



# The practice of self-medication for treatment of illnesses for under-five children by mothers in Ibadan, Nigeria

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## Abstract

The required ability of individuals to practise 'responsible self-medication' on minor ailments without medical practitioners' attention is demonstrably lacking among mothers of under-five children in Nigeria. There are few studies on mothers' practice of responsible self-medication in Nigeria. Thus, this study was carried out to investigate the practice of self-medication among 226 mothers of under-five children in Ibadan, Nigeria. Findings revealed that 53.4% mothers of under-five whose children fell sick two weeks before the survey applied self-medication as first action; 81.4% disclosed that they ever administered non-prescribed drugs for their children, 47.3% reportedly applied self-medication based on competence, while 19% were encouraged by family members to use non-prescribed drugs. Healthcare practitioners should involve household members in focused awareness on self-medication and its negative implications in order to encourage them to serve as change agents against the practice by mothers.

**Keywords:** Management of childhood illnesses, patent medicine vendor, self-medication, under-five children, Nigeria

## Introduction

Self-medication is undeniably a major global practice which influences individuals' behaviour while taking decision concerning their health. The universal practice of self-medication and irrational use of drugs as a major public health concern [1] among human population [2] drove the World Health Organization to recognize the phenomenon as a crucial part of public health care system [3] referred to as 'responsible self-medication' [4]. The concept of self-medication involves the use of medicine with curative intent but without professional advice [5-6]. It also depicts the act of obtaining and consuming drugs without the advice of a medical practitioner either for diagnosis, prescription or treatment of disease and illness [7]. Conversely, self-medication is a way to encourage individuals to look after minor ailments with simple and effective antidotes that have been adopted globally [8,9]. Hence, it is an integral part of self-care which can be considered as primary public health resource in the health care system. It includes self-medication, non-drug self-treatment, social support in illness, and first aid in everyday life [3].

Responsible self-medication, especially where treatment of family members such as children and elderly are involved, is tailored around the advice of pharmacists for any medicinal

products that are intended for self-medication [3,4]. This provides possibilities for some potential benefits in relation to health-related decision-making process, if applied correctly. Afolabi [10] observed how studies in the United States and Britain, for instance, had indicated that about 50-75% of treatment was through the practice of self-medication. Consumers' depth of knowledge on accurate recognition of symptoms, personal medical history and contraindications among others are variables needed for self-medication. However, inappropriate use of self-medication can increase 'drug-induced disease', death and waste of public funds, bacterial infection, hypersensitivity and drug withdrawal symptoms [3,11,12].

The growing trends of improper use of self-medication have been attributed to the wide spread availability of over-the-counter (OTC) drugs [13], urge of self-care, lack of functional health care services, poverty, ignorance, extensive advertisement of drugs, high fees at health facilities, availability of drugs in places other than drug shops and inadequate family support [14-16]. Misuse and abuse of prescribed drugs, errors of medication, combination of orthodox and herbal medicine, and use of non-prescribed drugs by mothers or caregivers may hamper children's health [17-19]. In order to attenuate the trends, the WHO asserts the dangers of antibiotics self-medication and reaf-

firmed that it has contributed to antibiotic resistance [20-22].

In a study of home management of childhood diseases, it was reported that about 48% of self-medication occurred among infants in Nigeria [4]. Abasiubong et al., [23] reported the practice of self-medication in Nigeria and specifically examine its potential risk and hazard among pregnant women in Uyo Nigeria. The health of under-five children is important not only to the parents but also to the entire members of the child's household [24]. The frequently treated illness with self-medication among infants in the country includes constipation, fever, cough and abdominal pain [25]. The increasing rate of pharmacy shops globally [26-28] enhances consumers' accessibility to medicine thereby creating options for its misuse due to self-medication [1] not only by mothers of under-five children but also among group of health workers and nursing students in Nigeria [29], practising physicians [30,31] and undergraduate medical students in India [1]. Mothers of under-five years children have been found playing numerous and vital roles in curative drug use and can be enticed to buy prescribed and non-prescribed drugs from different sources [32]. Despite the prevalence of this practice, there exist dearth of literature on the scope of self-medication phenomenon for under-five children in Nigeria. Hence, the practice of self-medication for treatment of illnesses for under-five children by mothers is what this study documents by examining the prevalence of illness among children of under-five years, the practice of and the factors that influence self-medication among mothers of under-five children, the perception of self-medication and attitude of the mothers towards self-medication in Nigeria.

## Methods

### Study area

This study was conducted in Ibadan, the capital of Oyo State, in South-Western Nigeria. Ibadan is made up of 11 local government areas (LGAs) with 2,550,593 population [33]. A more recent data from the National population commission (NPC) office in Ibadan put an estimated population of the city at 3,232,016 in 2014. Out of 11 LGAs in Ibadan, five are located within the metropolis while the remaining six LGAs are located at the outskirts of the city. Two LGAs in Ibadan metropolis— Ibadan North and Ibadan South-East were chosen for the study. Ibadan North LGA has the highest number of health facilities in the ancient city; the LGA has ten public primary health facilities, one public secondary facility and one tertiary health facility. There are also 115 registered private hospitals, clinics and maternity centres in the LGA (Buffett Centre, year n/a). Ibadan South-East LGA was chosen due to the fact that there are few major health centres in the area.

### Field procedures

The study adopted multi-stage sampling techniques. Out of twelve political wards each in Ibadan North and Ibadan South-East LGAs [34], six political wards were selected from

each of the two LGAs through systematic sampling method. Three wards were later selected from the six wards of each area. The political ward that fell as number two in Ibadan North and the ward that fell as number two in Ibadan South-East were selected as study areas. In all, two political wards were selected from the two LGAs which were later segregated into clusters to avoid double interviews. One hundred and twenty-five copies of questionnaire were administered in each of the political wards totaling two hundred and fifty in all. However, out of the 250 questionnaires administered, only 226 (90.4%) were returned and included in the analysis.

Two respondent inclusion criteria were used: being a mother who has an under-five child and willingness to participate in the study. Any mother who did not meet the criteria was not interviewed. The consent of potential respondents was sought and those who did not consent to participating in the study were politely exempted. Completed copies of the questionnaire were edited on a daily basis and were kept in a safe place. Data were coded and analyzed using the Statistical Package for Social Science (SPSS) software version 15. Variables and categories were generated in order to measure the relationship between variables of interest and data were analyzed using simple descriptive statistics. Responses to statement questions on the perceptions of mothers towards self-medication and their attitudes were rated as SA=Strongly Agreed, A=Agreed, In=Indifferent, D=Disagreed and SD=Strongly Disagreed. These responses were scored as SA=5, A=4, In=3, D=2 and SD=1 giving rise to  $5+4+3+2+1=15$  with mean score of 3. Hence a mean score above 3 points indicates that respondents agreed with the statement while a mean score below 3 shows a disagreement with the statement. The Remarks revealed the overall opinion of the respondents as either agreed or disagreed with their responses. This, by implication, means that the mean score of a statement that shows 3 and above is remarked as 'agreed' with the statement while conversely, the mean score below 3 is remarked as 'disagreed' with the statement.

## Results

### Socio-demographic characteristics of the respondents

In all, the respondents were 226 mothers of under-five children with a mean age of 30 (range 18-46 years). The monthly income of the mothers was found to be two thousand Naira (\$12.50) as minimum and five hundred thousand Naira (\$3,125) as maximum with an overall average income of twenty-eight thousand Naira (\$175). **Table 1** shows that majority (62.4%) of the respondents were Christian while 35% were Muslims. Most (43.8%) of the respondents had secondary school education as highest educational level attained. **Table 1** also shows that respondents with postsecondary educational status were 40.6% altogether. Only 11.1% of the respondents obtained primary school leaving certificate only. A large majority (94.7%) of the respondents reportedly married as the only wife to their husband, while others were reportedly married

**Table 1. Sociodemographic structure of the respondents.**

Sociodemographic	Frequency	Percent
Age (18-46)	226	100
<b>Religion</b>		
Christianity	141	62.4
Islam	79	35.0
Indigenous	1	0.4
No response	5	2.2
Total	226	--
<b>Educational status</b>		
Primary school	25	11.1
Secondary school	99	43.8
National Certificate in Education (NCE)	43	19.0
Ordinary National Diploma (OND)	17	7.5
Higher National Diploma (HND)	8	3.5
B.Sc	14	6.2
M.Ed	7	3.1
Ph.D	3	1.3
Others: Arabic, diploma	7	3.1
No response	3	1.3
Total	226	--
<b>Number of wives to a husband</b>		
1 wife	214	94.7
2 wives to a man	6	2.7
3 wives to a man	5	2.2
4 wives to a man	1	0.4
Total	226	--
<b>Position of respondent among co-wives to husband</b>		
1 <sup>st</sup> position	197	87.2
2 <sup>nd</sup> position	3	1.3
3 <sup>rd</sup> position	6	2.7
No response	20	8.8
Total	226	--
<b>Parity level</b>		
One child	60	26.5
Two children	66	29.2
Three children	58	25.7
Four children	30	13.3
Five children	8	3.5
Six children	3	1.3
Eight children	1	0.4
Total	226	--
<b>Age of children</b>		
0-11 months	54	23.8
12-23 months	49	21.7
24-35 months	41	18.1
36-47 months	59	26.1
48-59 months	23	10.2
Total	226	--

to a husband with two to four wives. The parity level of the respondents ranged between one (26.5%) and eight children (0.4%). Respondents with two children were 29.2%. **Table 1** shows that slightly above half (54.4%) of the mothers had children whose age ranged from 3 to five years while 23.8% mothers had children who were within one year old. In all, 53.4% mothers reportedly practised self-medication as an option to treat their children's illnesses in the previous two weeks before the survey.

### Prevalence of childhood illnesses

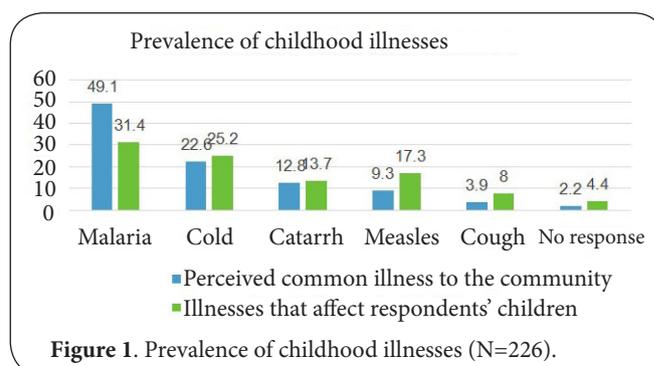
Almost half (49.1%) of the mothers indicated malaria fever as the most common childhood illness in their area of residence followed by cold (22.6%) while 9.3% indicated measles also as common. The scenario changed when the question also changed from general prevalence in the community to personal experience of illness. For instance, in the experience of mothers about their children as at time of the study, malaria (31.4%) was reportedly more common than measles (17.3%) just like the prevalence rate in the community though not as high as the community prevalence rate. However, cold, catarrh, measles and cough were reportedly higher at individual experience level than the community experience, as presented in **Figure 1**.

### Treatment behaviour of mothers

A large majority (81.4%) of the respondents reportedly administered non-prescribed drugs to their children. Slightly above a quarter (26.6%) of the respondents who administered non-prescribed drugs (n=184) reportedly used it to treat malaria. About half (48.9%) of them obtained their drugs from patent medicine vendors (PMVs) around their homes or from pharmacy stores (n=42.9%) and other sources as shown in **Table 2**. The main factors that prompted their choices were level of competence, availability and cost. Respondents' major decisions were influenced by advertisement (38.6%) and family members (19.0%) among others as shown in **Table 2**.

### Mothers' perception on self-medication

**Table 3** presents respondents' perception about self-medication. Analysis of responses to statement questions raised revealed



**Figure 1.** Prevalence of childhood illnesses (N=226).

**Table 2. Treatment behaviour of mothers.**

Administration of non-prescribed drugs (N=226)	Frequency	Percentage
Yes	184	81.4
No	38	16.8
No response	4	1.8
Types of sickness for administration of non-prescribed drugs (N=184)	Frequency	Percentage
Malaria	49	26.6
Body pain	35	19.0
Cold	41	18.1
Diarrhea	32	17.4
Catarrh	27	14.7
Preferred source of non-prescribed drugs (N=184)	Frequency	Percentage
Chemist stores	90	48.9
Pharmacy stores	79	42.9
Medicine hawkers	6	3.3
Others (drugs already had at home)	7	3.8
No response	2	1.1
Reasons for the preferred source (N=184)	Frequency	Percentage
Competence	107	47.3
Availability	64	28.3
Cost	25	11.1
Proximity	19	8.4
No response	11	4.9
Sources of influence on mothers who administered non-prescribed drugs (N=184)	Frequency	Percentage
Advertisement	71	38.6
Family members	35	19.0
Friends	19	10.3
No response	59	32.1

that respondents accepted (aggregate score of 3.1) the use of "leftover drugs for future sickness"; the mean score of 3.3 depicts that mothers aggregately used "old prescription" to get new drugs; and they abandoned "prescribed drugs once traces of recovery is noticeable" in the child. Also shown in **Table 3** is that respondents generally agreed (3.8) that "everybody practised self-medication".

**Table 3** also depicts that mothers were not opposed to the use of herbal medicine by pregnant women and children under the age of five. It also indicates that mothers care less about the source of drugs since "point of getting drug would not affect its purpose".

### Mothers' attitudes towards the practice of self-medication

Mothers' attitudes indicated a high level of the practice of self-medication and revealed that mothers prefer injection to drugs for treatment of illness at mean score of 3.0. However, mothers were opposed (1.9) to the preference of syrup drugs over coated drugs. The mean score of 3.1 in this study indicates that mothers believe that drugs prescribed by doctors do not always work for the purpose of the sickness. Hence, the respondents agreed (3.1) that mothers gave anything good to children irrespective of doctor's advice, and at the same time agreed (3.3) that it was better to give right medicine to children than to visit doctors every time. However, the respondents agreed (3.2) that all drugs would not work for all situations. **Table 4** also shows that mothers opined (3.2) that not every prescribed drug should be given to children due to serious adverse effects they could have. Respondents were opposed (2.0) to the use of a combination of orthodox and herbal drugs for treatment, as shown in **Table 4**.

### Discussion

This study has revealed that childrearing processes involve

**Table 3. Mothers' perception of the practice of self-medication (N=226).**

Statements of mothers' perception	SA	A	In	D	SD	Mean score	No response
When non-prescribed drugs failed to work, doctors' advice is not important.	17 (7.5)	95 (42.0)	6 (2.7)	59 (26.1)	41 (18.1)	2.9	8 (3.5)
Mothers consulted doctors for all drugs prescription.	24 (10.6)	78 (34.5)	6 (2.7)	58 (25.7)	54 (23.9)	2.8	6 (2.7)
Mothers used previous prescribed drugs when similar symptom reappeared.	34 (15.0)	131 (58.0)	10 (4.4)	21 (9.3)	22 (9.7)	3.6	8 (3.5)
Mothers used leftover drugs for future sickness.	37 (16.4)	84 (37.2)	13 (5.8)	41 (18.1)	44 (19.5)	3.1	7 (3.1)
Mothers used old prescription to get new drugs.	43 (19.0)	88 (38.9)	16 (7.1)	41 (18.1)	32 (14.2)	3.3	6 (2.7)
Mothers abandon prescribed drugs once a sign of recovery is shown.	31 (13.7)	89 (39.4)	13 (5.8)	67 (29.6)	25 (11.1)	3.2	1 (0.4)
Mothers collected, prepared and consumed herbal medicine.	36 (15.9)	86 (38.1)	26 (11.5)	36 (15.9)	39 (17.3)	3.1	3 (1.3)
Consumption of herbal medicine by pregnant women and children under-five is bad.	22 (9.7)	41 (18.1)	16 (7.1)	98 (43.4)	45 (19.9)	2.5	4 (1.8)
Everyone indulges in self-medication.	48 (21.2)	95 (42.0)	30 (13.3)	29 (12.8)	13 (5.8)	3.8	11 (4.9)
Point of getting drug would not affect its purpose.	15 (6.6)	39 (17.3)	30 (13.3)	81 (35.8)	50 (22.1)	2.5	11 (4.9)

SA: Strongly Agreed, A: Agreed, In: Indifferent, D: Disagreed and SD: Strongly Disagreed

**Table 4. Mothers' attitude towards the practice of self-medication (N=226).**

Statement on mothers' attitude on self-medication	SA	A	In	D	SD	Mean Score	No response
Mothers preferred injection to drugs during treatment.	32 (14.2)	57 (25.2)	39 (17.3)	67 (29.6)	27 (11.9)	3.0	4 (4.8)
Drugs prescribed by doctor do not always work.	20 (8.8)	90 (39.8)	24 (10.6)	67 (29.6)	19 (8.4)	3.1	6 (2.7)
Mothers preferred syrup drugs to coated drugs.	8 (3.5)	21 (9.3)	13 (5.8)	88 (38.9)	93 (41.2)	1.9	3 (1.9)
Mothers give anything good to children irrespective of doctor's advice.	20 (8.8)	106 (46.9)	10 (4.4)	46 (20.4)	41 (18.1)	3.1	3 (1.3)
Mothers giving right medicine to children is better than seeing the doctor every time.	26 (11.5)	121 (53.5)	7 (3.1)	42 (18.6)	27 (11.9)	3.3	3 (1.3)
All drugs would not work for all situations.	25 (11.1)	107 (47.3)	17 (7.5)	37 (16.4)	36 (15.9)	3.2	4 (1.7)
Not every prescribed drug should be given to children due to serious adverse effects.	18 (8.0)	82 (36.3)	19 (8.4)	69 (30.5)	35 (15.5)	3.2	3 (1.3)
Doctors could make mistake in the course of drugs prescription.	37 (16.4)	102 (45.1)	47 (20.8)	27 (11.9)	5 (2.2)	3.6	8 (3.5)
Mothers do not adhere to drug instruction on its leaflet.	37 (16.4)	102 (45.1)	47 (20.8)	27 (11.9)	5 (2.2)	3.6	8 (3.5)

SA: Strongly Agreed; A: Agreed; In:Indifferent; D: Disagreed and SD: Strongly Disagreed

contentious practices concerning care for childhood ailment and diseases. Self-medication has been documented a common practice to respond to childhood ailment among mothers of under-five children. The educational attainment of respondents in this study is not equitably high, as at least three of every five women interviewed did not have more than secondary education. Whereas education was described as a domain part of quality of life [35], it is also significantly associated with household wealth status [36,37]. Hence, it may invariably affect mothers' knowledge about responsible self-medication [4].

Self-medication is rampant (53.4%) among the studied population. This result conforms to other previous studies [7,14,38] that have also documented high rate of the practice of self-medication among urban children in Nigeria. Seven out of ten mothers in this study failed to consult doctor as first action when their children felt ill, due to reasons such as proximity to medicine stores, availability of non-prescribed drugs, competence or seeing patent medicine vendors (PMV) as major advisers on their illness, low cost or financial constraint and extensive drug advertisement as this study and other studies have confirmed [4,14-16,39-41].

This study shows that as much as advertisement serves good purpose in promotion of best drug use practice, it could also give impetus to self-medication. For instance, respondents in this study indicated that advertisement, among other factors, (38.6%) highly motivated them for self-medication practice. Burak and Damico [42] observed that increased advertising of pharmaceuticals poses a larger threat of self-medication to the population in general. Advertisement that delves on drugs should be conscious of purposeful instruction that discourages self-medication practice. More importantly, self-medication is being substituted for appropriate medical

consultation. This study shows that people use previously prescribed drugs when similar symptom reappears, and use old prescription to get new drugs. This raises concerns of incorrect self-diagnosis, drug interaction, and use of drugs for purposes other than originally prescribed [42]. Such practices could aggravate ill health conditions and more importantly have high tendencies for hampering home management of illness practice by mothers before reporting to hospitals [43-46]. One factor that cannot be underestimated is the influence of significant others. This study documents the existence of co-wives in about 5% of the respondents. Where there are more than one woman, the role of other women could be important in decisions on self-medication.

Advertisement of drugs should include discouragement of practice of self-medication. This should be enhanced by serious policy attention over drugs' advertisement. Focused health education should consider mothers as well as household members and PMVs for enlightenment on self-medication in Nigeria.

#### Competing interests

The authors declare that they have no competing interests.

#### Authors' contributions

Authors' contributions	KKS	OJA
Research concept and design	✓	✓
Collection and/or assembly of data	✓	✓
Data analysis and interpretation	✓	--
Writing the article	✓	--
Critical revision of the article	✓	✓
Final approval of article	✓	✓
Statistical analysis	✓	--

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