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Study on Drugs Given to Children Under Five Years at Home Prior to Admission, their Sources and Presenting Symptoms at Amana District Hospital

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This study was conducted to explore on the medication mothers/caretakers gave to the under 5 years children before they are admitted at the hospital and to find out the treatment seeking behavior of their mothers/caretakers when they felt that the children were sick. The study took place in a conveniently selected district hospital, Amana hospital, in Ilala district, Dar es Salaam, Tanzania. The study involved a systematic sampling of 105 mothers/caretakers of children less than five years of age admitted at the hospital. The data was collected using a guided questionnaire then analyzed by Computer software Epi Info 97 version 6.04.

Fifty-nine (59) out of 105 under five children admitted at Amana Hospital were males and 46 were females. The age group between 1 and 15 months had the highest percentage (54.3%) of admission than all other age groups, while the age group between 31 to 45 months had the lowest (10.5%). Chloroquine (CQ) was the most frequently used drug (39.8%), followed by the paracetamol at (31.1%). Mothers/ caretakers used chloroquine and paracetamol at home at percentages of 83.3% and 91.5% respectively. The prevalence of those who used drugs before admission has been found to be 88.6%,(n=93). Fever was the major cause for admission (46.6%), followed by diarrhoea and cough (10.4% each), then vomiting (9.2%). Of the admitted children, (73.2%) were diagnosed clinically to have malaria, while 10.2% were found to have gastroenteritis and 9.4% were found to have pneumonia. The malaria prevalence decreased with age, but statistically insignificant. (p>.05). The disease was more prevalent among Males (55.9%) than their female counterparts, but with no significant differences (p> 0.05). The study further found that mothers/caretakers seek treatment for their children from retail pharmacies (47.3%) followed by shops (21.5%) and medical stores (17.2%).

In conclusion, the findings support other studies, which have shown that medication to underfives prior to consultation at health facilities is very common and it has to be inquired when taking history to avoid over dosage.

Key Words: Underfives, Mother/caretaker, Malaria, and treatment seeking behavior

INTRODUCTION

In most developing countries, children under five years of age have highest mortality [1]. In Tanzania most of the under fives suffer from common diseases such as malaria, diarrhoea, and upper respiratory tract infections. In this case, mothers/caretakers have to make decisions on their children's illness from these diseases more often. In order to timely treat an illness, a mother/caretaker must recognize when a child becomes ill. Fever is a defining indicator of illness. Mothers appear to be well aware when fever starts as well as its course and when it worsens or abates. It is known that up to 90% of children illnesses are perceived, defined, and treated at home by

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mothers/caretakers before being referred to other healthcare facilities [2]. The correct perception of the children's illness and prompt action by the mother/caretakers may be a lifesaving factor for some of these diseases. In some types of pneumonia, the condition of the child may deteriorate rapidly from the onset of rapid breathing to death within few days. For malaria, the mean duration between onset of symptoms and development of severe complications is 1.8 days and the mean duration between onset and death is 2.8 days [3].

The health-seeking behaviour of the mothers/caretakers is known to vary. In a household survey on the availability and use of antimalarials, it was reported that most malaria treatment in children occurs at home, and there was poor knowledge on the part of mothers/caretakers of the paediatric chloroquine dosage regimen. Thus they recommended a simplified dose regimen, particularly the paediatric formulation for the mothers/caretakers with limited education, to be developed [4]. Another study established that majority of mothers/caretakers were able to recognize non-severe and severe/complicated malaria in children with fever, and other physiological and behavioral symptoms associated with malaria. 86.6% of the mothers/caretakers were able to initiate proper treatment for the symptoms perceived [5]. A similar study [6] conducted at Kibaha revealed the same but in Uganda mothers associated the presence of fever with other types of illnesses but not malaria [5].

Mothers/caretakers also act differently for perceived illness for their children. Some treat their children with over-the-counter drugs (OTC) from retail outlet [7], others will treat their children at home using medication from health facilities [8] and left over drugs [4]. There are several important problems of self-treatment. One is lack of knowledge of the correct dose and the importance of completing the full course of medication. It has been pointed out that the factor associated with rising trends in infant and child mortality rate in developing countries is the delay in seeking medical care for children with fever promptly [9].

A study which assessed the home care of malaria-infected children less than five years of age in Guinea found out that mothers often failed to identify fever in their children and therefore failed to consult or to provide antimalarial treatment. The study concluded that without great effort to improve home care; it is unlikely that the morbidity and mortality due to malaria in young children will be greatly reduced [10]. Similar study in Mali had recommended policy to be adjusted according to reality [11].

In Zambia, studies found that mothers/caretakers recognize fever and treat it using chloroquine in conjunction with antipyretics promptly [12]. A problem, found, was that the children were not given correct dosage regimen. Another study conducted in Ghana to compare the accuracy of presumptive diagnosis of malaria in children aged 1-9 years performed by mothers/caretakers of the children to that of health center staff. The findings showed that the mothers/caretakers responded to the symptoms at home the same day when they occurred, while the symptoms were reported to the health center after 3 days. Thus it was recommended that an early and an appropriate treatment of malaria in children by caretakers might prevent complications resulting from malaria attack [13].

In assessing treatment-seeking behaviour in Tayabas, Quezon in Philippines, a study found that signs and symptoms of malaria were important in directing individual diagnosis, treatment seeking and therapy [14]. Household therapy with antimalarials, and more commonly antipyretics and herbs, were used before seeking care from either the formal or informal health care sector. Care outside the home was sought when symptoms continued and/or worsened, with an average period of time from onset of symptoms to presentation to a clinic, being six days. Accessibility to clinics was not a problem in the study area and hence the primary reason for delay was the tendency to self-treat first and to discontinue medication without finishing the course when feeling better. These factors were found to affect the control of malaria [14].

One possible strategy of reducing morbidity and mortality of children from these diseases is to improve the knowledge of mothers/caretakers on

the prompt recognition of symptoms and administration of appropriate treatment. This study intends to find out the medication mothers or caretakers give to children under five years of age before admission to hospital.

METHODOLOGY

Study design

This was a prospective Hospital based study carried out at Ilala district, one of the 3 districts in Dar es Salaam region, Tanzania. Ilala district is served by one district hospital, the Amana hospital. All mothers/caretakers with under five years children admitted at Amana hospital's paediatric ward from urban and rural area with history of fever were interviewed using guided questionnaires. Other information were collected from the child's ward record file at the time of admission, indicating the age, weight and body temperature. The mother/caretakers gave an informed and written consent to participate in the study. The study was conducted between November 2000 and March 2001.

Sample size

During the study 105 children were randomly selected from the number admitted in Amana hospital and questionnaires filled.

Pilot study

A pilot study was done to check the reliability and accuracy of the research tool in answering the objectives, to check on the approach to the study population, and to measure how much time would be required for the whole data collection. Adjustments on the area where the tool proved inadequate were made. 10% of the computed sample size was involved in the pilot study.

Data analysis

All filled questionnaires were assigned serial numbers and the variables to be measured were coded. Data entry, cleaning process and analysis were achieved using a Database and a statistical Epi Info 97 version 6.04 software [15].

RESULTS

Table 1 show that out of 105 under five years children admitted at Amana Hospital, 59 were males (56.2%) and 46 were females (43.8%). The age group between 1 and 15 months had the highest percentage of admission (54.3%), while the age group between 31 and 45 months of age had the lowest (10.5%).

Table 1: Dermographic characteristics of the study population(n=105)

Age group (months)	Sex			
	Males	Females	Total	%
1 – 15	30	27	57	54.3
16 – 30	12	10	22	20.9
31 – 45	7	4	11	10.5
46 – 60	10	5	15	14.3
Total	**59**	**46**	**105**	**100.0**

Table 2 shows the drugs used prior to admission of the under five children at Amana Hospital. 16 different drugs were administered. In most cases, more than one drug was given. Chloroquine (CQ) was the most frequently used drug (39.8%), followed by the Paracetamol at (31.7%).

Table 2: The drugs given to the underfives before admission to Amana hospital

Drugs Used	Frequency	Place of administration At home	at hospital	%
1. Chloroquine	60	53	7	39.8
2.Paracetamol	47	43	4	31.1
3. Aspirin	7	7	-	4.6
4. Benzylpenicillin	3	-	3	2.0
5.Septrin	10	9	1	6.6
6.Fansidar	1	1	-	0.7
7.Ampicillin	1	1	-	0.7
8.Oral rehydration salts	2	1	1	1.3
9.Quinine	3	1	2	2.0
10.Anti-TB	1	1	-	0.7
11Amoxycillin	4	4	-	2.6
12.Salbutamol	1	1	-	0.7
13.Valium	1	-	1	0.7
14.Cough Mixture	8	8	-	5.2
15. Folic acid	1	1	-	0.7
16.Iron preparation	1	-	1	0.7

Table 3: the sources of drugs for pre-admission treatment of the underfives (n = 93)

Sources of drugs	Frequency No:	%
1. Nearby Shop	20	21.5
2. Given by Friend	2	2.2
3. Left over at home	4	4.3
4. Pharmacy	44	47.3
5. Medical store	16	17.2
6. Hospital/dispensary	7	7.5

Table 3 shows that 47.3% of mothers/caretakers obtained drugs for their sick under fives from the pharmacies while 21.5% bought them from nearby shops and 17.2% from medical stores.

The most frequent reason for hospital admission. Table 4 was fever (46.6%), followed by Diarrhoea and Cough (10.4% each), and vomiting at 9.2% and loss of appetite (7.4%) (table 4).

Table 4: The reasons/symptoms leading to admission at Amana hospital. n =163)

The reason/symptom for admission	Frequency No	%
1. Fever	76	46.6
2. Diarrhoea	17	10.4
3. Vomiting	15	9.2
4. Abdominal pain	2	1.3
5. Body weakness	1	0.6
6. Cough	17	10.4
7. Other chest symptoms	3	1.8
8. Burn	2	1.3
9. Convulsion	10	6.1
10. Loss of appetite	12	7.4
11. Pale (Pallor)	7	4.3
12. Dysponea	1	0.6

Table 5:The diagnoses on admission (n=127)

Diagnoses at admission	Frequency No:	% total admission
1. Malaria	93	73.2
2. Gastroenteritis	13	10.2
3. Pneumonia	12	9.4
4. Upper Resp. Tract infections	3	2.4
5. Tuberculosis	1	0.8
6. Abscess	1	0.8
7. Pyrexia of unknown origin	4	3.2

Diagnosis on admission showed that some children were suffering from more than one condition. Malaria was one of the most frequent of the diagnosis (73.2%) followed by gastroenteritis (10.2%) and pneumonia (9.4%). (table 5)

Table 6: The prevalence of malaria among the admitted underfives by their age (groups)

Age groups In months)	Malaria		Total No
	Yes	No	
1 – 15	48	9	57
1 – 30	20	2	22
31 – 45	10	1	11
46 – 60	15	-	15
Total	**93**	**12**	**105**

Greater proportions of those with Malaria were in the age group 1 to 15 months (51.6%) There was decrease with increase in age, though this was not statistically significant. ($p>0.05$) (Table 6)

It was found that malaria was more prevalent among Males (55.9%) than their female counterparts.

DISCUSSION

This study involved 105 under five children admitted at pediatric ward Amana district hospital, in Ilala district, Dar es Salaam. The study found that out of 105 under five children, 59 were males and 46 were females. The age group between 1 and 15 months had the highest admission rate. This can be explained by the fact that this age is known to be most vulnerable to infections due to the underdevelopment of the immune system. This immunity strength tend to increase with age, which may explain why the older children had fewer admission rates.

Majority of the interviewed mothers/caretakers (88.6%) admitted to have given drugs to their children before admission; a higher percentage than that found by similar study [16]. It was not established in this study, what those who did not use any drug at home, did to their children as a first aid and treatment. Similar results have been reported elsewhere [17] and are probable that they consulted a healthy facility but did not remember during the interview.

It was also found that more than 14 different types of drugs were used before admission in treating the various conditions identified by mothers/caretakers (Table 2). Chloroquine and paracetamol were mostly used at home to treat what was perceived as malaria by the mothers/caretakers of these children. Similar findings have been reported in Ghana, where it was found that treatment given by mothers/caretakers, to their sick children was chloroquine and paracetamol [18]. In this study similar treatment has been shown to be given to the ill children at home and used paracetamol more than aspirin as analgesics. This is an indication that mothers/caretakers understand the MOH treatment guidelines pertaining to aspirin.

In this study, apart from chloroquine, the use of other antimalarial drugs was very low, with quinine at 2% (given at hospital), and fansidar at 0.7%. This could probably be related to cost or affordability or not sure of how to use them. Several antibiotics have also been used like septrin (6.6%) and amoxycillin (2.6%). This may be explained by the presence of other conditions, also presenting with fever. From the results, the commonest symptom necessitating mothers/caretakers to rush their under-five years to a health facility was; fever (46.6%), diarrhoea and cough (10.4% each), vomiting (9.2%), and loss of appetite (7.4%). While the admission diagnoses were malaria (73.2%) gastro-enteritis (10.2%), pneumonia (9.4%), and upper respiratory tract infections (UTI) (2.4%). All these conditions present with fever.

The study also has revealed that pharmacies were the major drug source for home treatment (47.3%), followed by nearby shops (21.5%) and medical stores (17.2%). The same observation has been noted by others [17] in a study conducted in Kenya in which 60% of cases were treated with medicines

purchased from local shops. Reasons for higher pharmacy consultancy rates may be explained by the fact that, the pharmacies in Dar es Salaam are numerous and are located in the residential areas where the people live.

CONCLUSION

The study has found that febrile illness was common among the under-five years with majority of the cases being malaria. Chloroquine and paracetamol were used for the treatment of fever at home before taking their children to a modern health facility. These drugs were obtained mostly from pharmacies and nearby retail shops. Most of the mothers/caretakers took their children to a hospital when their efforts failed. At the hospital, most children admitted with fever were diagnosed as having malaria, gastro-enteritis and pneumonia. It can be concluded that community interviewed here is well conversant with the symptoms of malaria and offer the correct treatment. Their experience was similar to that of the medical team at the hospital. Therefore community should only be educated to inform the medical personnel the drugs taken at home prior admission.

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