

Mothers' management of childhood diseases in Yorubaland: the influence of cultural beliefs *

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Several studies have noted that, besides inadequate availability of health care services in many areas, especially the less developed countries, certain disease-specific and non-disease-specific cultural beliefs may influence people's health seeking behaviour¹. It has even been noted that health services may be underutilized and several health and child care instructions may be ineffective or ignored in traditional and transitional societies where people's ideas and behavioural patterns conflict with the knowledge being passed to them (Feyisetan and Adeokun 1992; Feyisetan 1992). Feyisetan and Adeokun (1992) argued that non-adoption of modern preventive and curative measures cannot be attributed to poverty alone since the costs of some preventive and curative measures are not exorbitant in several of these societies². Rather, they suggested that the gap between awareness of modern health measures and health seeking behaviour must be sought in the social and cultural determinants of behaviour in such matters as child care and disease management.

Earlier studies have noted that children in Nigeria die mainly from malaria, diarrhoea, measles, neonatal tetanus, whooping cough, tuberculosis, and bronchopneumonia (Morley and MacWilliam 1961; Ogunlesi 1961; Morley, Woodland and Martin 1963, 1966; Baxter-Grillo and Leshi 1964; Animashaun 1977; Tomkins 1981)³. Because these diseases are preventable at low cost to the individual, there is a need to investigate why large percentages of children are still subjected to many episodes of these diseases.

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¹ Three important dimensions of disease management have usually been noted: perceptions of aetiology; perceived, or adopted, preventive measures; and perceived, or adopted, curative measures. While it is expected that people's perceptions of disease aetiology and their choice of preventive or curative measures will be correlated, exposure to several health care instructions and ideas as well as socio-economic constraints may create a situation in which they are not (Feyisetan 1992).

² Until the introduction of the Structural Adjustment Programme in Nigeria, health services were mainly provided by the public sector at highly subsidized rates; thus the individual paid little or nothing for these services. However, with the introduction of the Structural Adjustment Programme, the costs of receiving treatment from the health facilities seem to have gone beyond the reach of many people with the result that health seeking behaviour of many people may have been altered.

³ The 1990 Nigeria Demographic and Health Survey also shows that many under-five children suffered from fever (32.6%), diarrhoea (17.9%), and acute respiratory infection (6.7%) in the two weeks preceding the survey.

In this paper, we examine (1) the mothers' perceptions of the aetiology of the three most cited childhood diseases in our study areas, measles, diarrhoea and fever, and the effect of these perceptions on the mothers' suggested curative measures; and (2) the persistence of the belief in *abiku*⁴ and how this cultural belief can influence mothers' management of childhood diseases. Since, for most mothers, perceptions of the aetiology of the childhood diseases are rooted in cultural beliefs, a brief review of disease-specific cultural beliefs is undertaken. In order to determine the effect of socio-economic factors, the mothers' perceptions of the aetiology of the childhood diseases, their recommended curative measures and the belief in *abiku* are examined according to selected socio-economic variables⁵.

Cultural beliefs and management of childhood diseases

Two aspects of disease management are examined: perceptions of causation and the types of curative measures that are perceived as adequate by mothers when children have episodes of the three childhood diseases.

Several authors have emphasized the need to consider the cultural beliefs and practices of people when designing measures and programs aimed at improving their health (Suchman 1983; Ubomba-Jaswa 1988; Feyisetan 1988, 1992; Feyisetan and Adeokun 1992). Suchman (1983) noted that the need for health planners to understand the culture of their population arises from the fact that the meaning of illness, and behavioural responses to illness, are basic factors influencing the reactions of the public to public health programs.

Feyisetan and Adeokun (1992) also noted that the simplicity of available modern curative measures or the relative availability of such measures may not be sufficient conditions for their adoption on a large scale. The extent to which modern methods are adopted may still depend on the people's conception of the causes of ill-health and on their level of conviction about the efficacy of such methods. Where conflicting views are held about the causes of ailment, people may be confused as to which of the traditional or modern methods is the appropriate treatment or preventive regime. Modern health services may be under-used or used in conjunction with traditional methods in societies with fatalistic views about certain diseases.

Two diseases, measles and diarrhoea, are particularly important in understanding the role of cultural beliefs in disease management among the Yoruba. In traditional Yoruba society, episodes of measles are usually attributed to a variety of causes which have no link with the concept of a virus (Odebiyi and Ekong 1982). Each episode of measles is traditionally considered as a punishment for breaching family taboos or as an evil deed from witches or enemies. The belief that disease episodes are caused by enemies is usually stronger in polygynous households where co-wives are natural suspects. With this kind of fatalistic view about the cause of measles, parents, especially in the rural areas with limited access to health facilities, may not seek modern medical care when children have measles.

⁴ *Abiku* is the Yoruba word for children believed to have come from the spirit world, who can die at will unless certain rituals are performed.

⁵ Suggested curative methods do not necessarily measure the actual curative methods adopted by the mothers. The suggested curative methods measure, at best, what the mothers perceived to be the ideal way to manage the disease episodes; they reflect what the mothers would have done in an 'ideal' situation. However, the actual measures adopted by the mothers when their children are sick may depend on many factors which include availability of resources and accessibility to modern health facilities.

Traditional belief systems may become less important for diseases for which there are cheap and compulsory immunization programs. If cheap or free immunization is made available to all children and there is public enlightenment on its benefits, parents are likely to obtain vaccinations for their children even when their perceptions of the aetiology of the diseases have not changed⁶.

While measles has usually been perceived to be a deadly disease among the Yoruba, diarrhoea is, in most cases, perceived merely as a means of getting rid of body impurities or as a sign of 'teething', 'crawling' or 'stretching'. Some mothers also believe that diarrhoea is caused by consumption of sweet things, and are less likely to administer oral rehydration solution (ORS) to their children since ORS contains sugar and salt. Since exposure to the risk of infection is not usually recognized by parents, diarrhoea is not perceived as a major problem until the baby is almost completely dehydrated. It is not uncommon to find mothers who recommend less feeding during diarrhoea since everything the baby takes will be 'passed out anyway'.

The effects of disease-specific beliefs on health seeking behaviour are usually compounded by the non-disease-specific beliefs. Of the non-disease-specific beliefs, the Yoruba belief in *abiku* (see note 4) is relevant to our understanding of disease management of the mothers. Yoruba people believe that some children come from the 'spirit world' and will return there after a short time on earth unless certain rituals are performed. It is important in any study of disease management among the Yoruba to investigate the persistence of this belief and also to examine the effect of such beliefs on curative measures likely to be adopted when children, believed to have come from the spirit world, are sick.

Source of data

Data for this study were obtained from a survey on the 'Impact of Cultural Beliefs and Practices on Child Health among the Yoruba'. The survey was undertaken in the rural and urban areas of selected local government areas (LGAs) of Ondo and Ekiti States. The headquarters of the selected LGAs served as the urban areas while two villages, one near and one far from the headquarters, were selected to represent the rural areas. Two rounds of the survey were undertaken, the first in September 1991 and the second in April-May 1992⁷.

In preparation for the 1991 population census, the National Population commission divided Nigeria into Supervisory Areas, each of which consisted of four to six Enumeration Areas. In the urban areas three supervisory areas were randomly selected and from each supervisory area, two to three enumeration areas were selected. Three supervisory areas were also selected in villages where there were more than three supervisory areas⁸. We systematically selected housing units from the ones already identified by the National

⁶ It is, however, unfortunate that, in many African countries, the dwindling economic fortunes have limited the availability of vaccines with the result that vaccination coverage is falling.

⁷ When the survey was conducted in 1991-92, Ekiti State had not been created; it was still part of the former Ondo State. The choice of the Local Government Areas where the study was undertaken was dictated by the desire to have a sample that reflects all the major sub-ethnic groups in the former Ondo State. Thus, two local government areas, Ijero and Isokan, were selected from the present Ekiti State and three, Akoko North, Akure and Ikale, were selected from the present Ondo State. The numbers of women interviewed in each local government area are: Ijero 196, Isokan 375, Akoko North 281, Akure 315 and Ikale 285.

⁸ Sometimes we had to go to two or three hamlets that constitute a village.

Population Commission as part of the preparation for the 1991 census exercise. Based on the decision to select one household per housing unit, a random selection of one household was undertaken where there were two or more households in a housing unit. Women aged 15-49 years with at least one live birth constituted the study population.

Information was collected through three sources: the formal interview, in-depth interviews coupled with ethnographic observations, and focus-group discussions. This paper is, however, primarily based on information collected through formal interviews but the results are sometimes supported by findings from the qualitative data. Two interview schedules were used: the household and the individual schedules. The household schedule contained questions on every member of the household and was used to determine eligible women for the individual schedule. The individual schedule contained questions on maternal and household characteristics; biological attributes of under-five children at birth and at the time of survey; maternal and child nutrition; measures of malnutrition among under-five children (weights and heights); sanitation and environmental conditions; incidence and prevalence of childhood diseases; perceptions of disease aetiology; diagnosis of diseases; preventive and curative measures; antenatal and postnatal child care practices, including immunization; child feeding practices; fertility, contraception and mortality.

To obtain information on different aspects of childhood disease management, women were first asked to mention the common childhood diseases in their community. For each disease mentioned, they were asked to state what they perceived as the cause and the preventive and curative measures that should be adopted. These responses were later compared with medically established causes, prevention and cure of these diseases. Stated causes that differed from medically established causes or had mythological underpinnings were labelled 'inadequate' while those which implied causative agents already identified through medical research were labelled 'adequate'. Suggested curative measures were classified as 'non-medical' when they differed from medically established curative measures and 'medical' when any of the medically established curative measures was mentioned or the use of modern health facilities such as hospitals or health centres was suggested. Specific questions were also asked of the mothers on their belief in *abiku*.

Four interviewers and a supervisor were assigned to each local government area. All the interviewers were females with some exposure to population or health education, and were fluent in the local dialect. Supervision of field work was continuous. In addition to supervising field activities, the supervisors checked completed schedules on the spot. Interviewers were asked to revisit households for which they had inadequately completed schedules. The research team also paid regular visits to survey areas to ensure adherence to survey procedures, determine survey problems and monitor the progress of work. Internal consistency checks suggest that the data from this survey are generally of good quality.

Method of Analysis

Besides simple cross-tabulations, the major tool of analysis is the logistic regression model. The logistic regression procedure was adopted to estimate the net impact of socio-economic variables on our dichotomously measured dependent variables: whether or not a mother would know the correct causes of each of the childhood diseases; and whether or not a mother believed in *abiku*.

For the regression models, the independent variables are dichotomous and as such assume the value one or zero. To avoid having a singular matrix that would yield no unique solution, especially with the inclusion of a constant term, one category of each binary independent variable is thus omitted in the estimation of the parameters of the equation. The excluded categories are depicted as RC (reference category) in Tables 2 and 5.

Results

The results are presented in two parts. In the first part, we present the mothers' perceptions of the aetiology of the three childhood diseases, measles, diarrhoea and fever,⁹ and the effect of such perceptions on the type of curative measures suggested by the mothers. Questions on aetiology, prevention and cure were only asked of respondents who identified these diseases as major childhood diseases in their community. Of the 1559 ever-married respondents selected for this study¹⁰, 1125, 1248 and 1404 identified measles, diarrhoea and fever, respectively, as major childhood diseases. In the second part, we present our findings on the persistence of the belief in *abiku* and the likely effect of this belief on mothers' management of childhood diseases.

Perceived aetiology of the childhood diseases and suggested curative measures

Perceived aetiology

The percentages of mothers who had adequate perceptions of the causes of measles, diarrhoea and fever are presented in Table 1. Panel I of Table 1 shows that 4.4 per cent of the mothers have adequate knowledge of the cause of measles, 55.8 per cent of diarrhoea, and 66.4 per cent of fever. With respect to causes of measles, there has been a considerable shift from supernatural to natural causes even though the stated natural causes are inadequate. A majority of the mothers gave 'too much heat' or 'dry season' as the cause of measles. Almost all mothers with inadequate perceptions of the causes of diarrhoea attributed it to 'teething'. Causes of diarrhoea that are classified as adequate include 'drinking contaminated water' and 'consumption of contaminated food'. Responses that attribute malaria fever to mosquito bites are classified as adequate while inadequate responses include 'working/playing too much in the sun' and 'dry season'.

⁹ While measles and diarrhoea are well recognized, fever is a symptom rather than a disease (Feyisetan and Adeokun 1992). Although fevers are often caused by malaria in the study areas, they may also be caused by other diseases. However, our respondents were clear about the kind of fever they referred to: fever caused by malaria.

¹⁰ Selection was based on the woman's ability to identify at least one childhood disease.

Table 1
Percentages of women with adequate knowledge of the causes of childhood diseases

Factors ^a	Women with adequate knowledge of the cause of:					
	Measles		Diarrhoea		Fever	
	%	N	%	N	%	N
I. All women	4.4	1086	55.8	1202	66.4	1357
II. Education						
None	1.6	317	45.6	371	57.7	411
Primary	4.6	389	56.4	424	68.1	480
Secondary & higher	6.6	380	64.6	407	72.3	466
III. Age (years)						
15-24	3.3	180	62.6	206	62.2	249
25-29	5.2	231	61.0	259	71.6	278
30-34	7.5	226	53.3	246	71.1	276
35-39	4.8	186	60.4	192	73.1	219
40-49	1.8	223	48.2	257	58.8	289
Age unknown	0.0	40	31.0	42	41.3	46
IV. Rural-urban residence						
Rural	1.4	507	44.7	562	56.3	631
Urban	7.1	579	65.6	640	75.3	726
V. Religion						
Catholic	1.2	163	48.6	181	65.5	203
Protestant	5.5	544	49.8	576	62.9	677
Other Christian	4.0	273	70.4	321	72.9	343
Islam ^b	4.7	106	56.5	124	68.7	134

Notes:

^a All the variables are significantly correlated with perceived causes of childhood diseases at the 5% level^b Includes 16 women who were adherents of traditional religion

To determine the factors that influence the likelihood that a mother would have accurate knowledge of the aetiology of the three childhood diseases, responses were examined according to selected characteristics of the mothers: education, age, urban-rural residence and religion. The results, presented in panels II to V of Table 1, indicate that mother's education and the likelihood that she would know the correct causes of the diseases are positively correlated; mothers in the urban areas are more likely than rural mothers to have adequate knowledge of the causes of the diseases; and while the 'Other Christian' mothers (Christian mothers who were neither Catholic nor Protestants) are most likely to have adequate perceptions of the aetiology of diarrhoea and fever, Protestant mothers are most likely to have adequate knowledge of the causes of measles. With respect to age, the table shows that mothers below the age of 40 years have more adequate knowledge of the causes of these diseases than those above 40 years of age; within the age range 15 to 39 years, there is little variation in the proportions of mothers who have adequate knowledge of the causes of these diseases.

Since each of the variables is significantly related, at the five per cent level, to the probability that a mother would know a correct cause of an identified childhood disease, a logistic regression model was then estimated to determine the net effect of each variable on the likelihood that a mother would have an accurate knowledge of the cause of each disease¹¹. The estimated coefficients are presented in Table 2, which shows that knowledge of the correct causes of these diseases increases with mother's education; urban residence is associated with more adequate knowledge of the causes; the effect of age diminishes significantly on controlling other variables; and 'Other Christian' women are more likely to have an adequate knowledge of the causes of diarrhoea and, to some extent, fever. For measles, knowledge of correct causes is independent of religion once other factors are controlled. The reason for the positive effect of education and urban residence on knowledge of disease aetiology may not be surprising. More educated mothers and urban residents are usually more exposed to current ideas than less educated mothers and rural residents. Unfortunately, it has been difficult to explain the differences in knowledge by religion. The qualitative data do not provide any reason for the differences, especially since the focus groups were not constituted on the basis of religion.

Table 2
Effects of socio-economic factors on the likelihood that a woman will have accurate knowledge of the causes of childhood diseases: the logistic regression model^a

	Measles	Diarrhoea	Fever
Coefficients of:			
Constant	-5.571	0.142	0.227
Education			
None	RC ^b	RC	RC
Primary	0.744 (0.528)	0.289 (0.159)	0.328* (0.155)
Secondary & higher	1.158* (0.553)	0.482** (0.188)	0.583** (0.189)
Age (years)			
15-24	0.001 (0.705)	0.198 (0.224)	-0.322 (0.214)
25-29	0.478 (0.643)	0.137 (0.212)	0.144 (0.211)
30-34	1.056 (0.586)	-0.059 (0.192)	0.339 (0.189)
35-39	0.668 (0.626)	0.351 (0.204)	0.502* (0.201)
40-49	RC	RC	RC
Age unknown	-4.505 (14.957)	-0.812* (0.373)	-0.721* (0.334)
Rural-urban residence			
Rural	RC	RC	RC
Urban	1.409* (0.423)	0.748** (0.126)	0.733** (0.124)
Religion			
Catholic	-0.824 (0.784)	-0.767** (0.201)	-0.218 (0.200)
Protestant	0.446 (0.370)	-0.903** (0.155)	-0.475** (0.152)
Other Christian	RC	RC	RC
Islam	0.232 (0.566)	-0.742** (0.228)	-0.275 (0.231)
N of cases	1086	1202	1357
Model Chi-Square	43.434	116.665	99.655
Degree of freedom	11	11	11

¹¹ Bivariate relationships may be spurious and hence may disappear on controlling other variables.

Notes: ^a Standard errors are in parentheses; ^b Reference category

** Significant at 1% level; * Significant at 5% level

Perceived curative measures

Suggested curative measures are classified into two categories: 'modern medical' and 'non-medical'¹². Panel I of Table 3 shows that 72.3 per cent, 77.4 per cent and 90.2 per cent of all women suggested modern medical curative measures for measles, diarrhoea and fever, respectively¹³. For all the diseases, the percentages of women who suggested modern medical curative measures are much higher than the percentages who knew the correct causes of these diseases.

Table 3
Percentages of women indicating modern medical curative methods for childhood diseases^a

Factors	Childhood Disease		
	Measles	Diarrhoea	Fever
I. All women	73.0 (3.2)	77.4 (19.6)	90.6 (27.9)
II. Education			
None	74.1 (2.5)	79.0 (11.3)	91.0 (24.3)
Primary	75.1 (4.6)	79.0 (20.0)	91.0 (29.0)
Secondary & higher	70.0 (2.4)	74.2 (24.6)	89.7 (30.0)
III. Age (years)			
15-24	65.0 (2.2)	73.8 (27.7)	86.3 (33.3)
25-29	71.4 (0.4)	77.6 (19.3)	93.2 (29.9)
30-34	75.7 (5.8)	80.1 (21.1)	92.4 (25.4)
35-39	76.3 (4.3)	80.7 (19.3)	90.3 (24.2)
40-49	73.5 (4.0)	72.8 (9.3)	88.9 (27.7)
Age unknown	85.0 (0.0)	90.5 (16.7)	93.5 (21.7)
IV. Rural-urban residence			
Rural	77.5 ^b (2.4)	77.2 (13.3)	91.6 (23.0)
Urban	69.1 ^c (4.0)	77.5 (23.8)	89.7 (32.2)

¹² Most of the responses in the category 'modern medical' are very imprecise. Initially, responses on curative measures were grouped into four categories: (1) 'medically recommended', if a specific medically recommended measure was mentioned; (2) 'traditional/less precise/inadequate', if response implies the adoption of a traditional, or totally inaccurate measure; (3) 'health facility', if respondent merely suggests the use of the hospital/health centre; and (4) 'drugs/medicine', if respondent merely recommends the use of drug or medicine without specifying the type of drug. However, given the generally low level of medical knowledge in our society, we thought it not feasible to expect most women to know precisely the recommended curative measures or what the doctors or nurses offer to cure these diseases in the hospital. In addition, precise knowledge of curative measures may depend on whether a woman has a child who has experienced an attack of measles. We therefore decided to lump (1), (3) and (4) together as 'modern medical'. Also, rather than say the actual word 'immunization', many women just said 'take the child to the hospital for necessary attention' when asked how measles could be prevented.

¹³ Our classification into 'modern medical' and 'non-modern medical' has nothing to do with the efficacy of the methods.

V. Religion			
Catholic	73.6 ^b (4.3)	84.0 ^b (19.3)	90.6 (31.5)
Protestant	73.5 (2.9)	74.3 ^c (16.3)	90.3 (26.4)
Other Christian	76.2 (3.7)	79.1 (16.5)	92.7 (25.7)
Islam	61.3 ^c (1.9)	78.4 (36.3)	86.6 (35.8)
VI. Perceptions of disease aetiology			
Adequate	97.9 ^b	77.5	93.0 ^b
Inadequate	71.9 ^c	77.2	85.7 ^c

Notes: ^a The percentages of women who mentioned a specific curative measure that is medically recommended are in parentheses

^b and ^c indicate values of a variable that are significantly different from each other and thus make the variable significantly related to the likelihood that a woman will know (and adopt) a modern medical curative measure at 5% level

The big difference between the percentage of women who knew the correct cause of measles (4.4) and the percentage who suggested modern medical curative measures (73.0) reinforces our earlier contention that levels of adequacy of knowledge about disease causation may be irrelevant in the choice of curative measures when appropriate preventive and curative measures are available at low cost. The availability of primary health care centres, and the enlightenment campaigns associated with launching the expanded program of immunization in these communities, must have given the women an opportunity to know more about modern preventive and curative measures for measles irrespective of their beliefs about causation. This observation was reinforced by the qualitative data which show that large numbers of mothers are already aware that measles can be prevented by vaccination.

Curative measures that imply isolation of the patient, use of medical lotion to reduce itching, and use of modern health facilities, especially the hospital, are classified as 'modern medical' for measles. Of the curative measures classified as 'non-medical' for measles, 'consultation with traditional healers' is predominant. For fever, curative measures classified as 'modern medical' include the use of anti-malaria drugs, injections, and modern health facilities, and curative measures classified as 'non-medical' include the use of concoctions prepared from *agbo*, locally available herbs, and consultation with traditional healers¹⁴. For diarrhoea, any response that does not indicate oral rehydration solution, whether or not self-prepared, nor imply the use of a modern health facility, is regarded as 'non-medical'.

To determine whether suggested curative measures differ by socio-economic factors, responses were also examined by respondents' age, education, urban-rural residence, religion and perceptions of disease aetiology. The results, presented in panels II to VI of Table 3, indicate that the percentage of women who suggested modern medical curative measures for each of the three diseases does not vary by age, education, and, except for measles, by urban-rural residence. Religion is moderately associated with the likelihood that a woman would report modern medical curative measures for measles (panel V), and women who have

¹⁴ Some locally available herbs, *agbo*, have been reported as efficacious especially in the treatment of malaria fever. However, it would be presumptuous to assume that all types of *agbo* are efficacious and hence could be placed on the same level of efficacy as the modern medical methods. Until new findings indicate the contrary, we feel safer to assume that the well tested modern medical methods are generally more efficacious than *agbo* and the other traditional methods.

adequate knowledge of the causes of measles and fever are more likely to report modern medical curative measures (panel VI).

Care should be taken in interpreting the lack of significant correlation between the socio-economic factors and the likelihood that a woman would report modern medical curative measures. Because the category 'modern medical' is very broad, the relationship between suggested curative measures and socio-economic factors may be confounded. This realization prompted us to examine the percentages of women who suggested specific medically recommended curative measures by socio-economic factors. We found that for diarrhoea and fever, the percentages of women who recommended specific modern medical curative measures vary significantly by the socio-economic variables (see figures in parentheses in Table 3)¹⁵.

Belief in abiku and the effect of this belief on disease management

In addition to disease-specific questions, the respondents were also asked to indicate whether they believed that there are *abiku* children. Panel 1 of Table 4 suggests that the majority of the women believe in *abiku* children. While 56.2 per cent of the women believed in *abiku* children, 30.6 per cent did not share this belief and 13.2 per cent were unsure of their feelings. Asked how an *abiku* can be identified, mothers who believed in *abiku* gave such responses as repeated deaths; evidence of deformity from past deaths; frequent indisposition; non-responsiveness of their illnesses to modern medical care; and verification from traditional healers or soothsayers. Both the focus-group discussions and in-depth interviews point to high mortality rates among *abiku* children. In a focus-group discussion among women aged 40 years and above in Ijero, a participant exclaimed:

Why do you think we call them *abiku*? It is because they die at will...they really don't have to be sick for long before they die.

Table 4
Percentages of women believing in *abiku*^a

Factors	Percentage	N of cases
I. All women	56.2 (13.2)	1502
II. Education		
None	61.5 (14.1)	455
Primary	57.2 (12.2)	540
Secondary & higher	50.3 (13.4)	507
III. Age (years)		
15-24	48.6 (15.9)	276
25-29	53.1 (15.6)	307
30-34	56.3 (12.0)	300
35-39	55.6 (10.1)	248
40-49	62.6 (13.1)	321
Age unknown	78.0 (6.0)	50
IV. Rural-urban residence		

¹⁵ A logistic regression model was not estimated for the probability that a woman would recommend modern curative methods since most of the variables are not significantly correlated to the dependent variable at the bivariate level.

Rural	55.0 (12.7)	724
Urban	57.3 (13.6)	778
V. Religion		
Catholic	54.1 (12.4)	218
Protestant	51.0 (16.4)	781
Other Christian	69.3 (8.9)	358
Islam	55.2 (7.6)	145

^a Percentages of 'don't know' responses in parentheses

Table 4 also shows that education is significantly negatively correlated with the percentage of women who believe in *abiku* (panel II); age is positively correlated with the likelihood that a woman will believe in *abiku* (panel III); urban-rural residence is not related to the belief in *abiku* (panel IV); and 'Other Christian' mothers are more likely than any other religious group to believe in *abiku* (panel V).

To determine the net effect of these characteristics, we estimated a logistic regression model that relates the likelihood of believing in *abiku* to the socio-economic factors. The coefficients of the model which are presented in Table 5 indicate that education has no significant impact on the belief in *abiku* once other variables are controlled; mothers between 15 and 24 years of age are less likely than older mothers to believe in *abiku*, and mothers over 24 are equally likely to share this belief; the belief in *abiku* is equally strong in both the rural and urban areas; and religion has an effect on this belief with the 'Other Christian' women still more likely than any other religious group to retain this belief.

Table 5
Effects of socio-economic factors on the likelihood that a woman will believe in *abiku*: the logistic regression model^a

Coefficients of:	
Constant	1.132
Education	
None	RC ^b
Primary	-0.046 (0.142)
Secondary & higher	-0.307 (0.169)
Age (years)	
15-24	-0.484* (0.196)
25-29	-0.345 (0.190)
30-34	-0.275 (0.172)
35-39	-0.309 (0.178)
40-49	RC
Age unknown	0.643 (0.367)
Rural-urban residence	
Rural	RC
Urban	0.154 (0.119)
Religion	
Catholic	-0.706** (0.181)
Protestant	-0.804** (0.138)
Other Christian	RC
Islam	-0.641** (0.2060)
N of cases	1502
Model Chi-Square	65.851
Degree of freedom	11

Notes: ^a Standard errors are in parentheses; ^b Reference category

** Significant at 1% level; * Significant at 5% level

To determine the effect of this belief on disease management, we asked mothers who believe in *abiku* to indicate whether a suspected *abiku* should be subjected to the same treatment as a non-*abiku*, and where treatment should be sought for a suspected *abiku* when he or she is sick. The responses are presented in panels I and II of Table 6. Panel I shows that 62 per cent reported that a suspected *abiku* should not be treated like an ordinary child when it is sick. To the question on where a suspected *abiku* should be treated, 70.3 per cent answered traditional healers' home, church or mosque (panel II of Table 4); 91.5 per cent of women who stated that an *abiku* child should not be treated like the others suggested the traditional healer's home, the church or mosque as the place for treatment. These findings reflect the mothers' belief that illnesses of *abiku* are not caused by natural but by supernatural forces. Thus, such illnesses are believed to be incurable by 'mere administration of drugs or injections in the hospitals', as was also reported in the focus-group discussions.

Table 6
Health seeking for *abiku* (%)

I. Treat <i>abiku</i> like non- <i>abiku</i> child when it is sick?	
Yes	35.2
No	61.8
Don't know	3.0
No. of cases	844
II. Where should <i>abiku</i> be treated?	
Hospital/health centre	28.5
Traditional healer	60.7
Church/mosque	9.6
Other	1.2
No. of cases	844

Summary and conclusion

In the preceding analysis, an attempt has been made to examine how perceptions of disease aetiology and the persistence of the belief in *abiku* could influence disease management. Data collected from Ondo and Ekiti States, Nigeria were used. It has been demonstrated that high percentages of Yoruba mothers do not have an accurate knowledge of the causes of the selected childhood diseases, especially measles; many of the mothers recommended modern curative methods in spite of the high level of ignorance about disease causation; the belief in *abiku* is still strong among mothers in Yorubaland; and the curative measures likely to be adopted by a mother may depend on whether the sick child is believed to be an *abiku*.

An important issue that emerges is the apparent contradiction between what the mothers perceived to be the ideal curative measures and the curative measures that they might end up adopting as a result of their belief in *abiku*. The same group of women who recommended the use of modern curative methods, even when they were ignorant of disease cause, also opined that modern curative methods would be inadequate for a sick *abiku*. Thus, they recommended the use of traditional healers and religious institutions irrespective of the nature of illness. The probability, therefore, that a child will be given adequate medical care depends on whether or not it is believed to be an *abiku*. This is a serious matter in a society where over half¹⁶ of the women who are mainly responsible for seeking adequate health care for the children still retain the belief in *abiku*.

This study has demonstrated, once more, the need to take into consideration people's beliefs and practices when implementing health policies. Such consideration demands that implementation of health policy is localized. The success of any health policy depends very much on how much effort is put into streamlining beliefs that are at variance with medical principles. For instance, the use or non-use of modern health facilities in a Yoruba community may be affected by how much the people believe in *abiku*. People who believe that illnesses of *abiku* are unresponsive to modern medical care are not likely to use health facilities for children thought to be *abiku*. The fact that considerable proportions of Yoruba mothers with some education still retain this belief shows how strong the belief is and thus it cannot be dismissed as unimportant. There is, therefore, a need for more public enlightenment on this issue.

¹⁶ About two-thirds of the women probably share this belief since 13.1 per cent of the women were confused on the issue at the time of the interview.

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