PRE-FACILITY MANAGEMENT OF CHILDHOOD ILLNESSES: THE EXPERIENCE IN ALIMOSHO LOCAL GOVERNMENT AREA OF LAGOS STATE, NIGERIA

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Abstract

Background: *The health of children is a global priority, linked to the care given in illness. Prompt and early care must start at home to avert death. There are limited studies on pre-facility management practices of childhood illnesses by care-givers in Nigeria.*

Objective: *To assess the pre-facility treatment practices employed by mothers in response to common childhood illnesses in under-five children in Alimosho Local Government Area(LGA) of Lagos State, Nigeria.*

Methods: *This was a descriptive cross-sectional study carried out among 360 mothers of Under-five children in Alimosho LGA between March and May 2016. The respondents were selected using multi-stage sampling method. Structured interviewer-administered questionnaires were used for data collection. SPSS version 20.0 was used for data analysis and presented as frequencies and means; bivariate analysis was used to determine significant associations.*

Results: *The mean maternal age was 32.69 ± 6.46 years. Only 36.7% of the mothers attained tertiary education. Majority of the respondents carried out appropriate practices concerning fever 222 (74.2%), diarrhea 176 (63.8%) and vomiting 138 (52.9%) while 102 (39.5%) of the mothers employed inappropriate actions in response to convulsion. Majority of the respondents had a positive attitude towards childhood illnesses 195 (54.2%) versus 165 (45.8%). There was a statistically significant association between respondents' level of education and attitude with good health-seeking behavior in 335 (93%) of them.*

Conclusion: *This study demonstrates that most mothers portrayed appropriate home management practices concerning some childhood illnesses with positive attitude and good health-seeking behavior.*

KEYWORDS: *Home treatment practices, Mothers, Under-five children, Nigeria*

Introduction

The health of children is a priority expressed by most countries in the world and it is closely linked to the care given by their mothers[1]. Lack of, or poor quality of care has its effect on children. Early and appropriate care for sick children starting from the home averts death[2]. Parents and caregivers are encouraged to initiate some basic management at home before seeking health facility care. Pre-facility management of illnesses denotes appropriate first basic treatment given to an ill child at home before referral to a health facility[3]. Although the under-five mortality rate globally is declining from 93 deaths per 1000 live births in 1990 to 39 deaths per 1000 live births in 2018, the Sub-Saharan African region is still lagging[4]. Of the 5.3 million children under the age of five years that died worldwide in 2018, roughly 50% occurred in sub-Saharan Africa, making it one out of every 13 children in sub-Saharan Africa died before seeking health care services at the health facility and before reaching their fifth birthday[5]. A study in Rwanda[6] noted that 22.7% of children under-five that died did not seek care in any health facility. In Nigeria, the under-five mortality rate was evaluated at 119.9 per 1000 live births[7] in 2018. It was estimated that more than 700,000 Nigerian children died before attaining their fifth birthday equivalent to losing 2000 children daily[8]. About 60 percent of these deaths had been attributed to malaria (20%) pneumonia (17%), prematurity (12%) and diarrhoea (11%) [9]which were all preventable[10].In Lagos Nigeria, a study reported that the most common killers of the under-five children were bronchopneumonia, sepsis, anaemia and malaria[11]. Pneumonia, diarrhoea and malaria together were the cause of 3 out of every 10 child deaths before the age of five, and nearly half of under-five deaths globally were associated with an underlying malnutrition[12].

The World Health Organization (WHO) estimates that prompt and appropriate care by mothers and caregivers could reduce child death[13] by 20% .Through the community integrated management of childhood illnesses (IMCI), the WHO addressed behaviours that improve health outcome in childhood illnesses such as breastfeeding, complementary feeding, micronutrients supplementation, personal hygiene, immunization, continued feeding and increased feeding during illnesses, as well as home treatments of infections and compliance with health workers recommendations[14]. The IMCI strategy had 3 components which were: improvement of health workers' skills, improvement of the health system and improvement of the country and family practices towards health care[15]. The third component of IMCI addresses the household and community[16]. It should be noted that many sick children die in the community and most of the causes of ill-health can be prevented if countries and households observe some positive practices which may go a long way to reducing child mortalities[16].

Home management practices in children include, continuous feeding and offering more food and fluids when the child is sick, giving appropriate home treatment for illnesses, taking appropriate actions to prevent and manage injuries and accidents[17]. According to the community IMCI strategy, mothers at home should have the basic knowledge of treatment of common childhood illnesses such as diarrhoea and fever using appropriate remedies such as salt sugar solutions, breastmilk, and mild antipyretics[18]. Several studies had documented that mothers had little knowledge of illnesses and may engage in poor practices regarding childhood illnesses[12]. Mothers had also been shown to have varied approaches to home management of illnesses[19,20]. In some studies that documented the home management of fever, paracetamol, an antipyretic, was the most commonly

administered drug among respondents, but bathing and tepid sponging of febrile children were the predominant at-home practices for febrile episodes in children[19,20]. Most studies on the management of childhood illnesses focus on children who present in health facilities. There is limited data on pre-facility management practices of childhood illnesses available on community-based studies in Nigeria. This study aims to report the pre-facility treatment practices employed by mothers in response to common childhood illnesses in under-five children in Alimosho Local Government area of Lagos, Nigeria

Materials and methods

This was a community-based descriptive cross-sectional study carried out on 360 mothers with children under five years of age who reside in Alimosho LGA, Lagos State, Nigeria. Care-givers other than parents or mothers of under-fives who at the time of the study did not live in Alimosho were excluded from the study.

Multistage sampling method was employed to select 360 mothers of under-five children who reside in Alimosho. The selection of Alimosho, the wards, streets and the participants were all achieved by balloting.The main outcome variable was to determine the proportion of mothers who had appropriate practices toward common childhood illnesses. A secondary outcome was to determine the attitude of mothers to appropriate health-seeking practices.

A standardized, structured, pretested, interviewer-administered questionnaires which was adapted from the IMCI questionnaire was used for data collection. The questionnaire had three sections: socio-demographic characteristics, perception and attitude towards childhood illnesses and home practices for common childhood illnesses presentations such as fever, cough, convulsions, vomiting, and diarrhoea. Six research assistants who were Community health officers were recruited and trained for two days on administering the interview questionnaires. They assisted in the data collection.

For each of the questions on attitude, the responses were scored from 1 to 5 with higher scores for more favourable attitude towards correct responses to critical signs of illness. Questions regarding home care practices were categorized as "appropriate" or "inappropriate" home care practices. For fever, "appropriate" home care was defined as bathing a febrile child with lukewarm water or tepid sponging and /or administration of antipyretics drugs while "inappropriate" home care was defined as administration of local herbs and/or teething mixtures or practicing other unorthodox methods such as covering child up when hot. For diarrhoea and vomiting, "appropriate" care was defined as giving breast milk (for breastfed infants), pap and water with food, giving oral rehydration therapy, salt sugar solution and increasing the quantity of fluid given. "Inappropriate" care was giving water alone, high-fat milk, and not increasing the quantity of fluid.For convulsion, "appropriate" home care was to remove the child's clothes and placing the child on his left side, "inappropriate" care was placing of spoon or fingers in the child's mouth, applying harmful substances like cow dung, onion, or giving the child any substance to drink while convulsing. Actions like praying while not applying any other appropriate action, were all counted as "inappropriate" care.

Data were entered, cleaned, and analyzed using the statistical package for social science (SPSS) version 20.0. Results were presented in the form of tables and figures. Categorical data were presented as frequency and percentages while measures of central tendencies including mean (SD), median and IQR were used for

continuous data where appropriate. Test of association between dependent variables such as the attitude and practices to childhood illnesses and independent variables was carried out using Pearson chi-square or Fisher exact when the sample is small. A p-value <0.05 was considered statistically significant.

Ethical approval for the study was obtained from the Research and Ethics Committee of Lagos University Teaching Hospital (registration number NHREC: 1912/2008a) with approval number ADM/DCST/HREC/APP/921. Permission for the study was also given by the Chairman of Alimosho LGA. Informed consent was obtained from the mothers before enrolment and administration of questionnaires. Confidentiality of data collected was strictly maintained by numbering without names of the mothers.

Results

Three hundred and sixty (360) questionnaires were filled and returned. Table 1 showed the demographic characteristics of the participants. The mean maternal age was 32.69 ± 6.46 years. Majority of mothers were of the Yoruba ethnic group (63.9 %). Only 36.7 % of the mothers attained tertiary education.

Table 1: Socio demographic characteristics of the mothers of children under-five

Variables	Frequency (%) N=360
Age group (years)	
20-29	128 (35.6)
30-39	175 (48.6)
40-49	57 (15.8)
Marital status	
Married	334 (92.8)
Never	3 (0.8)
Married	23(6.3)
No longer	
Married	
Level of education	
None	14 (3.9)
Primary	35 (9.7)
Secondary	174 (48.3)
Tertiary	132 (36.7)
Others	5 (1.4)
Religion	
Christianity	212 (58.9)
Islam	146 (49.6)
Others	2 (0.6)
Ethnic group	
Hausa	22 (6.1)
Yoruba	230 (63.9)
Igbo	90 (25.0)

Others	18 (5.0)
Parity	
1	57(15.8)
2-4	293(81.4)
>4	10(2.8)

Figure 1 shows mothers' attitude towards childhood illnesses. Most mothers agreed that they "should worry when their child's body is hot" 196 (54.4 %); that "a child who is breathing fast is very sick" 210 (58.3 %) and should care for a child who was passing watery stool 219 (60.8 %). A little over half of the mothers agreed that "a child who is not eating should still be offered food" 211 (58.6 %). Overall, slightly more than half of the respondents had a positive attitude toward childhood illnesses 54.2% versus 45.8%

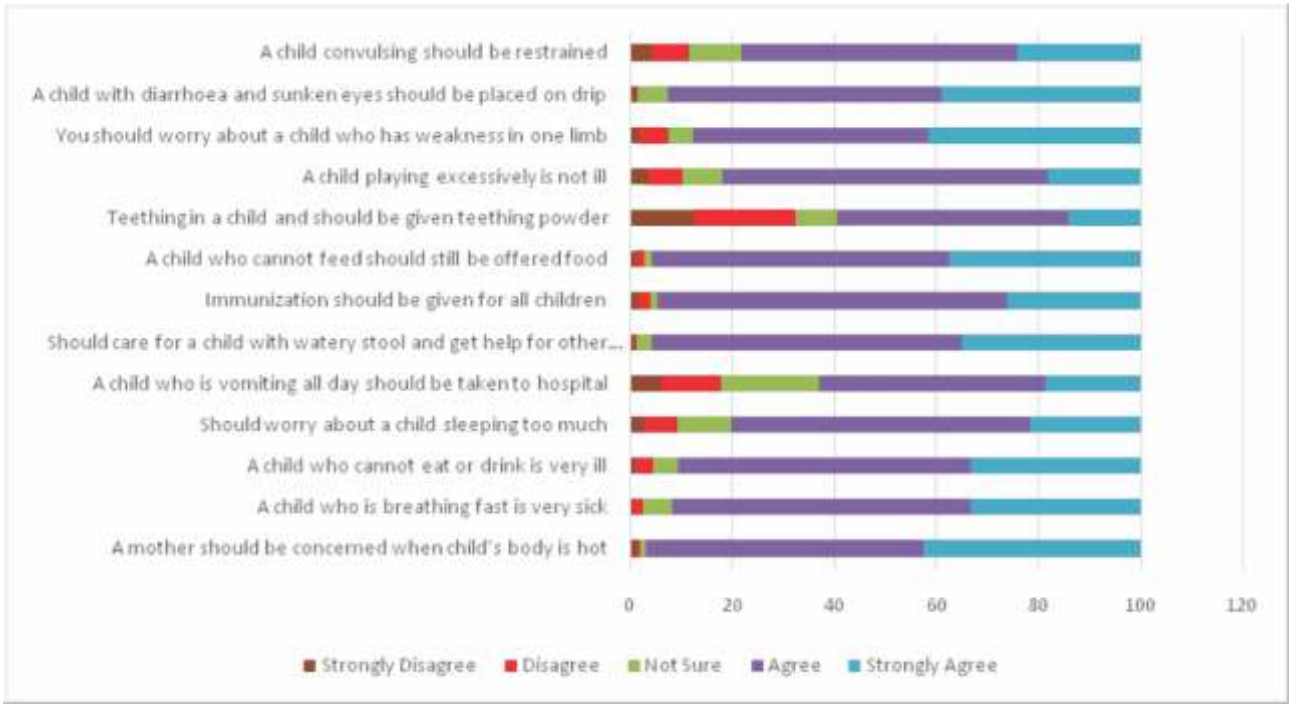

Figure 1: Respondents' attitude towards childhood illnesses

Figure 2 shows home care practices adopted by mothers for common childhood illnesses. Majority of the respondents would carry out appropriate actions concerning the danger signs of fever (74.2%), diarrhoea (63.8%) and vomiting (52.9%) while only 39.5% of the mothers would carry out appropriate action in response to convulsion. Majority would rather be praying, applying onions to the eyes or other inappropriate practices to a child with convulsion.

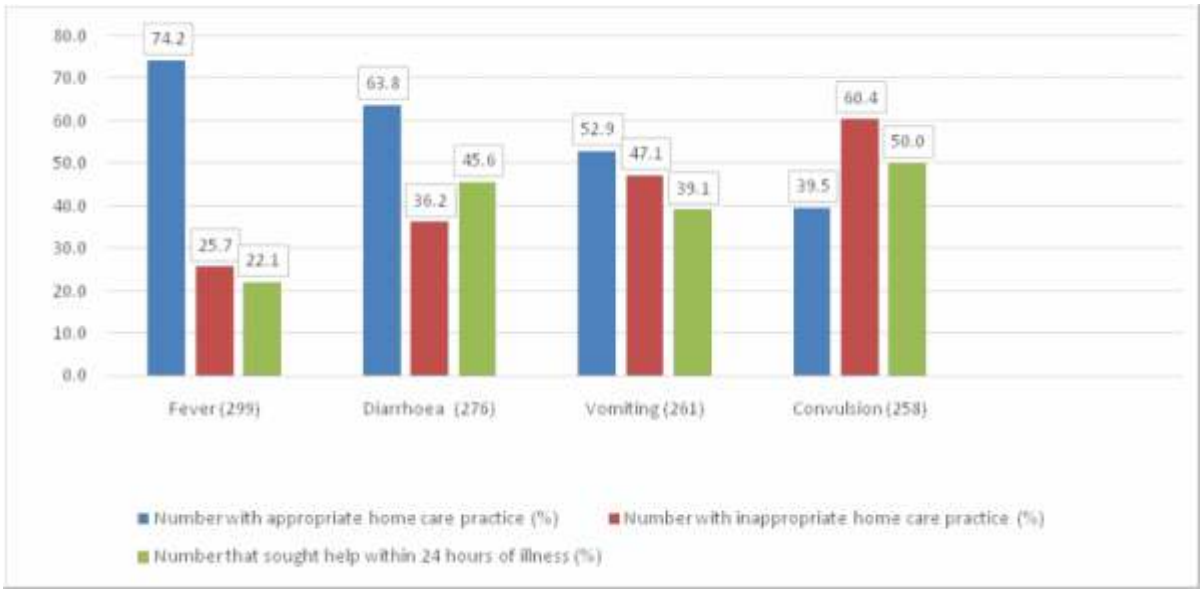

Figure 2: Home care practices adopted by mothers for common childhood illnesses

There was a significant association between respondents' level of education and attitude score ($p < 0.05$). Those respondents who were better educated had a more positive attitude. (Table 2)

Table 2: Association between respondents' attitude level to childhood illnesses and socio-demographic characteristics

	Attitude to childhood illness		p-value
	Negative	Positive	
Variables	**n=165**	**n=195**	
Age group (years)			
20-29	63(49.2)	65(50.8)	
30-39	84(48.0)	91(52.0)	0.06
40-49	18(31.6)	39(68.4)	
Marital status	155(46.4)	179(53.6)	
Married	3(100.0)	0(0.0)	0.05
Single	7(30.4)	16(69.6)	
Others			
Level of education	3(21.4)	11(78.6)	
None	12(34.3)	23(65.7)	<0.001*
Primary education	67(59.1)	107(61.5)	
Secondary education	78(59.1)	54(40.9)	
Tertiary education	5(100.0)	0(0.0)	
Others			
Number of children	28(49.1)	29(50.9)	
1	131(44.7)	162(55.3)	0.54
2-4	6(60.0)	4(40.0)	
>4			

*statistically significant

The respondents showed a high health-seeking behaviour with 335 (93%) of them indicating that they had taken their children to hospital in the past for either ill health or immunization. Of the 335 mothers who indicated they have had cause to seek health care when their children were ill, the majority sought care in a nearby health facility 243 (72.5%), others sought care in a chemist/ pharmacy shop 77 (23%), traditional healers 12 (3.6%) or a religious house 3 (0.9%). The major reasons given for seeking health care were as shown in Table 3.

Table 3: Respondents' reasons for seeking health care

**Reasons for seeking health-care (n=360)	Frequency (%)
When the child is not able to drink/breast feed	314 (94.7)
When the child becomes 'sicker'	338 (93.9)
When a child has difficulty in breathing	345 (95.8)
When a child stools blood	341 (94.7)
When a child is drinking poorly	308 (85.6)

**Multiple responses allowed

Discussion

This study looked at mothers' home care or pre-facility management practices in some common childhood illnesses and their attitudinal and health-seeking behaviours towards these illnesses. The study showed a large proportion of mothers carried out appropriate practices for most of the danger signs identified such as fever, diarrhoea and vomiting but inappropriate practices for convulsion. Considering that these are common symptoms even in severe illnesses in under-five children, the level of appropriate care exhibited was low. It was, however, in consonance with the findings in the systematic review by Geldstezer et al[21] that documented poor recognition of critical symptoms of severe illnesses and low utilization of oral rehydration therapy for diarrhoea in the studied populations.

Regarding the home care for fever in the present study, early treatment with bathing and tepid sponging of febrile children were the predominant at-home practice for febrile episodes in children, with paracetamol being the most administered pharmacologic drug. This was similar to the study in Egypt which also showed that early treatment of fever using the IMCI strategy leads to much better outcomes in treated children[22].

The home treatment for diarrhoea was similar to the practice reported in a study in Enugu that observed that over a third of mothers (71%) started some form of home management for diarrhoea before taking their children to the hospital for proper treatment[23]. Although in the Enugu study, the usage of appropriate treatment with ORS and SSS was poor, only 22.7% of mothers would use SSS for the management of diarrhoea at home while 9.9% used ORS. [24] The reason for this disparity in findings in Nigeria may be due to more accessibility of the ORS sachets and more awareness creation in Lagos, the availability of more health facilities in the state and government's policy of free health for children. This present study also noted mothers having inappropriate feeding practices during diarrhoea and vomiting, as many of the mothers would reduce or withhold feeding or offer other inappropriate food, although a high proportion of the mothers indicate they still breastfeed babies during diarrhoea episodes.

This may be a function of the exclusive breastfeeding promotion that is presently on-going in the country. Other studies from Nigeria also showed that mothers generally have inappropriate feeding practices during diarrhoea, as most mothers would reduce or withhold feeding[25]. The systematic review by Carter et al[26]reported that caregiver's diarrhoeal management practices stemmed from observations and advice from health workers and relatives. Withholding of food by mothers and failure to compensate for decreased food intake by increasing food during convalescence are major contributors to the adverse nutritional outcomes of diarrhoea[25].

The appropriate home management of convulsion was alarmingly poor as 60% of the respondents carry out inappropriate home practices ranging from praying, application of onions in the convulsing child's eyes and giving the child cow urine to drink. This was similar to the findings in another study that reported an increased proportion of inappropriate practices during convulsions. of which cow urine mixture had the highest proportion of all inappropriate actions[27]. The use of prayers alone by parents while a child is convulsing show how belief systems affect health care. Convulsion had been regarded to be caused by witchcraft, evil spirits that fly as birds in a study[28].

The overall attitude of mothers towards the critical signs of childhood illnesses was positive and encouraging. The respondents' attitudes were good and they sought appropriate care for most of the childhood illnesses. This is in keeping with the health belief model which shows that if symptoms are perceived as a threat (danger signs), individuals take action[29]. Marital status and level of education were significant factors associated with a positive attitude in this study. This may indicate that spousal support and encouragement enable the mother to take appropriate actions when necessary during a child's illness. Also, an educated mother is likely to be more knowledgeable to recognize, appropriately treat and prevent illnesses in children. Previous studies conducted by different groups showed that the mothers who had a low level of knowledge and attitude demonstrated poor practices[30].

Majority of the mothers in this study sought appropriate care (90%) and had taken their children to health care facilities in the past for either ill health or immunization. This increased appropriate healthcare-seeking behaviour can be attributed to increased maternal knowledge and educational level as well as the possible impact of the free healthcare delivery embarked upon by the Lagos State government for children under 15 years. In the study in India, mother's education and perceived severity of illness were some of the predictors of care-seeking behaviour. The study further reported that most of the mothers sought inappropriate care, taking their children to a pharmacy 46.2% compared to appropriate care in a health facility in 26.4%.[31] Our study, however, documented 72.5% of the respondents sought care in an appropriate health facility, contrary to some other studies in Nigeria, that observed poor health-seeking behaviours[32]. In a different study, it was observed that poor recognition of the symptoms by mothers, mother's educational level, as well as poor income, were all associated with poor health-seeking behaviour[32]. The high utilization of health facilities in the present study may be the result of government policy on free health care for children under the age of 15 years as well as the high educational levels by the respondents.

For there to be a successful reduction in childhood mortality there should not only be an availability of adequate health services with

well-trained health workers with effective management of childhood illnesses but also a partnership between families and health workers. A study from Nigeria had shown that caregivers who had knowledge and training on management of childhood illnesses, in the community integrated management program had better key home management practices compared with those who never had any. [9] Given the mothers' role in the home-based treatment, education programmes need to ensure that caregivers know about danger signs and what appropriate care to immediately give to an ill child before seeking further appropriate intervention in a health facility. Again, there is a need to improve on health education delivered to mothers in such a way as to cause a behavioural change in the community with re-enforcement of IMCI strategies to improve house-hold practices and care-seeking behaviours. All these will ultimately improve health and reduce mortality in the under-five children.

Conclusion

This study showed that over half of the mothers had appropriate home management practices concerning fever, diarrhoea and vomiting but had poor and inappropriate home management practices during convulsion in children with common childhood illnesses. There was also a positive attitude and good health-seeking behaviour for common childhood illnesses with the utilization of appropriate health care facilities by the mothers for further management of ill children.

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