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A SURVEY OF HOME MANAGEMENT OF CHILDHOOD FEBRILE ILLNESSES IN RURAL COMMUNITIES OF GWOZA AND KONDUGA LOCAL GOVERNMENT AREAS OF BORNO STATE, NIGERIA

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ABSTRACT

Health Services are inaccessible to many children in Africa and many die from the high burden of malaria and febrile illnesses. However, WHO (2003) has encouraged treatment at home which was found to reduce the high level of morbidity and mortality when anti-malarial drugs in correct doses were used promptly on febrile children. Thus the aim of the study is to assess the home management of childhood febrile illnesses by care givers in some rural communities of Gwoza and Konduga Local Government Areas (LGAs) of Borno State. Between January 2006 and March 2006, four hundred questionnaires were distributed in Gwoza and Konduga LGAs each to care givers for study. The study revealed that mothers constitutes most of the care givers for children of under five years of age and the care givers were in the 20 to 29 age category with no formal education. Most of them (39.2 – 40.0 %) institute an intervention strategy immediately at the onset of fever. The most common strategy of alleviating fever was administration of drugs in both Gwoza (65.0 %) and in Konduga (79.0 %). Other methods included tapid sponging, covering with cloth, and administration of traditional herbal drugs. The drug commonly used to address this health problem was chloroquine syrup (Gwoza, 52.8 %; Konduga, 65.0 %), followed by paracetamol syrup. The study thus showed that the majority of under 5 years patients with febrile illnesses are under the direct care of their parents whom were mostly adults with no formal education. Immediate administration of chloroquine syrup was the major health care approach to febrile illnesses in the under 5 patients within the study population.

Keywords: Febrile illnesses, Ethnomedical survey, Intervention, Chloroquine

INTRODUCTION

Fever is a frequent medical sign that describes an increase in internal body temperature to levels above normal. Fever is most accurately characterized as a temporary elevation in the body's thermoregulatory set-point, usually by about

1–2 °C. Fever is a common symptom of many medical conditions such as:

1. Infectious disease, e.g. influenza, common cold, HIV, malaria, infectious mononucleosis, or gastroenteritis

2. Various skin inflammations, e.g. boils, pimples, acne, or abscess

3. Immunological diseases, e.g. lupus erythematosus, sarcoidosis, inflammatory bowel diseases

4. Tissue destruction, which can occur in hemolysis, surgery, infarction, crush syndrome, rhabdomyolysis, cerebral hemorrhage, etc.

5. Drug fever such as

- directly caused by the drug, e.g. lamictal, progesterone, or chemotherapeutics causing tumor necrosis

- as an adverse reaction to drugs, e.g. antibiotics or sulfa drugs.

- after drug discontinuation, e.g. heroin or fentanyl withdrawal

6. Cancers, most commonly renal cancer and leukemia and lymphomas

7. Metabolic disorders, e.g. gout or porphyria

8. Thrombo-embolic processes, e.g. pulmonary embolism or deep venous thrombosis

Persistent fever which cannot be explained after repeated routine clinical inquiries, is called fever of unknown origin (Behrman and Kliegman, 1990).

Children develop higher temperatures with activities like playing, but this is not fever because their set-point is normal. Mothers are mainly responsible for the care of the children in the home. When children fall ill, mothers are often the first to know and are burdened with the care of the sick child

(Fawole and Onadeko, 2001). Maternal response to childhood fevers varies and is influenced by socio-economic status, education, cultural factors as well as access to treatment resources. The various responses include tepid sponging, purchase of shop drugs, private clinic, government hospital, use of traditional herbs, cow urine, use of flame, scarification marks, covering with thick or thin clothing, increasing fluid intake etc (Fawole and Onadeko, 2001). Some of these predispose the children to further infections and worsening the condition. On the other hand, a simple packet of fast acting drugs made available for use by parents at home can rescue children before it is too late. This home care if well managed reduces the heavy mortality burden which occurs before reaching a health center. Thus, home care has been adopted by World Health Organisation (WHO) as a major strategy in developing countries (Fawole and Onadeko, 2001).

The following study is designed to decipher some of the facets of home care of fever in rural communities of Gwoza and Konduga LGAs of Borno State of Nigeria. Specifically, the study will focus on

- The ratio of group of individuals that constitutes 'care givers' among the guardians of the under five children.
- Assessment of demographic characteristics of such care givers.
- Study of care givers type of responses to febrile illnesses.

METHODOLOGY

Study Area

Two, out of the twenty seven Local Government Areas of Borno state were selected for the study based on geographical distribution; Gwoza from the South and Konduga from the Central geo-political regions of the State.

Gwoza Local Government Area is bounded by the following Local Government Areas; Bama in the north, Damboa in the west, Madagali (of Adamawa state) in the south and Cameroun republic in the east. The area is characterized by a range of mountains known as the Mandara Mountains which divides the southern part of the local government into multitude of planes and highlands to the east and west. The

climate is dry between November and April; with the hottest month being March and April (temperature range of 31° to 40° Centigrade). It is cold from November to February with the dusty harmattan period in December and January. The sandstorm come in April and extends into the early period of the wet season. The wet season begins in late April and last about five months with a rainfall of about 25 inches (9.367 cm) (WHO, 2003).

National Census Commission (1991) reported the population of Gwoza LGA was 191,354. At the time of this study, the local government has a projected population of 247,880.

Konduga Local Government Area has an estimated population of 120,000. It lies within the sahel savannah belt at latitude 11.1 North and longitude 13.5 East, covering an area of approximately 7,850 square kilometers. The Local Government Area shares boundaries with the following LGAs; Gwoza to the south, Mafa and Kaga to the north, Damboa to the South west, Bama to the east. With Konduga town as its headquarters, It is made up of three traditional districts, namely; Auno, Malari, and Kawuri.

The hottest months are from March to June, the cold months of the Harmattan season from November to February. The rainy season lasts from June to October, with an average annual rainfall ranging from 60 – 95mm. Most of the year is dry, with a high temperature ranging from 30 – 40 C, with

low humidity. Health facilities include a General Hospital and Maternal and Child Healthcare centre in Konduga town, and 29 Health Clinics and 14 Dispensaries all over the LGA (WHO, 2003).

Study Design

The study was a cross-sectional descriptive one to assess the homecare of fever in children less than five years in Gwoza and Konduga LGAs of Borno state.

Method of sampling

A multistage sampling method was used for this study. Gwoza and Konduga LGAs are composed of three traditional districts each, with the former having 24 villages per district and the latter 15 -20 villages per district. Pieces of papers each bearing a name of a particular village was introduced into a dice box in such a fashion that each dice box represents a particular traditional district containing an equal number of papers as its villages. Two villages (papers) were randomly selected from each district (dice-box) after dicing, giving a total of 12 villages for the study. Proportional allocation of sample units was done to each village using the primary health care household numbering to estimate the population in each village. Selection of household for the administration of the questionnaire in each village was done systematically using a sampling interval of five. Sampling interval F was obtained using pre-existing primary health care numbering as the population N and the number of questionnaires n,

$$F = \frac{N}{n}$$

Using the systematic random sampling one of every five household, that is every fifth household is selected and interviewed via a

questionnaire. Respondents were chosen and interviewed in their homes.

From random sample taken $a=3$

The sample households selected were 3, 8, 13, 18, 23.....

Where a is the first household selected

Sample size

The sample size was estimated using the formula $n = \frac{z^2 p q}{d^2}$

d^2

Where; n = Minimum sample size required to detect a meaningful result

z = Standard normal deviation (a constant 1.96)

p = Prevalence of febrile illness in the area = 0.5 (For Gwoza and Konduga)

q = $1-p$,

d = desired precision = 0.05

$$\text{Hence } n = \frac{(1.96)^2 \times 0.5 \times (1 - 0.5)}{(0.05)^2} = 384$$

The calculated sample size n is 384 households. For precision, 400 subjects were used.

Sources of Data

A well structured, pre-tested and validated questionnaire, designed in simple language, administered to the caregivers of the children, was the primary source of the data. The questions were closed-ended for ease of administration and analysis. Information obtainable through the questionnaire included the biodata of the respondents and responses on the immediate home-care of fever by caregivers and information on how correctly antimalarial drugs were given to children with malaria.

Data Analysis

Descriptive statistical analysis was employed. The responses to the questions were analysed using Microsoft excel to obtain the frequency of the responses, and frequency tables were drawn up. From these, percentages were calculated as appropriate.

RESULTS

A total of 400 questionnaires per local government area, were administered to caregivers for the study.

Table 1: Demographic Characteristics of Caregivers (January – March 2006)

RELATIONSHIP OF CAREGIVER	GWOZA LGA NUMBER (PERCENTAGE)	KONDUGA LGA NUMBER (PERCENTAGE)
Mother	231 (57.8%)	256 (64.0%)
Father	97 (24.2%)	80 (20.0%)
Grand-parents	30 (7.5%)	22 (5.5%)
Uncle	26 (6.5%)	18 (4.5%)
Others	16 (5.0%)	24 (6.0%)
Total	400 (100%)	400 (100.0%)
AGE OF CAREGIVERS (YEARS)		
10-19	29 (7.3%)	40 (10.0%)
20-29	139 (34.8%)	206 (51.5%)
30-39	131 (32.7%)	104 (26.0%)
>40	101 (25.2%)	50 (12.5%)
Total	400 (100%)	400 (100.0%)
AGE OF CHILD (YEARS)		
<1	50 (12.5%)	58 (14.5%)
1-2	97 (24.2%)	76 (19.0%)
3-4	121 (30.2%)	146 (36.5%)
5	132 (33.0%)	120 (30.0%)
Total	400 (100%)	400 (100.0%)
RELIGION		
Christianity	105 (26.2%)	62 (15.5%)
Islam	292 (73.0%)	336 (84.0%)
Traditional	3 (0.8%)	2 (0.5%)
Total	400 (100%)	400 (100.0%)
MARITAL STATUS		
Single	12 (3.0%)	8 (2.0%)
Married	369 (92.2%)	362 (90.5%)
Divorced	4 (1.0%)	12 (3.0%)
Separated	4 (1.0%)	8 (2.0%)
Widow	11 (2.8%)	10 (2.5%)
Total	400 (100%)	400 (100.0%)

Table 2: Occupation of Caregivers (January- March 2006)

Occupation of CareGivers	Gwoza LGA Number (Percentage)	Konduga LGA Number (Percentage)
House Wife	90 (22.5%)	221 (55.2%)
Farmers	206 (51.5%)	85 (21.3%)
Trading	80 (20%)	46 (11.5%)
Civil Servants	14 (3.5%)	36 (9.0%)
Others	10 (2.5%)	12 (3.0%)
Total	400 (100%)	400 (100.0%)

Table 3: Education of Caregivers (January- March 2006)

Educational Status of CareGivers	Gwoza LGA Number (Percentage)	Konduga LGA Number (Percentage)
No Formal Education	299 (74.8%)	325 (81.3%)
Primary Education	66 (16.5%)	48 (12.0%)
Secondary Education	30 (7.5%)	24 (6.0%)
Tertiary Education	5 (1.2%)	3 (0.75%)
Total	400 (100%)	400 (100.0%)

Table 4: Duration of Onset Of Fever Before Intervention (January- March 2006)

Duration	Gwoza LGA Number (Percentage)	Konduga LGA Number (Percentage)
Immediately	157 (39.2%)	160 (40.0 %)
Within a day	111 (27.8%)	130 (32.5%)
2 days	90 (22.5%)	95 (23.8%)
>2 days	42 (10.5%)	15 (3.8 %)
Total	400 (100%	400 (100.0%)

Table 5: Method of Alleviating Fever By Caregivers (January- March 2006)

Method	Gwoza LGA Number (Percentage)	Konduga LGA Number (Percentage)
Tepid sponging	74 (18.5%)	29 (7.2%)
Drugs	260 (65.0%)	316 (79.0%)
Cover with cloth	32 (8.0%)	20 (5.0%)
Others	34 (8.5%)	35 (8.8%)
Total	400 (100%)	400 (100.0%)

Table 6: Choice of Drugs for Childhood Fever By Caregivers (January- March 2006)

TYPE OF DRUGS	Gwoza LGA Number (Percentage)	Konduga LGA Number (Percentage)
Chloroquine	208 (52.0 %)	124 (31.0 %)
Paracetamol	152 (38.0%)	260 (65.0%)
Others	40 (10.0%)	16 (4.0%)
Total	400 (100%)	400 (100.0%)

DISCUSSIONS

Table 1 shows that mothers constitute the majority of care givers in the two rural communities of Gwoza (57.8%) and Konduga (64.0%) LGAs, followed by fathers. The majority of the care givers fall in the 20 -29 years age category in the two study population. An over whelming proportion of the care givers are in the 'double' family set up and are practicing Islam as a religion in the two study populations. The majority of the under five – patients are in the 5 years age category (33.0%) in Gwoza LGA, while the 3 -4 years category constituted the bulk (36.5%) in Konduga LGA.

The majority of the care givers in Gwoza LGA are farmers (51.5%), while house wives (55.2%) constituted the majority of the care givers in konduga LGA. The housewives have the advantage of recognizing fever early in their children and to properly

manage them at home, but most often, they need the consent of the husbands before they can take their children to a health centre. Therefore, empowering them through administration of in depth health education will go a long way in improving the prompt management of children at home. Recent trials of training mothers to provide presumptive treatment in the home had a considerable impact on childhood morbidity and mortality, giving strong support to the training of mothers in the community (WHO, 2004).

The fact that most of the care givers are farmers implies that the child might not get prompt attention at as when needed. According to Amadou *et al* (2001), mothers staying with their children, and living closer to health facilities were more likely to consult and to give chloroquine early than mothers living away from their children and away from a health facility.

Table 3 shows that the majority of the care givers have no any formal education in both Gwoza (74.8%) and Konduga (81.3%) LGAs. It is observed that in successful programmes, mothers, as their children's primary caregivers, were trained to recognize symptoms of malaria and give appropriate early and prompt treatment (WHO). The presence of at least background formal education tends to make the training easier and efficient. Also, it has been shown that children of uneducated mothers have a higher mortality rate. A strong commitment of female education, primary health care services within easy reach of every family and active community participation have a synergistic effect in reduction of childhood morbidity and mortality (Azubuike and Nkanginieme, 1999). The majority of care givers in Gwoza (39.2 %) and konduga (40.0 %) intervene immediately at the onset of fever (Table 4). Early treatment of illness is very important in the outcome of disease especially with development of complications (WHO, 1999). Duration of intervention has been found to be affected by both the level of basic formal education and accessibility to health centers.

Table 5 shows the various methods used in alleviating fever at home by caregivers. The majority of care givers in Gwoza (65.0 %) and konduga (79.0 %) resort to drugs in attempts to address childhood febrile illnesses. The drug commonly used drug to address this health problem (table 6) was chloroquine syrup in Gwoza (52.0 %), while in Konduga, the commonly used drug was paracetamol (65.0 %). This implies that a lot need to be done (especially in Konduga) towards training care givers on recognising early symptoms of malaria and taking immediate appropriate action.

CONCLUSION

The study showed that the majority of the under 5 patients with febrile illnesses are under the direct care of their parents whom

were mostly adults with no formal education. Immediate response to febrile illnesses is by administering chloroquine and paracetamol syrups as the major health care approach in the two study population.

RECOMMENDATIONS

1. The local Government should organise outreaches to teach care givers on the danger signs of febrile illnesses and the need for immediate medical attention, ensuring that severely ill children are appropriately treated.
2. The Local Government should collaborate with community leaders to enhance community participation and training on health care approaches to febrile illnesses.

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