government Councils Authorities, Novena University Review Ethics Committee, Ministry of Education and the respective communities.

RESULT

Table 1: Demographic Characteristics of Respondents (Mothers/ Caregivers)

Variable		Frequency (N)	Percentage (%)
Location	Owabbi	33	16.30
	Ezionum	20	9.85
	Umuaja	22	10.83
	Umutu	45	22.17
	Obiaruku	82	40.39
	Amai	21	10.34
	TOTAL	**203**	**100.0**
Sex	Male	32	15.8
	Female	171	84.2
	TOTAL	**203**	**100.0**
Age	Younger Women($\leq$ 30yrs)	85	41.87
	Older Women (> 30yrs)	118	58.12
	TOTAL	**203**	**100.0**
Religion	Christianity	196	96.6
	Islam	4	2.0
	Traditional	3	1.5
	TOTAL	**203**	**100.0**
Marital status	Single	5	2.5
	Married	179	88.2
	Divorced	2	1.0
	Separated	3	1.5
	cohabiting	14	6.9
	TOTAL	**203**	**100.0**
Educational Level	No formal education	1	0.5
	Primary education	37	18.2
	Secondary education	128	63.1
	HND/ Bachelor	29	14.3
	Postgraduate	8	3.9
	TOTAL	**203**	**100.0**
Occupation	Trader	85	41.9
	Civil servant	40	19.7
	Farmer	26	12.8
	Others	52	25.6
	TOTAL	**203**	**100.0**
Type of hospitals	Public	129	63.5
	Private	26	12.8
	Both	48	23.6
	TOTAL	**203**	**100.0**

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Table 1.0 shows the result on the demographic characteristics of mothers/ caregivers in Ukwuani Local Government Area. The result shows that Owabbi was least (6.4%), while Obiarukwu made the largest number of respondents (40.4%). With respect to gender/ sex of respondents, the female had the larger number of respondents (84.2%), while the male made up 15.8% of the population studied. With respect to religion, the Christians were more (96.6%), while the Islam and traditional worshipers made up very small percentages (2.0% and 1.5%, respectively). The demographics on marital status showed the married having the largest percentage of 88.2%, while the single, divorced, separated and cohabiting,

had 2.5%, 1.0%, 1.5%, and 6.9% values, respectively. With respect to educational level, those with secondary education had the largest number (63.1%), while those with no formal education had the least number (0.5%). With respect to occupation, the traders were more (41.9%), while the farmers were least (12.8%). With respect to the hospitals/ clinics used the private (12.8%) and the public (63.5%).

Hypothesis One

Ho$_1$: Attitude of Mothers/care givers towards medication does not significantly predict their Adherence to treatment. To test this hypothesis, a linear regression was conducted and the summary is given in table 2 below

Table 2: Regression Output on the Relationship between Attitude of Mothers/Caregivers toward Medication and Adherence to Treatment

Model	R	R squared	Adjusted r squared	Std. Error of the estimate	Sig	Remark
1	.260	.068	.063	1.58531		
ANOVA						
Model 1	Sum of square	Df	Mean square	F	Sig.	Remark
Regression	36.768	1	36.768	14.630	.000	
Residual	505.153	201	2.513			
Total	541.921	202				
Variables in the Equation						
Model	B	SEB	Beta	t-ratio	sig	Remark
Adherence to treatment	10.728	.381		28.124	.000	
Constant	.185	.048	.260	3.825	.000	

p≤ 0.05.

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The table shows that $F_{(1, 201)} = 14.63$, $p = 0.00$, this shows a statistically significant correlation (r = 0.26) between attitude of mother/caregivers and their adherence to treatment. The Null hypothesis is therefore rejected. The Adjusted R squared value of 0.063 shows that 6.3% of the adherence to treatment by mothers/caregivers was influence by their attitude towards medication. The Beta value 0.26 shows the degree of association between attitude of mothers/caregivers and their Adherence to treatment and signifies that attitude of mothers/caregivers is not a very strong predictor of adherence to treatment.

Hypothesis Two

H_{o2}: there is no significant relationship between the health seeking behaviour of mothers/caregivers and their adherence to treatment. To test this hypothesis, a linear regression was conducted to explore the relationship between health seeking behaviour of mothers/caregivers and their adherence to treatment. The summary is given is Table 3.

Table 3: Linear Regression of Health Seeking Behaviour of Mothers/Caregivers and their Adherence to Treatment.

Model	R	R squared	Adjusted r squared	Std. Error of the estimate		Sig
1	0.229	0.052	0.048	1.59836		
ANOVA						
Model		Sum of Squares	Df	Mean Square	F	
1	Regression	28.418	1	28.418	11.124	0.001
	Residual	513.503	201	2.555		
	Total	541.921	202			
Variables in the Equation						
		B	Std. Error	Beta	T	Sig.
1	(Constant)	14.504	0.723		20.073	0.000
	health seeking behaviour	-.191	0.057	-0.229	-3.335	0.001

$p \leq 0.05$

The data in table 3 shows that there is a statistically significant relationship between health seeking behaviour of mother/caregivers and the ability of mothers/caregivers to adhere to treatment of their wards(

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r= 0.23;   F(1, 201)= 11.12 and p = 0.00). The adjusted r squared value of 0.048 signifies 4.8% influences of health seeking behaviour of mother/caregivers and the ability of mother/caregivers to adhere to the treatment of their wards. The beta value of - 0.23 shows that the health seeking behaviour of mothers/caregiver, is a moderate predictor of the ability of mother/caregivers to adhere to treatment of their wards.

DISCUSSION

Despite increased support for malaria control over the past decade, the malaria burden remains high in many endemic countries, particularly in sub-Saharan Africa countries like Nigeria. The reason for this is mainly because of lack of compliance or adherence to treatment with anti-malaria. Early treatment, which is one of the cornerstones of malaria control in sub-Sahara Africa, depends upon prompt recognition of its symptoms and signs at the home level (Chirdan, et al., 2008). It is at this level that caregivers recognize malaria and decide on treatment options to use. Caregivers could be parents, nurses or teachers. Mothers are the major primary caregivers in malaria and other illnesses at home. With respect to the health seeking behaviour of mothers/ caregivers, the study showed there was a statistically significant relationship between health seeking behavior of mother/caregivers and the ability of mothers/caregivers to adhere to treatment of their wards(r = 0.23; F(1, 201)= 11.12 and p = 0.00), the hypothesis is therefore rejected . This implies that the better the health seeking behaviour of the mothers/ caregivers, the more they are likely to adhere to treatment of the children. This is not in agreement with the report of Obuikwu et al., (2011), who reported that health seeking behaviour of young mother is not significantly related to their adherence to the treatment of their young children. Nebe et al, (2002), however agrees with this finding, which stated that the adherence to children's treatment by mothers is significantly associated with attitude in seeking for health care.

Ajayi et al., (2008) in their study on 'Assessment of a treatment guideline to improve home management of malaria in children in rural south-west Nigeria' reported that all the 230 caregivers in the intervention group and 182 in the control group who treated with orthodox drugs at home at baseline, commenced treatment within 24 hours of mother noticing fever while 176/178 (98.9%) and 138/ 139 (99.3%) respectively did so post

intervention. The proportion of mothers who took sick children to the pharmaceutical store within 24 hours of noticing fever increased from 17/18 (94.4%) at baseline to 15/15 (100%) post intervention in the intervention arm (p = 0.93) while 6/7 (85.7%) and 10/12 (83%) did so at baseline and post intervention respectively in the control arm (p = 0.61). There was a reduction in the proportion of mothers who took febrile children to a health facility within 24 hours of noticing (Ajayi, *et al.,* (2008). With respect to the factors that influence adherence to treatment of malaria, the findings of this study suggested that there was a statistically significant relationship between factors that influences adherence at treatment and the ability of mothers/caregivers to adhere to treatment of their wards(**r** = 0.32; **F**(1, 201)= 22.82 and *P* = 0.00).

CONCLUSION

In conclusion, the present study showed that there was a statistically significant positive correlation between attitude of mother/caregivers and their adherence to treatment; the health seeking behaviour of mothers/ caregivers, there was a statistically significant relationship between health seeking behaviour of mother/caregivers and the ability of mothers/caregivers to adhere to treatment of their wards. There is therefore the presence of adherence to malaria treatment among women in Ukwuani L.G.A. of Delta State. Malaria, being a major cause of fever in children, requires mothers and caregivers to be well-informed and provided with guidelines on the early recognition of its symptoms and signs, appropriate diagnosis, and treatment with anti-malarial drugs.

RECOMMENDATIONS

1. Mothers should be educated on the need to ensure adherence to medications given by medical personnel, so as to ensure proper treatment of the ailment.
2. There is therefore need to create more awareness on the use of anti-malarial drugs amongst mothers.
3. Mothers should also be encouraged to avoid drug misuse, overuse and underuse.

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