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Parental response to malaria and other diseases in children in South West region, Cameroon

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ABSTRACT

Children under five years of age are most vulnerable to diseases in Sub-Saharan Africa(SSA). Each minute, this group of children die of diseases which can be prevented using vaccinations or managed by prompt diagnosis and treatment. The lead diseases causing ravages in children in SSA are malaria, pneumonia, diarrhoea and HIV. Parents are responsible for the upkeep and health of children.The aim of this study was to identify the ways in which parents in Marumba 1, Marumba-2, Pete, Bai-Manya villages and Kumba town respond to malaria and other diseases their children have as well as the reasons behind their responses. Malaria was the most common disease that affected children in the study area. Other conditions such as fever, cough and catarrh were also common. Parents responded to children's diseases by seeking hospital treatment, by self-medication and by asking help from friends, family and neighbours and some did nothing. The process is not a static but dynamic as the responses may change from one illness to the other and from one episode to another. The results provide information of parental practices and indicate areas where improved education is required.

Keywords: malaria, parental response, children's diseases, Cameroon

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INTRODUCTION

Children under five years of age are most vulnerable to diseases. In sub-Saharan Africa, each minute, this group of children die of diseases which can be prevented using vaccinations or managed by prompt diagnosis and treatment[1]. The lead diseases causing ravages in children are malaria, pneumonia, diarrhoea and HIV[1]. Nutrition related diseases as well as these infectious disease (Malaria, HIV and diarrhoeal diseases) are common and of public health significance in Cameroon. National statistics show that 33% of children in the country suffer from chronic malnutrition and more than half of this number have the severe form of malnutrition. Malaria is still the number one cause or morbidity and mortality of children in Cameroon despite the preventive and therapeutic measures that can be practiced. Malaria caused by *Plasmodium falciparum* is the most rampant in Africa and in Cameroon as well and causes the most severe form of the disease. Paediatric fatal malaria occurs in the first two to three days from the first sign of symptoms.[2] This indicates the importance of prompt diagnosis and treatment. Many treatments for malaria and other diseases occur at home. It is imperative that this management be carried out properly to reduce the debilitating effects of diseases.

Parents are responsible for the upkeep and health of children[3]. They play a major role in ensuring that their children stay healthy. They decide on the kind of meals children have, the nutritional components of the food, the undertakings of their children, the material and emotional support to give to the children, all of these based on their own knowledge, perceptions and attitudes, their health-seeking engagements as well as the means at their disposal[3]. They make decisions on how their children's illnesses should be addressed. They decide on when

treatment should be done at home and when it should be taken to the hospital or traditional healer. The way in which they respond is based on many factors amongst which are the socio-cultural contexts in which they are found and the beliefs that come with that[4].

Some studies have looked into the different ways in which parents take care of the health of their children. These types of studies have rarely been done in Cameroon and even more rarely in the South west region. The reported methods used by parentsin the other studies include complementary and alternative medicine[5], naturopathic medicine[6], or treating their children at home, [7]. People's response to ill-health is influenced by cultural beliefs which determine how diseases are framed and understood and what kind of action is necessary. [8].The chances of children growing into adulthood depends on the care received from the parents[9]. The way parents respond to diseases of the children is crucial to the proper development of the child. Mothers are mostly the primary caregivers for their children[10, 11]. That notwithstanding in certain cultures they may require approval from their husbands/ partners before following up on a care route especially if the money has to come from that party[12].

The aim of this study was to identify the ways in which parents in Marumba 1, Marumba-2, Pete, Bai-Manya villages and Kumba town respond to malaria and other diseases which their children usually have as well as the reasons behind any response pattern.

MATERIALS AND METHODS

Settings: Ethical clearance was obtained from the Ethical Committee of the Institute for Medical Research and Medicinal Plant Studies(IMPM) of the Ministry of Scientific Research, Cameroon. Further authorisation was obtained from the Chiefs of each setting. Participants were explained the purpose of the study and an informed consent form was signed by those who agreed to take part. This study was carried out in Mbonge sub-division and Kumba in Meme Division in the month of May till July 2015.

Context and participants:
Respondents who were parents from four rural settlements (Pete, Marumba-1, Marumba-2, and Bai Manya) and one neighbourhood in Kumba town(4°38'N and 9°27'E) took part in this study. Marumba-2 is a junction village for the three other villages. It is bordered in the south by Marumba-1, in the west by Pete and in the north by Bai villages. Details about the village settings are published elsewhere[13]. The occupation of most people in these villages is farming. The crops that they grow are used for their daily subsistence and the excess is sold at village markets to augment income. Another source of income is cocoa which is farmed and sold to wholesalers who buy and re-sell to those doing further processing. Kumba, the capital of Meme division, is a town that is between 20 and 25km from these villages. There is regular interaction of the people in these villages and Kumba. This is because Kumba is a big commercial zone and so people in the villages go there for supplies which are not found within their own villages. Many people from other parts of Cameroon also live in Kumba.There are some Nigeriansliving there and who are involved in trade. This is because Kumba is not very far from border towns to Nigeria. The languages spoken in the study settings are English, Pidgin-English and some French (in Kumba). Also there are numerous indigenous languages spoken. The common language for communication is pidgin-English.

Design and data collection: This was a cross-sectional survey carried out in the South West region of Cameroon. All inhabitants of the villages and the neighbourhood in Kumba visited were eligible to participate in this study. Marumba-2 and Pete were divided into two parts with the help of the Chiefs and one part was selected randomly and all houses visited and asked to participate in the study. In Bai Manya and Marumba-1, all the houses were visited in the village with the help of a guide designated by the chief. In Kumba, for convenience one neighbourhood (Buea road) was selected and all houses visited and asked to participate.

Data was collected by using a questionnaire. The questionnaire for this part of the study was divided into four parts. The first part looked at socio-demographic characteristics. The second part looked at self-rated health of participants and children's rated health by parents. Self-rated health is a single question questionnaire which is important because it tells about the general condition of health as per the respondents and not based on laboratory examination. The third part looked at diseases which the children had had in the three months prior to the study while the last part delved into the responses of the parents to their children's diseases.

RESULTS

199 parents took part in this phase of the study. There were 97 males and 102 females. Most of the respondents were farmers in the villages. 55.8% of the participants had income less than twenty thousand francs(about $33) per

month. Most of the parents were married(66.7%) but there were also many who were single. Socio-demographic characteristics are shown on table 1.

Table 1: Socio-Demographic characteristics of participants

Variable	N	N%
Age		
< 25	30	15.1
25-34	65	32.7
35-44	47	23.6
45-54	34	17.1
>55	23	11.6
Occupation		
Unemployed	19	9.5
Farmer	99	49.7
Employed	18	9.0
Businessman	23	11.6
Housewives	19	9.5
Others	21	10.6
Educational Status		
No formal educations	13	6.5
Primary	86	43.2
Secondary	78	39.2
University	22	11.1
Marital status		
Married	132	66.7
Single	51	25.8
Separated or divorced	8	4.0
Other	7	3.5
Income(thousands)/month		
<20	101	55.8
21-50	65	35.9
51-75	13	7.2
>75	2	1.1

Self-rated health of participants:
Generally in the settings, participants rated their health as excellent (22.6%), good (44.2%), fair(20.1%0 and poor(13.1%). Self-rated health varied significantly across the different age groups (χ^2=57.038, df=12, p=0.000). None of the respondents above 55 years of age rated their health as excellent. 50% of the respondents above 55 years rated their health as poor. The youngest group (<25 years) rated their health mostly as good (68.3%). Good health was also reported by 44.2% (in the 25-34 range), 48% (in the 35-44 age range) and 34.3% (in the 45-54 age range).

Children's rated health by parents: After rating their own health, the respondents rated the health of their children. The rated health of children by the parents within the settings was mostly good or excellent (Table 2). Fewer parents rated their children's health as fair or poor. The highest rating of children's health as excellent was seen in Kumba (44%). 48.1% of parents in Kumba rated their children's health as good. In Pete parents mostly rated their children's health as good (77.2%).

Table 2: Parent's rating of their children's health

Children's -rated health by parents	Settings				
	Pete n(%)	Marumba 2 n(%)	Marumba 1 n(%)	Bai-Manya n(%)	Kumba n(%)
Excellent	9 (15.8)	3(8.3)	16(36.4)	10(28.6)	12(44.4)
Good	44(77.2)	18(50.0)	23(52.3)	19(54.3)	13(48.1)
Fair	1(1.8)	9 (25.0)	4 (9.1)	5(14.3)	1(3.7)
Poor	3 (5.3)	6 (16.7)	1(2.3)	1(2.9)	1(3.7)

Children's diseases recorded three months prior to the study.
When parents were asked what diseases their children had suffered three months prior to this study their responses showed that children had suffered mostly from malaria in Marumba-2, 58.8%; Bai-Manya, 76.5% and Kumba, 52.0%. In Marumba 1, cough (59.1%) was mostly reported while in Pete(56.9%) parents reported fever. In this study fever was separated from malaria and other diseases because some parents perceive fever as a disease on its own and not just a symptom of an underlying disease. Malaria was reported as the most common disease present in the study settings and also the disease from which most children reportedly had suffered from in the three months before the study.

Children's diseases three months before study are shown in table 3 .

Table 3: Children's reported diseases in the last three months prior to the study

Childrens diseases in the last three months	Settings				
	Pete n(%)	Marumba 2 n(%)	Marumba 1 n(%)	Bai-Manya n(%)	Kumba n(%)
Fever	33(56.9)	14(41.2)	18(40.9)	14(41.2)	10(40.0)
Catarrh	29(50.0)	11(32.4))	21(47.7)	16(47.1)	9(36.0)
cough	28(48.3)	11(32.4)	26(59.1)	16(47.1)	6(24.0)
Malaria	26(44.8)	20(58.8)	18(40.9)	26(76.5)	13(52.0)
Stomach aches	16(27.6)	5(14.7)	3(6.8)	5(14.7)	3(12.0)
Worm infection	13(22.4)	4(11.8)	3(6.8)	1(2.9)	2(8.0)
diarrhoea	8(13.8)	4(11.8)	5(11.4)	3(8.8)	1(4.0)
other	8(13.8)	1(2.9)	3(6.8)	2(5.9)	1(4.0)

Parents response to children's diseases:

This section specifically addresses parents responses to specific situations that have occurred in the last three months prior to the study. Parents whose children had suffered from one or more of the diseases in table 3 where asked how they handled the illness situation of their children. At least half of parents in all settings reported they went to see a doctor.

Table 4: Parents response to children's diseases in the last three months prior to the study

Settings	Doctor Yes (yes %)	Doctor No (no%)
Pete	31(52.5)	28(47.5)
Marumba 2	17(50)	17(50)
Marumba 1	30(66.7)	15(33.3)
Bai-Manya	23(67.6)	11(32.4)
Kumba	17(65.4)	9(34.6)

There was no significant difference in the settings in response to going to the doctor for children's illness in the last three months. P= 0.316.

Participants who answered that they did not go to the doctor when their children were ill at that time reported that they either practiced self-medication or did nothing. This response was significantly different between the settings (p>0.05). While in some settings all the parents practiced self-medication as an alternative to doctor care, in other settings a considerable percentage did nothing when their children were sick. In total, out of the participants who did not consult a doctor for their children's illness, 78.8% of them did self-medication while 21.3% did nothing. Details are found in table 5.

Table 5: Alternative response to children's illnesses

Settings	Doctor (no)	Self-medication	nothing
Pete	28(47.5)	16(57.1)	12(42.9)
Marumba 2	17(50)	13(76.5)	4(23.5)
Marumba 1	15(33.3)	15(100)	0(0)
Bai-Manya	11(32.4)	10(90.9)	1(9.1)
Kumba	9(34.6)	9(100)	0(0)

Type of help sought in case of children's illness: This section elaborates on what parents say they normally do in response to any disease affecting their children. Parents reported that as a general rule, apart from hospital response, and self-medication (in which they would treat the children themselves), another way in which they responded to children's illness was to ask for help from friends, family or neighbours. Such a response was seen in all the settings. Pete, 25%; Marumba 2, 31.7%; Marumba 1, 24.4%; Bai-Manya, 17.5%, and Kumba 10.3%.

In the specific case of malaria, parents were asked if they responded to malaria in adults in a similar way as when the patient was a child. Results showed that malaria is taken more seriously in children than in adults. In case of a child the parent or guardian is most likely to go to the hospital for formal health care intervention than if the adult himself was taken ill. The way parents responded to malaria in children did not vary across the settings while in the case of an adult there was a significant difference across the settings (p=0.022).

Reasons for hospitals: Given that all parents do not respond to their children's disease by taking them to the hospital, respondents were asked what reasons will motivate them to visit hospitals. Their responses did not vary

significantly across the settings. The most important reasons are presented in table 6. In the villages, having money was a major factor supporting hospital response. This was followed by the perceived severity of the disease. In Kumba, perceiving the disease as severe had a more important weight in the decision for hospital than having money or the type of disease.

Table 6 : Reasons for taking children to the hospital.

Settings	Reasons for taking children to hospital		
	Having money	Disease is severe	Type of disease
Pete	29(50)	15(25.9)	14(24.1)
Marumba 2	12(37.5)	12(37.5)	8(25.0)
Marumba 1	17(39.5)	17(39.5)	9(20.9)
Bai-Manya	16(42.1)	18(47.4)	4(10.5)
Kumba	8(27.6)	16(55.2)	5(17.2)

Obstacles against hospital care: When asked what would prevent parents from taking children to the hospital, they reported lack of money mostly(86.7% in Pete, 87.8% in Marumba-2, 68.9% in Marumba 1, 87.2% in Bai Manya and 73.7% in Kumba). Lack of perceived severity of disease was another element which would prevent hospital move. This was not as high a factor as lack of money. Pete, 5.0%; Marumba-2, 4.9%, Marumba 1, 17.8%; Bai-Manya, 0%, and Kumba, 5.3%. Other factors like fear, distance to health-care centre, quality of health care service, type of illness and availability of drugs at home were not considered highly as obstacles to seeking hospital care for their children.

Response to disease in time:
Most parents in the different settings reported that they would take their children to the hospital after self-medication fails. Table 7. Some parents however reported they would take their children to the hospital immediately they saw symptoms of disease. Others reported they would go to the hospital when the illness was severe or when pain was too much. Very few mentioned never responding to illness by seeking hospital treatment.

Table 7:Parents response to disease in time from onset of symptoms

Settings					
	immediately	After self-medication fails	When illness is severe	When pain is too much	never
Pete	7(11.7)	29(48.3)	11(18.3)	12(20)	1(1.7)
Marumba 2	7(17.1)	24(58.5)	7(17.1)	1(2.4)	2(4.9)
Marumba 1	12(26.7)	24(53.3)	5(11.1)	4(8.9)	0(0)
Bai-Manya	10(25.0)	21(52.5)	3(7.5)	3(7.5)	3(7.5)
Kumba	12(30.8)	21(53.8)	5(12.8)	1(2.6)	0(0)

DISCUSSION

The parents in this study rated their children's health better than their own health. As parents advanced in age, they rated their health even more poorly. This may be due to poor living conditions, diseases that come with old age and also poor access to good and proper medical facilities[14]. Parents serve as a proxy for rating their children's health because the children may not have the analytical capacity to do so themselves. In this study, parents rated their children's health better than they did their own. This could be because as primary caregivers, they take even more care of their children.

Fever, cough and catarrh(in combination) and malaria were reported as conditions which children had suffered from in the last 3 months. This is similar to what was found in Nnewi in Nigeria [10]. Fever was reported as the most common symptom seen by the parents. This could be because of the high perceived prevalence of malaria in the area. Also fever often accompanies cough and catarrh indicating presence of infection. Fever when reported accompanying other diseases had been reported to be a reason why some parents will not suspect malaria[15]. Malaria was also reported as a disease most children had had in the last three months prior to the study[16]. This could be due to poor living conditions, lack of knowledge of preventive strategies against malaria and non-adherence to preventive measures and treatment.

Parents response to diseases:
The responses of parents with regards to what happens when their children are sick did not vary significantly across the settings whether it was in the villages or in town and also irrespective of educational status or income. Other studies have reported the health of children being better with higher education of mothers, or higher income of the parents[3]. In this study however, even though the health status of children[13] is not up to what is found in areas where people have a better standard of living, education and income of parents did not play a significant role in the

decision of seeking medical response. The predominant reported action was seeing a doctor when the children were sick. This indicates that parents take more seriously diseases which affect their children than even diseases which affect them personally [9]. Most parents (>50%) reported going to the hospital as a response to their children's illness. This is different from a study in Uganda where only 37% mentioned going to a medical facility as a response to their children's illnesses[17]. That notwithstanding, not all parents did that and in the cases where the parents did not seek medical advice some practiced self-medication and others did nothing.

*Alternative responses to children's illness.*Many parents reported practicing self-medication in the settings. This implies they treated their children with medication without the prescription from a doctor. Self-medication also is seen in the taking of herbal remedies for curing diseases. Self-medication has been reported in many studies in Africa[18]. Distance from health centres have been seen to directly correlate with self-medication. This means that the further away health facilities are from people, the more they are likely to resort to self- medication[19]. Self-medication is embedded in the cultural beliefs and perceptions of people[4]. Self-medication practices involves counting on self,on one hand as well as on friends, family and neighbours for the otherhand. This could be because in small communities like villages, people tend to form a stronger cohesive bond than in cities. That way they look after each other and are readily available for advice and support. This is social cohesiveness which has been reported to have a role to play in the health of communities[20].

So basically, parents in the study area respond to their children's illness mostly by seeking hospital care. This shows that parents in all the settings respond quite similarly to illness of their children and differently to their own illnesses. In cases in they don't seek hospital care, they practice self-medication with input from family, friends and neighbours as well. These responses are dynamic and not static implying that responses change with individuals as well as with time.

Reasons which were forwarded as stumbling blocks to seeking hospital treatment were primarily lack of money. Lack of money as a reason for not going to the hospital has been reported previously also in Uganda[21] and Ghana[16]. The people the village settings are poor farmers without a stable income since their income depends on the sale of their crops and that also depends on the market. This gives reason again as to why the responses given cannot be static since it depends on various factors.

Parents response to children's illnesses depends of many factors which parents take into consideration before any action is engaged in. That the parents are concerned about the well-being of their children is not to be doubted, but they also have to be able to see that the disease merits the cost in terms of time and finances that a trip to the hospital will entail. Some parents reported that they would take their children to the hospital usually after self-medication fails. This is probably because at the onset of illness, these parents first take time to observe the gravity of the illness[22] and also because of the concern for their children it is probably hard for them to do nothing and so they use the medication they have at home to see if it will give relief. When this fails is when the next option is considered.

Limitations of the study. This study is cross-sectional providing only a snapshot of parents responses which have been shown to be dynamic. A longitudinal study may show better how parents respond at different episodes of children's illnesses given a more complete account of how it happens.

CONCLUSION

This study has confirmed that parents are more concerned about their children's diseases than about their own. They respond to the children's diseases in by seeking hospital care, self-medication and also using their social network of family, friends and neighbours. This is based on their knowledge, on their means and their beliefs. Proper education is therefore recommended to improve their knowledge of illness management strategies and by consequence improve the care they take of their children given that parents are the primary caregivers for their children.

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