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Medical Advances and Case Report

Vol. 9 (1), pp. 96 – 103, January, 2021

Predominant home administration procedures and result among moms of febrile youngsters in Eastern Nigeria

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Abstract

The magnitude of the consequences and the extent of problem associated with febrile illnesses in children have been shown to be associated to mothers' behaviour in treatment, decision making and prevention of childhood illnesses which are in turn influenced by social, cultural and intra-household relations. This study employed a cross-sectional survey design to assess the method employed by caregivers in the management of febrile conditions of their children in parts of Eastern Nigeria. About 100 women were sampled using multistage sampling techniques. Common actions taken by mothers and caregivers in the management of febrile include administration of home drug (32%), tepid sponging (4%), striping the baby naked (16%) and took baby/child to hospital (48%). Result from the study showed significant relationship between age of mother ($p<0.05$), educational attainment of mother ($p<0.05$), number of children ($p<0.05$) as well as occupation of mothers ($p<0.05$) and management action taken. Caregivers need to be properly aware of ill health conditions of their children and be properly equipped with prowess to manage them. There is also need for the governments through the primary health care system to improve their interaction with the grass root women and educate them more on integrated management of childhood illness.

Keywords: Children, febrile, management techniques, outcome, Eastern Nigeria.

INTRODUCTION

Febrile illness refers to a feverish condition which is usually associated with malaria, measles, neonatal tetanus, pneumonia, whooping cough (Feyisetan et al., 1997; Ewoigbokhan, 2000).

Traditionally, malaria has been regarded as the most common and important febrile illness in Sub-Saharan Africa (Greenwood et al., 2005). However, many of the physicians' diagnosis of febrile conditions in children also include pneumonia, diarrhoea, and other medical conditions such as otitis media, anaemia and acute eye problems (Madubuike, 1997; Osikoya and Sebanjo, 2008).

A study on the magnitude of the consequences and the extent of problems associated with febrile illnesses in children reported that more than 4.4 million children die every year in sub-Saharan Africa (Black et al., 2003) and most children die from fever at home without receiving adequate therapy. Only a small number of children with fever are treated at health-care facilities.

A number of elements are critical to management of the

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child with fever. The caregiver must recognize the illness and provide the appropriate supportive care. According to Chukwuocha (2011), diagnosis of malaria at home by caregivers was mostly by recognising symptoms such as constant fever, headache, coughing and pains, loss of appetite, etc.

An efficacious drug must be available either at home or nearby when the child becomes ill and the drug must be affordable for the caregiver. But these drugs are not readily available to the first calls of most caregivers (the Patent Medicine Dealers-PMDs) and even when available, they are usually of high cost (Chukwuocha et al., 2013). While some mothers in the community think that drugs provided in the community are very weak or of a lower quality, some believe that the drugs provided in the clinics and shops are better off, whereas others do not seek for drug treatment at all. This may be as a result of cultural or religious beliefs (Kidane and Morrow, 2000).

Earlier studies on home health care had pointed out that women assume the burden of the care for their children (Sims et al., 1992; Molyneux, 2002). And with issues surrounding pregnancy extremely viewed as women issues (Jhpiego, 2001; Nwakwuo and Oshonwoh, 2013), the health beliefs of these women can greatly influence the outcome of febrile illnesses in children such that action taken results in good or poor outcomes. Most mothers according to Nsungwa et al. (2007) become upset and aggressive in management of fever conditions, and these may be determined by their level of education, age of the mother, occupations, religion and other socio economic/cultural factors. However, the fact that some caregivers prefer handling the case at home before going to hospital for further treatment might be greatly influenced by their knowledge of necessary health management techniques.

Home treatment is a common practice among caregivers of under-five-year old children (Demming et al., 1999; Fawole and Onadeko, 2001; Olaogun, 2005). The finding of Ajibade (2013) affirms that caregivers of children play active role in the health care of these children. Thus, the challenge is to work on this natural tendency for self-treatment, as a means of ensuring early recognition of illness and ensure safe, prompt and appropriate action.

Further studies on home health care have also shown that behaviour in treatment, decision making and prevention of childhood illnesses are influenced by some factors such as social, cultural and intra-household relations (Feyisetan et al., 1997; Molyneux, 2002). This by implication indicates that the adequacy of care provided for the children is a reflection of capability of taking control of the difficulties associated with complexity and dynamism of these factors (Ajibade, 2013). This study intends to access the prevalent home management techniques and outcome among mothers of febrile children in Eastern Nigeria in relation to factors that influence the use of such techniques.

MATERIALS AND METHODS

This study employed a cross-sectional survey design to assess the methods employed by caregivers in the management of febrile conditions of their children.

Out of a total of 154 women of child bearing age permanently residing in Umuevu (resided in Umuevu in the 12 months), 100 respondents were selected. Using a multistage sampling technique, 3 villages that make up Umuevu in Eastern Nigeria were clustered and 100 women were randomly selected proportionate to the number of women of child bearing age in each cluster.

Questionnaire was used to seek information from mothers/ caregivers on their knowledge of signs and symptoms of ill health conditions among children, cultural dispositions and techniques and factors in their management.

The questionnaire was validated for both content and criterion by an expert and the reliability (0.78) of the questionnaire was assured through pilot study.

Data collected were collated and compiled into a spreadsheet. Raw data was analyzed using SPSS version 20 and tables and charts were presented. Fishers' exact and chi-square was used to provide inferential conclusion.

RESULTS

Table 1 shows the socio-demographic characteristic of the respondents. Greater percentages of the mothers are aged 18 to 30 years (48%), 31 to 42 years (42%) and 98% of them are of Christians background. About 54% of the respondents has attained a form of tertiary level of education with few (8%) having no formal education. The common occupations of the mothers are trading (38%) and civil service (46%) with few farmers (10%). Large number of the mothers in the study has one child (64%) with 26% having around 2 to 4 children. More febrile condition is reported for female children (54%) and is common around age 1 to 2 years (32%), 3 to 4 years (30%) and less than 1 year (20%).

Table 2 shows mothers' knowledge of the child's febrile condition. More febrile where noticed in prior four days to the study and most reported episode has occurred only but once (60%) with malaria remaining the common cause (64%), followed by pneumonia (28%). Although mothers and mother in-laws play greater role in the identification of febrile conditions (50%), husbands (22%) has been helpful with only 8% of conditions identified at the health care facility level by health workers.

Table 3 shows that 48% of mothers prefer taking children to hospitals, while 32% prefer to administer drugs at home. Greater percentage (50%) of actions taken by mothers is usually immediately a sign febrile is noticed with 40% taken in less than 24 h of the identify-cation of signs of febrile condition. Apparently, 88% of actions taken have resulted in improved health conditions and 43% intends to take children to the hospital in future occurrences, while 38% will prefer to give drug at home even if subsequent action is required.

From Table 4, mothers were shown to have identified febrile through loss of appetite 46 (24%), dullness 32 (16.7%), hand touching 30 (15.6%), shivery and

Table 1. Demographic characteristics.

Variable	Frequency	Percentage
Age of mother		
18 - 30 years	48	48.0
31 - 42 years	42	42.0
43 years and above	10	10.0
Religion		
Traditional Christian	80	80.0
Modern Christian	18	18.0
Traditionalist	2	2.0
Level of education of mother		
No formal education	8	8.0
Primary	6	6.0
Secondary	32	32.0
Tertiary	54	54.0
Occupation of mother		
Farming	10	10.0
Trading	38	38.0
Civil servant	46	46.0
Student	6	6.0
Number of children		
1 child	64	64.0
2 – 4 children	26	26.0
Above 4 children	10	10.0
Sex of febrile child		
Female	54	54.0
Male	46	46.0
Age of febrile child		
Less than 1 year	20	20.0
1 - 2 years	32	32.0
3 - 4 years	30	30.0
Above 4 years	18	18.0

restlessness 24 (12.5%).

Table 5 shows that 72 (35%) of causes of febrile are noticed by laboratory test, fever 54 (26.2%). Table 6 shows relationships between different variables and common actions taken by mothers and/or caregivers. A significant relationship was shown between age of mother and action taken (fishers exact, p=0.000) as younger mothers are more likely to administer drugs at home whereas elderly mothers tend to take their children to the hospital.

The relationship between educational attainment of mother and action taken (fishers exact, p=0.000) was also significant. Mothers with no formal education, primary and secondary educations are more likely to administer home drugs aside other actions, whereas mothers with advance education go for hospitals as their first action for febrile children.

Also from the same table, a significant relationship was shown between the number of children and action taken (fishers exact, p=0.000). Mothers with single child prefer to administer drugs at home, tepid sponge or stripe the baby naked compared to those with more children (2 and above) who prefer to use the hospital.

Occupation of mother and/or caregivers was also significantly (fishers exact, p=0.000) related to their different action or actions taken. Farmers and traders are more likely to administer drug at home with formers tepid sponging and striping babies more. Figure 1 shows that the relationship between mother's monthly income and actions taken (fishers exact, p=0.000) is significant. Mothers with high income are more likely to take their children to hospitals.

DISCUSSION

Parents and care providers have in several studies identified "fever" as a significant indicator of illness in children (Osikoya and Sebanjo, 2008; Poirier et al., 2000; Akpede, and Akenzua, 2001). A number of malaria-related symptoms particularly fever, shivering, chills, loss of appetite and headache were presented, which taken together may approximate a clinical diagnosis of malaria although using these symptoms, particularly fever, as a proxy for malaria appears to be neither sensitive nor specific when compared with parasitologically confirmed diagnosis (Font et al., 2001; Amexo et al., 2004). This implies that fever dictates the needs of treatment and what mothers do.

Traditionally, malaria has been regarded as the most common and important febrile illness in sub-Saharan Africa (Greenwood et al., 2005). This study indicates that 64% of reported febrile illnesses are due to malaria. Only 28% is due to pneumonia.

Most children die from fever at home without receiving adequate therapy and although the recognition of illness and provision of the appropriate dose of drugs, together with supportive care is a critical element in the management of febrile, access to health services and the quality of care administered at all levels of health care have been considered as the central determinants of health outcomes (WHO, 2000). The survival of children in developing countries depends on the family's and community's ability to access basic needs of life (Nnebue et al., 2010).

Some studies have shown that home treatment is a common practice among caregivers of under-five-year old children (Demming et al., 1999; Fawole and Onadeko, 2001; Olaogun et al., 2005; Nwankwo et al., 2009). Other studies on home health care pointed out that women assume the burden of the care (Sims et al., 1992; Molyneux et al., 2002). The perceived illness severity, maternal recognition of certain signs and symptoms of

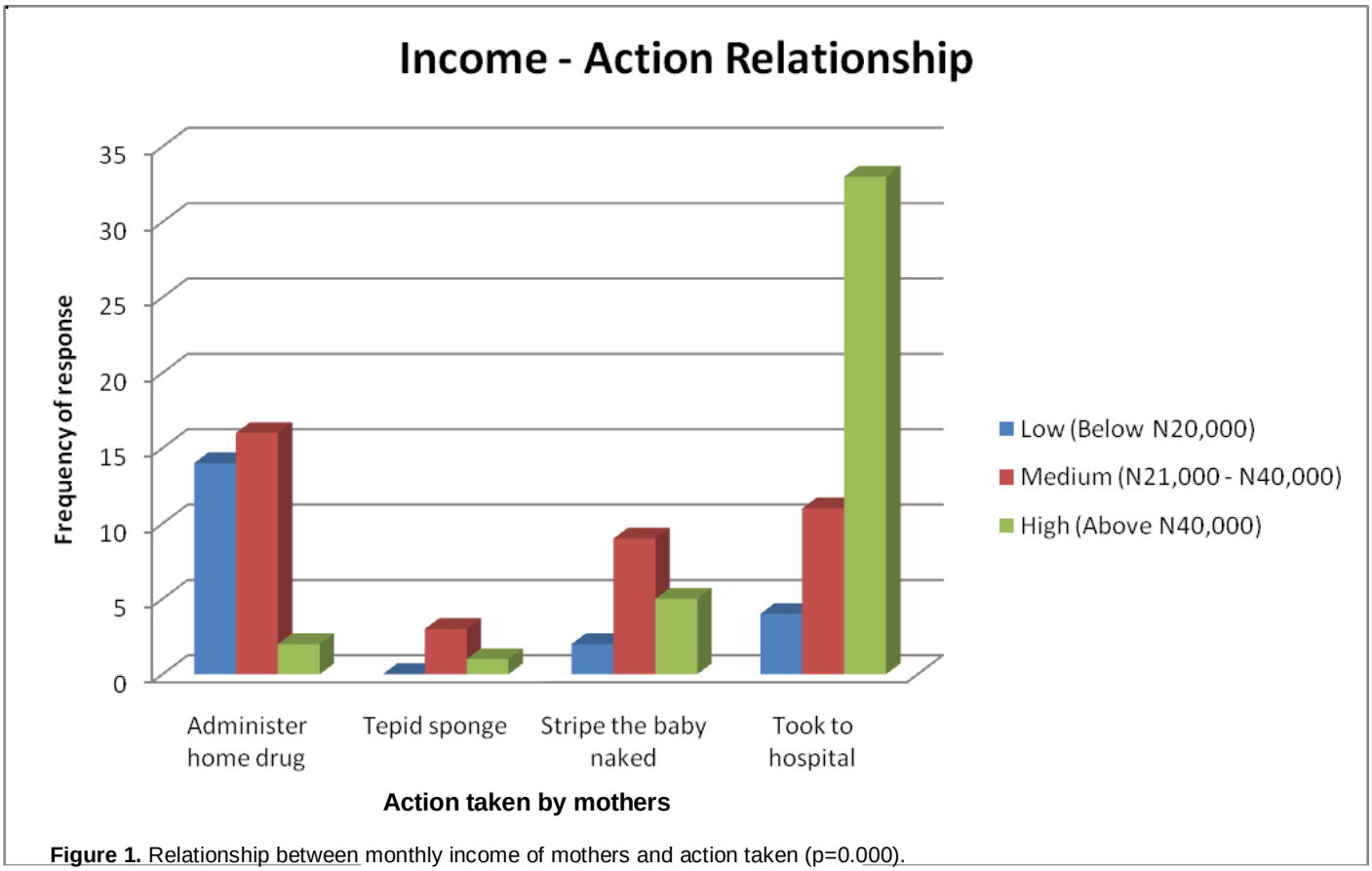

Figure 1. Relationship between monthly income of mothers and action taken (p=0.000).

Table 2. Mothers' knowledge of child's febrile condition.

Variable	Frequency	Percentage
When the child had febrile condition		
Last four days	30	30.0
Last one week	26	26.0
Last two weeks	20	20.0
Last one month	24	24.0
Frequency of episodes		
Just once	60	60.0
Two days interval	26	26.0
Three days interval	14	14.0
Cause of febrile condition		
Pneumonia	28	28.0
Malaria	64	64.0
Measles	8	8.0
Who noticed febrile condition if not mother		
Sister/sister in-law	8	8.0
Brother/Brother in-law	2	2.0
Mother/Mother in-law	50	50.0
Neighbour/friend	10	10.0
Husband	22	22.0
Health worker	8	8.0

Table 3. Mother's action during child's illness episode.

Variable	Frequency	Percentage
Action taken		
Administer home drugs	32	32.0
Tepid sponge	4	4.0
Striped the baby naked	16	16.0
Took to hospital	48	48.0
Time between sign and action taken		
Immediately	50	50.0
Action in less than 24 hours	40	40.0
Action more than 24 hours	10	10.0
Who informed action taken		
Sister/sister in-law	8	8.0
Brother/Brother in-law	2	2.0
Mother/Mother in-law	50	50.0
Neighbour/friend	10	10.0
Husband	22	22.0
Health worker	8	8.0
Confident of action		
Yes	84	84.0
No	10	10.0
Not sure	6	6.0
Result of action taken		
Condition improved	88	88.0
Condition remain the same	12	12.0
Action to be taken in future episodes		
Given drugs	38	38.0
Strip the body/baby naked	43	43.0
Take to hospital	19	19.0

of childhood illness were critical factors determining health care seeking behaviour.

Rural residence has been shown by several studies to have the highest risk factor for febrile illnesses in under fives (Yoder and Hornik 1996; D'Souza, 1999; Goldman and Heuveline, 2000; Amarasiri et al., 2001). Children of mothers in rural settings with lower levels of education are more likely to suffer from fever as compared to urban children with better educated women (Yoder and Hornik, 1996; D'Souza, 1999; Goldman and Heuveline, 2000; Amarasiri et al., 2001). But according to Olaogun et al. (2006), education was however insignificant at 5% level. This is in contrast with the report that educational status has a positive effect on the health status of the family (Nnebue et al., 2010). Another study has also reported a strong relationship between mothers' education and health seeking behaviour (Nigeria Demographic and Health Survey, 2003) and this is consistence with the significant relationship (fishers exact=111.493, $p<0.05$) shown in this study between educational attainment of mother and action taken.

A study by Olaogun et al. (2006) in Osun State Nigeria showed that mothers' age was negatively correlated with under-fives mothers' action. In contrary, (Nnebue, Ifeadike, Nworah and Duru (2010) showed that the older the mothers' are, the more likely they would not take action when their under-fives develop febrile illness. This is study shows a significant relationship between age of mother and action taken (fishers exact=107.066, $p<0.05$) with younger mothers are more likely to administer drugs at home whereas elderly mothers tend to take their children to the hospital.

Further studies on behaviours in treatment decisions making and prevention of childhood illnesses are influenced by some factors such as social, cultural and intra-household relations (Feyisetan et al., 1997; Molyneux et al., 2002).

Occupation in this study was shown to be significantly (fishers exact=112.014, $p<0.05$) related with management action taken by caregivers. This is consistent with a positive correlation with under-five mothers' action reported in a study in Osun State (Olaogun et al., 2006) and the assertion by Hobbs and Blanks (1975) that occupation plays a major role in shaping the life style of individuals. Hobbs and Blanks (1975) reported increased women's access to resources and strengthens their bargaining power within the household and the workplace. The women's access to resources and their bargaining power within the household have a significant influence on their treatment seeking behaviour for their children (Nigeria Demographic and Health Survey, 2004).

Income according to Olaogun et al. (2006) was insignificant at 5% level. This result is contrary to the result of this study which shows a significant relationship (fishers exact=39.562, $p<0.05$) between monthly income of mothers and their action on management of children febrile conditions.

The findings from this study showed that about 48% of respondents took febrile children with 50% of decision taking, immediately febrile condition is noticed and 40% within 24 h. This is contrary to the findings by Olaogun et al. (2005) who found that only one respondent in their study reported to the clinic within 24 h of the child been sick (Olaogun et al., 2005).

Fever was the mostly mentioned sign observed by mothers in their sick children which prompted them to take action aside result from the laboratory. This finding affirms the reports from various studies that fever is a good sign for mothers or parents to seek for treatment of childhood febrile illnesses (Poirier et al., 2000; Agbolosu et a., 1997). Findings of this study affirm the several reports of the high prevalence of home treatment for under-five year children with febrile illnesses (Olaogun et al., 2005; Audu and Ogala, 1997; Lubanga et al., 1997).

Table 4. Mother's perception and understanding of child's febrile condition.

Variable	Frequency	Percentage
***How febrile condition was noticed**		
Hand washing	30	30.0
Shivery	24	24.0
Uses of clinical thermometer	10	10.0
Restlessness	24	24.0
Loss of appetite	46	46.0
Dullness in movement	32	32.0
Joint/body pain	12	12.0
Rashes	4	4.0
Others	10	10.0

*Multiple responses

Table 5. Mothers knowledge of causes of febrile condition.

Variable	Frequency	Percentage
Causes of febrile conditions		
Fever	54	54.0
Laziness/dullness	26	26.0
Loss of appetite	32	32.0
Rashes	4	4.0
Convulsion	2	2.0
Joint/body pains	16	16.0
Laboratory test result	72	72.0

According to the reports of study carried out in Uganda, mothers gave modern drugs as action taken before coming to health facility. In Nigeria, reports showed that parents used more of herbs than modern drugs (Salako et al., 2001), but this study also indicates 32% administration of home drugs by caregivers. Tepid sponging and use of orthodox drugs are two common practices of home management and patent medicine dealers remains the main source of drugs. The practices of home management have to be exploited so that childhood febrile illnesses could be controlled through appropriate treatment (Ajibade, 2013). The children would be highly benefited from pre-packaged drugs, and mothers from integrated management of childhood illness education.

Conclusion

The magnitude of the consequences and the extent of problems associated with febrile illnesses in children is enormous (Black et al., 2003).

Caregivers must therefore be able to recognize the illness so as to provide the appropriate supportive care and access to health services, since the quality of care administered at all levels of health care have been considered as the central determinants of health outcomes (WHO, 2000).

Although this study shows a good relationship between ages, education, household size and occupation of mothers and the action taken on their children's health and the fact that greater percentage visits the hospital during febrile conditions. Younger mothers with low education are more likely to administer drugs at home or apply one prevention method or the other. Fever has been shown not to be the only way of recognizing febrile illness, but also loss of appetite, body pain and restlessness.

Further more, although greater actions taken by caregivers (mothers) resulted in improved health conditions, caregivers and mothers need to be properly aware of ill health conditions of their children and be properly equipped with prowess to manage them, because the adequacy of care knowledge for children will improve their capability of taking control of the difficulties associated with complexity and dynamism of factors influencing their decisions and improve integrated management of childhood illness.

LIMITATION OF STUDY

As most women of child bearing age in the community were not permanently residing in the village, it was difficult to reach more respondents or increase the sample

Table 6. Relationship between variables.

Parameter	Action taken				
	Administer home drugs	Tepid sponge	Striped the baby naked	Took to hospital	Total
Age of mother and action taken: p=0.000					
Age of mother					
18 – 30 years	32 (66.7)	4 (8.3)	12 (25.0)	0(0.0)	48 (100)
31 – 42 years	0(0.0)	0 (0.0)	4 (9.5)	38(90.5)	42 (100)
43 years and above	0(0.0)	0 (0.0)	0 (0.0)	10 (100)	10 (100)
Level of education of mother and action taken: p=0.000					
Level of education					
No formal education	8 (100)	0 (0.0)	0 (0.0)	0(0.0)	8 (100)
Primary	6 (100)	0 (0.0)	0 (0.0)	0(0.0)	6 (100)
Secondary	18 (56.3)	4 (12.5)	10 (31.3)	0(0.0)	32 (100)
Tertiary	0(0.0)	0 (0.0)	6 (11.1)	48(88.9)	54 (100)
Number of children and action taken: p=0.000					
Number of children					
1 child	32 (50)	4 (6.3)	16 (25)	12(18.8)	64 (100)
2 – 4 children	0(0.0)	0 (0.0)	0 (0.0)	26 (100)	26 (100)
Above 4 children	0(0.0)	0 (0.0)	0 (0.0)	10 (100)	10 (100)
Occupation and action taken: p=0.000					
Occupation					
Farming	10 (100)	0 (0.0)	0 (0.0)	0(0.0)	10 (100)
Trading	22 (57.9)	4 (10.5)	12 (31.6)	0(0.0)	38 (100)
Civil servant	0(0.0)	0 (0.0)	4 (8.7)	42(91.3)	46 (100)
Student	0(0.0)	0 (0.0)	0 (0.0)	6 (100)	6 (100)

size. Even the available women are either farmers or traders, thus difficult to reach except during antenatal clinics or vital clinic days.

Also, the difficulty of mothers and some women to recall any previous episode of febrile illness of their children and the fear to comment on their practices of self medication. There was also a low level of knowledge about integrated management of childhood illness.

RECOMMENDATIONS

Based on the findings of this study, the flowing recommendations have been proffered: the government through the primary health care sector has to improve their interaction with the grass root women and educate them more on integrated management childhood illness; provision of insecticide treated bed nets will also help reduce the prevalence of malaria among children especially the under five; emphasis should me made on seeking adequate health care for children to mothers during antenatal and postnatal care visits to health care workers especially to young and inexperience mothers; the health care providers, non governmental and support organization should also help mothers with requisite preventive emergency techniques for management of febrile conditions at home/community level; and access to health care facilities should be at a reasonable proximity.

Conflict of Interests

The author(s) have not declared any conflict of interests.

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