

# Common childhood symptoms and rural home-treatment practices

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## Abstract

**Introduction:** At home, mothers are usually the first to identify symptoms in their children and initiate treatment but there is paucity of information on these initial steps taken by these mothers. The objective of the study is to examine how mothers treat common childhood symptoms at home before presentation in the hospital.

**Methods:** A hospital-based cross-sectional study along with a structured interviewer-administered questionnaire was used for data collection from 307 consecutive mothers. Data obtained included their children's presenting symptoms, drugs administered, dosage regimen, source of the drugs, person who prescribed the drugs and storage of drugs. The axillary temperature of all the children were measured, using a mercury thermometer with the arm held firmly to the body.

**Results:** Fever either alone or in association with other symptoms was the commonest (75.6%) presenting symptom. Among the 232 children reported as feverish by their mothers, 119 (51.3%) had normal body temperature ( $<37.5^{\circ}\text{C}$ ) while the remaining 113 (48.7%) had elevated axillary temperature equal or greater than  $37.5^{\circ}\text{C}$ . Analgesics, antimalarials and antibiotics were the three leading classes of drugs administered by the mothers, together accounting for 62.3% of all drugs. Antimalarials was the class of drug whose dosage regimen was most frequently incorrect, being correct in only 21.4% of cases. Mothers and patent medicine dealers accounted for 67.4% of all the prescriptions. The principal source of drugs was the patent medicine stores (62.2%). Of the 307 mothers, 64 (20.8%) administered left over drugs prescribed for a previous ailment. These drugs were stored mostly in closed cupboards and drawers (67.2% of cases) for a period of three to eight weeks (mean  $5.2 \pm 0.8$  weeks). The mothers had difficulty in correctly identifying fever with 51.3% of cases reported as feverish by their mothers having normal axillary temperature.

**Conclusions:** The present home-treatment practices by mothers regarding their children's symptoms is greatly deficient. Intervention aimed at improving the situation should include teaching mothers how to give oral drugs correctly, treat local infections, feed and give fluids during illnesses as well as ways of recognizing signs indicating immediate return to the health facility. Training of patent medicine dealers on the basics of drug action is also essential.

**Keywords:** Childhood symptoms, fever, home treatment, mother's action.

## Introduction

In general, it is the mothers rather than the fathers who first identify symptoms in their children and, subsequently, initiate some treatment, whether appropriate or inappropriate. Knowledge of these initial actions taken by the mother is important in that it can influence the duration, severity and eventual outcome of the particular illness. However, there is paucity of data on these initial steps taken by these mothers.<sup>1</sup>

One of the ways by which mothers respond to their children's symptoms is procurement and administration of drug(s) in the hope that it will alleviate their symptoms. Studies in Nigeria have shown that self-medication is common. For instance, a community survey by Enato et al<sup>2</sup> in Nigeria, revealed that 82.0% of individuals obtained treatment for their ailment from informal health-care outlets such as patent and propriety medicine dealers/drug hawkers compared to 18.0% who received treatment from formal health-care facilities (Primary Health Centres and Hospitals). Similar finding has been reported from other African countries.<sup>3-6</sup>

Two potential problems associated with self-medication are inadequate- and over-dosing. Inadequate-dosing may lead to irrational drug use, and in the case of antimalarials/antibiotics, development of resistance by the organisms. On the other hand, over-dosing is associated with the risk of drug toxicity.

In Nigeria<sup>2,7,8</sup> and other African countries,<sup>3,9,10</sup> procurement of drugs by mothers is very easy since they are sold without restriction by Patent Medicine Dealers (called "Chemists") in shops and drug hawkers in markets, motor-parks, buses and even along the streets. This situation encourages the dangerous practice of self-medication in Nigeria. Ignorance and poverty are two factors known to play a role in preventing mothers from procuring the right medications in the correct quantities.<sup>1</sup> Lack of complete picture of pattern of home-treatment practices as regards common childhood symptoms in our society constitutes a gap in our knowledge.

This study, therefore, sought to examine the pattern of maternal procurement and administration of drugs to their children in response to common childhood symptoms prior to presentation in the hospital.

## Methods

This cross-sectional study was conducted at the out-patient clinic of St Philomena Catholic Hospital (SPCH), Benin

City from 1st May to 31st July, 2009. The study population were all mothers who brought their children to the hospital with a history of drug administration at home prior to presentation in the hospital.

A structured interviewer-administered questionnaire was used for data collection from the mothers. The interviewers were the medical officers on duty at the hospital. The author reviewed method of completion of the questionnaire with each of the medical officers. The questionnaire sought information on maternal age and educational status, the children's presenting symptoms, drugs administered and their dosages, source of prescription, place of acquisition of drug and duration of treatment at home. The weights of the children were documented.

The axillary temperature of all the children was taken for two minutes, using a mercury thermometer and with the arm held firmly to the body. All the children had a complete physical examination and any clinical problem detected was treated as deemed fit. Comparison between fever reported by mothers and axillary temperature obtained during physical examination was performed.

Statistical analysis involved calculation of means, percentages and confidence intervals.

## Results

Three hundred and seven consecutive mothers who met the inclusion criteria were recruited for the study following an informed consent. The maternal age ranged between 19-45 years with a mean of 28.3 ± 3.2 years as shown in Table 1, approximately four out of every ten mothers had secondary education.

**Table 1:** Educational status of the respondents (mothers).

| Educational status  | Number of Respondents | Percentage |
|---------------------|-----------------------|------------|
| No formal education | 12                    | 3.9        |
| Primary education   | 90                    | 29.3       |
| Secondary education | 135                   | 44.0       |
| Tertiary education  | 70                    | 22.8       |
| Total               | 307                   | 100        |

**Table 2:** Distribution of clinical symptoms

| Symptoms                               | Number of Patients | Percentage |
|----------------------------------------|--------------------|------------|
| Fever/Anorexia                         | 80                 | 26.1       |
| Fever                                  | 63                 | 20.5       |
| Fever/Cough/Catarrh                    | 43                 | 14.0       |
| Cough/Catarrh/Anorexia                 | 37                 | 12.0       |
| Vomiting/Weakness                      | 24                 | 7.8        |
| Fever/Vomiting/Diarrhoea               | 20                 | 6.5        |
| Fever/Cough/Catarrh/<br>Fast Breathing | 14                 | 4.6        |
| Fever/Convulsion                       | 12                 | 3.9        |
| Rash                                   | 7                  | 2.3        |
| Abdominal pain                         | 7                  | 2.3        |
| Total                                  | 307                | 100        |

Table 2 showed that fever either alone or in association with other symptoms was the commonest presenting symptoms. Of the 307 children, 113 (36.8%) had axillary temperature equal or greater than 37.5°C. Out of 232 children reported as feverish by their mothers, 119 (51.3%) had normal axillary temperature equal or greater than 37.5°C. Duration of treatment of symptoms at home before presentation in the hospital ranged from one to seven days with a mean of 3.1 + 0.7 days (95% CI = 2.9- 3.2).

**Table 3:** Pharmacological classification of prescribed drugs.

| Class of drug   | *Number of Patients | Percentage |
|-----------------|---------------------|------------|
| Analgesics      | 220                 | 71.7       |
| Antimalarials   | 112                 | 36.5       |
| Antibiotics     | 97                  | 31.6       |
| Vitamins        | 73                  | 23.8       |
| Haematinics     | 71                  | 23.1       |
| Antitussives    | 37                  | 12.1       |
| Antiemetics     | 13                  | 4.2        |
| Antidiarrhoeals | 12                  | 3.9        |
| Anthelmintics   | 9                   | 2.9        |
| Others          | 45                  | 14.7       |

\*Two or more classes of drugs were prescribed for some individual patients.

As depicted in Table 3, the three leading classes of drugs administered at home by mothers were analgesics, antimalarials and antibiotics, together accounting for 62.3% of all drugs. As shown in Table 4, antimalarials was the commonest class of drug whose dosage was incorrect (78.6% of cases). Correct dosage was administered only in 21.4% of cases (Table 3).

**Table 4:** Frequency of the correct dosage

| Class of drug* | Correct dosage No (%) | Incorrect No (%) |
|----------------|-----------------------|------------------|
| Analgesics     | n = 220 130 (59.1)    | 90 (40.9)        |
| Antimalarials  | n = 112 24 (21.4)     | 88 (78.6)        |
| Antibiotics    | n = 97 40 (41.3)      | 57 (58.8)        |
| Vitamins       | n = 73 65 (89.0)      | 8 (11.0)         |
| Haematinics    | n = 71 39 (54.9)      | 32 (45.1)        |
| Antitussives   | n = 37 21 (56.8)      | 16 (43.2)        |
| Antiemetics    | n = 13 3 (23.1)       | 10 (76.9)        |
| Anthelmintics  | n = 9 7 (77.8)        | 7 (22.2)         |

\* Current weight of patients were used in determining correctness (or otherwise) of dosage administered.

As shown in Table 5, the prescription pattern revealed that mothers and Patent Medicine Dealers together accounted for 84.4% of the prescriptions used for treatment at home.

**Table 5:** Source of prescription

| Source                           | Frequency | Percentage |
|----------------------------------|-----------|------------|
| Mother                           | 126       | 41.0       |
| Patent medicine dealer           | 81        | 26.4       |
| Doctor                           | 50        | 16.3       |
| Father                           | 21        | 6.9        |
| Nurse                            | 16        | 5.2        |
| Neighbours/Relatives/<br>Friends | 9         | 2.9        |
| Pharmacists                      | 4         | 1.3        |
| Total                            | 307       | 100        |

**Table 6:** Distribution on source of drugs

| Source                                  | Frequency | Percentage |
|-----------------------------------------|-----------|------------|
| Patent medicine store                   | 191       | 62.2       |
| Maternity home/<br>Health centre/Clinic | 48        | 15.7       |
| Hospital                                | 39        | 12.7       |
| Drug hawkers                            | 17        | 5.5        |
| Pharmacy store                          | 12        | 3.9        |
| Total                                   | 307       | 100        |

Table 6 showed that the principal source of drug was the patent medicine store (79.2%). Other sources of drugs are shown in rank order in Table 6. Of the 307 mothers, 64 (20.8%) administered left over drugs obtained for a previous ailment. These drugs were stored for a period of three to eight weeks (mean 5.2 $\pm$ 0.8 weeks) under poor conditions. The drugs were either stored in closed cupboards or drawers (67.2%), open shelves or on top of a table (22.4%) or tied in polythene bags (10.4%).

**Table 7:** Fever reported by mothers compared to measured axillary temperature

| Mother's complaints   | Children's axillary temperature (°C) | Total      |
|-----------------------|--------------------------------------|------------|
| n = 307               |                                      |            |
| <hr/>                 |                                      |            |
| <37.5 (fever absent)  | >37.5 (fever present)                |            |
| No (%)                | No (%)                               | No         |
| (%)                   | (%)                                  |            |
| <hr/>                 |                                      |            |
| Sick and feverish     | 119 (51.3)                           | 113 (48.7) |
| Sick but not feverish | 49 (65.3)                            | 26 (34.7)  |
|                       |                                      | 75 (24.4)  |

As depicted in Table 7, slightly over half of the mothers had difficulty identifying fever correctly.

## Discussion

Fever either alone or in combination with respiratory symptoms such as cough and catarrh was the commonest presenting symptom, accounting for the frequent use of analgesics, antimalarials and antibiotics observed in the present study. Similar observation was reported by

Ezechukwu et al<sup>8</sup> in their study in a private clinic in Nnewi, Nigeria. In a community survey in Jesse, Nigeria, these classes of drugs were also the most frequently encountered in the households studied.<sup>2</sup> This pattern of drug class usage suggests that the mothers assumed that fever was either due to malaria or infections.

Our data show that incorrect dosage was most frequent with antimalarials (78.6% of occasions). Other investigators have also reported high frequency of incorrect dosage with antimalarials<sup>4,7,8</sup> even in academic communities.<sup>11</sup> The potential consequences include prolonged suffering to patient, occurrence of complications, hospitalization and ultimately, increased cost of treatment. In Nigeria, several studies have shown that financial constraint is leading cause of discharge of hospitalized children against medical advice.<sup>12,13</sup> Furthermore, 20.8% of our mothers administered left over improperly stored drugs obtained for a previous ailment. Similar observation has been reported by other investigators<sup>2,7,10</sup> With regard to this practice, two potential problems are that the medicines are likely to lose their potencies and may even degrade into toxic products. Consumption of the toxic products may result in serious deleterious effects. For instance, outdated tetracycline capsules is known to cause Fanconi syndrome<sup>14</sup> Although medicines play a pivotal role in effective health care delivery, its curative properties depend largely on how they are used. They must be prescribed or purchased by informed or trained person, be appropriate for the complaints and be taken in the right dosage regimen at the right time.<sup>15</sup> In the present study, mothers and patent medicine dealers together accounted for majority (67.4%) of the "prescriptions" for home treatment. This observation is worrisome in that it reflects the great danger these children are exposed to from inappropriate treatment and possible drug toxicities from over-dosage, since both the mother and the patent medicine dealers are not trained to appreciate the contraindications and side-effects of the drugs they administer. The principal role of patent medicine dealers in our informal health-care outlets is further highlighted by the fact that 62.2% of our mothers obtained the drugs they administered to their children from patent medicine stores. Other African studies<sup>16-18</sup> have reported a similar trend. Some of these medicine stores are unauthorized to stock the drugs; a circumstance that makes sourcing of genuine drugs less likely, resulting in increased probability of these children receiving fake and adulterated drugs.

In this study, although fever was the most frequently reported symptom by mothers, a comparison of the history of fever and the measured axillary temperature suggested that the mothers have difficulty in correctly identifying fever. Other

investigators have reported a similar finding.<sup>19</sup> This is in contrast to a report from a Ghanaian study which indicated that fever was often correctly identified by mothers.<sup>20</sup> Two possible explanation for the discordance between mothers' observations and the measured axillary temperature found in this study are (i) the fever may have disappeared between the time it was detected by the mother at home and the time of measurement of the body temperature in the hospital; (ii) the fever may just have developed and so was not detected by the mother. This second possibility portends a serious danger for the child in that treatment and/or appropriate medical consultation will be delayed.

## Conclusions

There were great deficiencies in the care received at home by these children for their symptoms. Intervention strategies to address the situation should include training of Patent Medicine Dealers on the basics of drug actions and educating mothers on how to give oral drugs correctly, feed and give fluids to their children during illnesses, and treat local infections. This health education must emphasize to the mothers ways of recognizing danger signs that indicate that the child should return immediately to the health facility.

**Conflict of interest:** The authors declare that they have no conflict of interests.

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