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Family and Social Determinants of Health-seeking Behaviour of Caregivers of Febrile Children in an Urban City of South-Eastern Nigeria

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Abstract

Context: The highest rates of child mortality are still in sub-Saharan Africa. The leading causes of morbidity and mortality in sub-Saharan Africa are infectious diseases of which fever is a common feature of. Early diagnosis and prompt treatment of fever is necessary if mortality of children under the age of five years is to be substantially reduced in this part of the world.

Aim: To determine the family and social factors associated with the health seeking behaviour of mothers of febrile children.

Subjects and methods: This was a hospital based cross-sectional study involving mothers/caregivers. Relevant data on socioeconomic and family characteristics were obtained using pre-tested, interviewer-administered questionnaires.

Statistical analysis used: The data was coded and analyzed using SPSS version 16.0. The results were expressed as rates and proportions. Fisher's exact test was computed and association considered significant if P value is equal to or less than 0.05.

Results: A total of 400 mothers/caregivers were finally studied. 51.5% of the caregivers were aged between 30 and 39 years. Majority (91.5%) of them had at least secondary education.

Three hundred and thirteen (78.3%) mothers gave drugs as initial action while only 8 (2%) took their children to a health facility to access care. One hundred and ninety eight (49.6%) mothers sought appropriate care while 121 (30.2%) mothers sought care promptly.

Conclusions: The major factors determining the health-seeking behaviour of caregivers of febrile children are age of the child, educational and occupational status of the caregivers, household heads as well as income.

Keywords: Health-seeking behavior; Fever; Prompt care; Caregivers; Mortality; Appropriate care

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Introduction

Fever remains the commonest symptom in children under the age of five years presenting to any health facility [1]. While fever in developed countries is mainly caused by self-limiting viral infections, it may also be a pointer to more serious infections

especially bacterial infections [2,3]. Fever is usually the starting point for malaria and most other infectious diseases in children in tropical countries where it serves as a useful diagnostic and prognostic marker. Generally, infectious diseases have become a major concern as they currently account for almost two thirds of all deaths of children under the age of five years [4].

The global burden of deaths of children under the age of five years is increasingly concentrated in Sub-Saharan Africa [5]. Of the 24 countries with mortality rate of children under the age of five years of at least 100 deaths per 1,000 live births in 2011, 23 are in Sub-Saharan Africa while the remaining one is in South Asia.

Thus the significance of Sub-Saharan Africa in reduction of mortality of children under the age of five years cannot be ignored. Approximately half of the world's population is at risk of malaria [6]. Most of the deaths occur among children living in Africa where a child dies every minute from malaria [6]. There is no doubt that early diagnosis and treatment of malaria reduces diseases and prevents death. With 43 malaria-endemic countries, Africa accounts for 78% of estimated malaria cases and 91% of deaths in the world, yet Africa is only 12-13% of the world's population [7,8].

For decades, fever had served as the entry point for presumptive treatment of malaria in Nigerian children, in line with World Health Organisation (WHO) recommendation for endemic countries where the availability and use of laboratories are limited [9,10]. One of the strategies endorsed by the Roll Back Malaria Initiative to reduce child morbidity and mortality from malaria in Africa is early diagnosis and prompt treatment of malaria with effective antimalarial drugs through the existing health delivery system.

With the recent declaration by the World Health Organisation that Rapid Diagnostic Testing (RDT) be done before commencement of antimalarial therapy, [11] the importance of accessing care from formal health facilities cannot be overemphasized.

Mothers irrespective of the sociodemographic characteristics (**Table 1**) make the first diagnosis of their child's febrile illness by defining and interpreting changes in their child's behaviour and temperature [12]. Unless mothers/caregivers see the need for prompt treatment of fevers, even the best designed treatment strategy might not be used. Studies conducted in the six geopolitical zones of the country indicate that 75% of mothers/caregivers indeed take action against illnesses of their children under the age of five years within the first 24 hours but further analysis revealed that only 15% of such actions could be classified as appropriate under the national treatment guidelines [13].

They usually visit a formal health service provider after the illness has failed to respond to several drugs and ineffective self-treatment. This practice increases morbidity and mortality as well as contributing to possible emergence of drug resistance.

Appropriate and prompt healthcare-seeking is critical in the management of childhood illnesses. The WHO estimates that seeking appropriate and prompt care could reduce childhood deaths due to illnesses by 20% [14]. A number of studies conducted in developing countries have shown that delay in seeking appropriate care or not seeking any care causes a large number of child deaths [15].

Improving health seeking behaviour can therefore significantly contribute to the reduction of childhood mortality [15,16].

This study therefore aims to understand the health-seeking behaviour of mothers of children under the age of five years with

Table 1 Socio-demographic characteristics of mothers and care-givers of febrile children.

Variables	Frequency	Percentage
Age		
20-24	48	12.0
25-29	106	26.5
30-34	80	20.0
35-39	70	17.5
40-44	56	14.0
45-50	36	9.0
>50	4	1.0
Level of education		
Primary	34	8.5
Secondary	186	46.5
Tertiary	180	45.0
Caregiver/Mother's occupation		
Unemployed	100	25.0
Civil Servant/Professional	120	30.0
Self Employed	180	45.0
Marital status		
Single	14	3.5
Married	379	94.8
Separated/Divorced	7	1.7
Mother's monthly income(1 US\$: ₦170)		
#0-10,000	156	39.0
#11,000-20,000	104	26.0
#21,000-30,000	32	8.0
#31,000-40,000	24	6.0
#41,000-50,000	26	6.5
Above#50,000	58	14.5
Type of caregiver		
Mother	388	97
Aunt	4	1
Grandmothers	4	1
Father	4	1
Family functionality		
Severely dysfunctional	10	2.5
Mild/moderately dysfunctional	80	20.0
Functional Family	310	77.5

fever and particularly to determine the family and social factors associated with health-seeking behaviour.

Subjects and Methods

The study was a hospital-based descriptive study carried out between March 1st and October 31st 2012 on a cross-section of 420 mothers of febrile children under the age of five years presenting with fever at the Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi, Anambra State, South-Eastern Nigeria (**Table 2**).

A minimum sample of 287 was calculated using the formula estimating minimum sample size when studying proportions with a population size less than 10,000 using an estimated population size of 2600 febrile children under the age of five years based on the previous attendance to the clinic [17].

Table 2 Characteristics of the febrile children.

Variables	Frequency	Percentage
Gender		
Males	230	57.5
Females	170	42.5
Age		
<1 year	113	28.2
1-<2 yrs	122	30.5
2-<3 yrs	77	19.3
3-4 yrs	50	12.5
4-≤ 5 yrs	38	9.5
5yrs	Number of siblings	
None	93	23.2
1	101	25.3
2	88	22.0
3	66	16.5
4	28	7.0
5	12	3.0
>5	12	3.0
Other Symptoms		
None	118	29.5
Cough	115	28.7
Passage of watery stool	52	13.0
Chills and rigor	34	8.5
Abdominal pain	21	5.3
Rashes	20	5.0
Vomiting	19	4.8
Loss of appetite	11	2.7
Catarrh	10	2.5
Episodes of Fever (in the previous six months)		
Non	45	11.3
One	130	32.5
Two	97	24.3
Three	74	18.5
More than three	54	13.5

A 95% confidence level and 5% margin error was used. A total of 420 febrile children were eventually studied.

The febrile children were consecutively recruited into the study based on the selection criteria. Any febrile child selected automatically qualified the caregiver to be recruited in the study.

A combination of structured interview in a pre-tested questionnaire and clinical measurements were used for data collection. The questionnaire was pre-tested by the researchers on thirty randomly selected caregivers of febrile children attending the Children Out-Patient unit (CHOP) of the Nnamdi Azikiwe University Teaching Hospital (NAUTH). At the end of the pre-test activity, necessary adjustments were made on the questionnaire before proceeding with the study.

Caregivers whose children met the inclusion criteria had the details of the study carefully explained to them and an informed consent form signed by them.

Ethical clearance was obtained from the ethical committee of NAUTH.

Definitions and diagnostic criteria

Health-seeking behaviour: Any effort made by a caregiver to obtain an expert assistance or treatment from a medical healthcare provider outside the home during the febrile illness. The health-seeking behaviour in this study was defined by two outcomes; appropriate care defined by where treatment was sought from and prompt care defined by duration of observation prior to seeking care.

Appropriate care in this study refers to the healthcare sought from qualified medical professionals in government or private health facilities (**Table 3**).

Prompt care in this study is described by the healthcare sought or given within 24 hours from the onset of fever.

Family: The smallest network of people who interact daily, to

Table 3 Care-seeking pattern of mothers/caregivers of febrile children.

Variables	Frequency	Percentage
Source of care		
Self Medication with drugs from previous treatment	60	15
Patent medicine vendor	128	32
Health facility	204	51
Pharmacy	4	1
Traditional remedies	2	0.5
Healing home	2	0.5
Initial action		
Give drugs at home	313	78.3
Tepid sponging	63	15.7
Take child to hospital	8	2.0
Others	16	4.0
Decision taken by		
Mother/caregiver	183	45.8
Both parents	167	41.8
Father	46	11.5
Others	4	1.0
Duration before care was sought		
Immediately (within 8 hours of onset)	31	7.8
One day (≥8 hours but ≤24 hours)	75	18.7
Two days (>24 hours but ≤ 48 hours)	115	28.8
3 days and above (>48 hours)	179	44.7
Classification of care-seeking behaviour		
Appropriate	204	51
Inappropriate	196	49
Health facility includes private hospitals, government hospitals, as well as primary health care centres.		

provide domestic needs of children and assure their survival and growth.

Family functionality: A process by which the family operates as a whole including communication and manipulation of the environment for problem solving such as seeking care for a febrile child (**Table 4**).

Statistics: The data was collected by 4 trained social workers, sorted, coded and analyzed using software Statistical Package for the Social Sciences (SPSS) version 16. Descriptive data was expressed as mean \pm standard deviation for continuous variables and percentages for categorical variables.

Bivariate analysis involved the use of Fisher's exact test for testing the significance of associations between categorical variables. The outcome variables were compared with the sociodemographic characteristics of the mothers.

Results

A total of 420 caregivers were studied but the final number of questionnaires analyzed was 400.

Of the 400 mothers studied, only 6.3% used thermometer to detect fever. Sixty-nine and half percent (69.5%) used palpation method whereas the rest used behavioural changes to predict fever. While two hundred and four (204, 51%) caregivers accessed care from a health facility, one hundred and twenty-eight (128, 32%) accessed care from the patent medicine vendors.

Three hundred and thirteen (313, 78.3%) caregivers treated their children at home with drugs on noticing fever. Only 26.5% of caregivers accessed care from a health facility within 24 hours of onset of fever.

At bivariate analysis, there were statistically significant associations between health-seeking behaviour and certain family variables. Children who were aged less than 1 year were more likely to be taken to a health facility to access care when compared to the older children ($P=0.008$); parents who had secondary education and above accessed care from health facilities more than those who had primary education and below ($P=0.004$); the higher the income of the caregiver, the more the caregiver accessed health care services from a health facility ($P=0.004$).

The caregiver's occupation was also found to be a statistically significant variable.

Discussion

This study confirmed that majority of the mothers offered care to a febrile child but the care in most cases were inappropriate. Three hundred and thirteen (313, 78.3%) mothers gave drugs as initial action on noticing fever with the highest proportion of caregivers procuring drugs from a patent medicine vendor. Only 7 (1.8%) mothers took their children to hospital on noticing fever. This is in line with other studies within the country where there is high prevalence of inappropriate health care seeking behaviour [13].

The age of the child was found to affect health seeking behaviour of mothers. Appropriate health care seeking was highest for the youngest age group (0-12 months) and slowly declined thereafter

for the older age groups. This appeared to be a common finding in many studies in Africa [18,19] and could be attributed to the allocation of scarce resources to the younger age group whose care cannot be handled at home rather than the older age group who can be possibly cared for at home.

Although, more than 50% of mothers aged less than 40 years accessed care from formal health facilities, maternal age in this study was not significantly associated with health-seeking behaviour. This is contrary to the finding by Ogunlesi and Olarenwaju that maternal age was associated with appropriate health seeking behaviour [20].

Maternal education in this study was also found to be associated with where treatment was sought from. A higher percentage of caregivers with primary level of education (38.2%) accessed care from patent medicine vendors when compared with caregivers with secondary (34.9%) and tertiary (27.8%) education. The caregivers with tertiary education (19.4%) constituted the highest percentage of those who treated their febrile children at home. This may be related to the fact that the more learned a caregiver is, the more likely she will know about drugs previously used and will resort easily to them whenever the child becomes febrile.

The occupation of both mothers and household heads were found to be significantly associated with where treatment was sought from. This finding agrees with some other studies in the country [21]. The effect of occupation on health seeking behaviour could be linked to its ability to increase women's access to resources as well as their economic power within the household, [22] which invariably increases their power to make decisions.

The income of the caregiver was found to be significantly associated with where treatment was sought from. The caregivers who earned above \$300 monthly constituted the least group of those who sought care from patent medicine vendors, but however formed the highest proportion of caregivers who practiced self-medication.

This study did show that those who were never married (single) were the least likely to seek 'prompt' care whereas those who were formerly married (separated/single) were most likely to seek prompt care. However marital status did not show any significant association with health seeking behaviour.

In terms of sex preference, the study showed no significant difference between male and female children. Although a number of studies have shown male preference in seeking health care for febrile children, [23,24] this could be as a result of the cultural importance placed on males in those parts of the world.

Family support is an important form of social support. Having a close-knit and supportive family provides emotional support, economic well-being and increases overall health. Family support in this study was determined by family function using 'family apgar' module. The level of support, assistance and partnership the caregiver receives with respect to seeking care for a febrile child was assessed. Based on this, the level of functionality of the families of the caregivers was determined.

No significant association between family function and health seeking behaviour was found in this study. Considering the fact that every illness poses a stress to the family, an understanding

Table 4 Determinants of appropriate care-seeking behaviour of mothers/caregivers of febrile children.

Variables	Bivariate Analysis		Chi -square (p-value)	Multivariate Analysis (Logistic regression)	
	Appropriate care-seeking Yes (%)	No (%)		aOR*	95% CI
Mothers Age (years)					
≤35	150 (64.1)	84 (35.9)	13.25 (0.057)*	2.9	0.9-12.11
>35	66 (39.8)	100 (60.2)			
Educational level					
Primary/Secondary	112 (50.9)	108 (49.1)	16.34 (0.04)*	1.24	0.54-1.68**
Tertiary	92 (51.1)	88 (48.9)			
Occupation status					
Unemployed	58 (58)	42 (42)	28.15 (0.004)*	1.80	1.12-2.5**
Employed	146 (48.7)	154 (51.3)			
Marital status					
Single/Separated	11 (52.4)	10 (47.6)	6.54 (0.523)		
Married	200 (52.8)	179 (47.2)			
Average monthly income (US\$)					
≤ ₦ 10,000 (58)	92 (58.9)	64 (41.1)	29.89 (0.004)*	1.73	1.11-2.75**
> ₦ 10,000 (58)	112 (45.9)	132 (54.1)			
Child gender					
Male	119 (51.7)	111 (48.3)	1.36 (0.727)		
Female	85 (50)	85 (50)			
Child age					
≤2 yrs	113 (50.9)	109 (49.1)	27.12 (0.008)*	1.28	0.84-1.48**
>2 yrs	81 (48.2)	87 (51.8)			
Family functionality					
Functional family	159 (51.3)	151 (48.7)	2.97 (0.819)		
Dysfunctional family	45 (50)	45 (50)			
Number of children in the family					
<3	149 (52.8)	133 (47.2)	11.51 (0.642)		
≥3	55 (46.6)	63 (53.4)			
Duration of seeking care					
≤24 hours	79 (65.3)	42 (34.7)	8.6 (0.412)*		
>24 hours	119 (42.7)	160 (57.3)			
Presence of other symptoms					
No	142 (50.4)	140 (49.6)	30.25 (0.002)*	1.12	0.56-2.39**
Yes	56 (47.5)	62 (52.5)			

Reference-(1) Adjusted odds ratio (aOR). *= significant at bivariate analysis. Only variables that were significant at bivariate analysis were included in the logistic regression model.

of the baseline level of the family function is necessary. Further studies are therefore needed to ascertain this finding.

Conclusion

The health-seeking behaviour of caregivers of febrile children was found to be influenced by the age of the child, educational status of the caregiver/mother, occupation and income of the caregiver/mother. Sex of the child and marital status of the caregiver were not associated with health-seeking behaviour in this study.

Recommendation

Based on the findings of this study, it is necessary that policy makers with the government put up a structure for free treatment

of febrile children aged five years and less especially at primary care level if mortality of children under the age of five years is to be reduced substantially.

In addition, there is need to empower women economically so as to be able to take decisions in their families particularly with respect to the health of their children as well as their education at all cost.

Limitation of the Study

This study relied on self-reported answers which may be subject to recall and reporting bias. Other cofounders that may affect health-seeking behaviour such as health facility characteristics and presence of other symptoms are still possible.

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