WORLD HEALTH & POPULATION

www.worldhealthandpopulation.com

VOLUME 11 • NUMBER 2 • 2009

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Factors Influencing Mothers' Role in Convulsion Treatment among Under-Five Children in Ibadan, Nigeria

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Abstract

Convulsion among children between six months and five years is a major contributor to childhood mortality in less-developed societies, especially in sub-Saharan Africa. Most studies on under-five deaths have ignored the influence of socio-demographic and environmental factors as they relate to causes of the thematic health condition and available therapies. This study investigated mothers' perception of convulsion causation, relevant signs and symptoms, and the influence of socio-economic status on mothers' choice of remedies. The research was conducted in Ibadan, southwest Nigeria, which is densely populated with mainly Yoruba-speaking people. The study population comprised mothers who, at the time of fieldwork for the present analysis, had at least one under-five child. Five hundred questionnaire respondents were selected through a multistage sampling technique, and 14 in-depth interviews (IDIs) were conducted among different categories of women identified through the snowball technique. Voluntary Social Action Theory and the Health Belief Model were used in explaining the relationship between the dependent and independent variables. The findings show that the remedies mothers chose were strongly influenced by socio-demographic factors such as marriage type, religion, level of education, occupation and place of residence. It is strongly suggested that interventions, health policies and programs should focus on how best to empower women to effectively utilize medical information that will enable them recognize symptoms of this common health condition and/or undertake preliminary therapies that contribute positively to convulsion prevention or treatment.

Background and Problem Statement

Convulsion is a major cause of under-five mortality, especially in sub-Saharan Africa, which has the highest prevalence rate in the world (Amouzou and Hill 2004; Hodges and Williams 1998). In 2006, the under-five mortality rate in this region was 160 per 1000 live births, more than double that of the worldwide rate of 72 per 1000 (UNICEF 2007). Nigeria is among the countries in Africa that contribute disproportionately to these mortality statistics, suggesting a serious burden of preventable childhood diseases. As Hodges and Williams (1998) have stated, convulsion ranks high among medical conditions that are related to childhood mortality and is a major contributor to the high under-five mortality rate in Nigeria. Data show that the infant mortality rate (expressed per 1000 live births) in Nigeria increased from 75 in 2002 to 100 in 2007 (Population Reference Bureau 2002, 2007).

On average, under-five mortality figures in less-developed societies, particularly in Africa, are high despite significant declines in most parts of the more developed world. For instance, information from the World Health Organization (WHO 2004) indicates that one in five African children die before age five, in spite of global improvements in medical science. As Wallace (1998) points out, approximately 2% to 4% of children experience at least one convulsive episode before age five, heightening their vulnerability to childhood mortality. The situation is exacerbated by the low status of women, exemplified in powerlessness, high illiteracy levels, unemployment and subjugation. These variants of patriarchy unwittingly undermine both choice of treatment options and the decision to use these options at critical moments where the approval of men and husbands is unassailable (Nwokocha 2007).

Mothers' choice of treatment options is embedded in complexity defined by the social, economic and cultural context. As a major problem related to under-five mortality in Nigeria, Jegede et al. (2005) noted that health-seeking behaviour is dependent on specific socio-cultural circumstances in which the illness takes place and the mother's interpretation of the situation. Amouzou and Hill (2004) have noted that several studies have demonstrated a close association between child mortality and socio-economic status. Argeseanu (2004) specifically found that the mother's level of education is strongly associated with improved child survival in Nigeria.

At the individual level, treatment-seeking behaviour is a function of belief about disease causation and perceived cure (Mwenesi et al. 1995). However, where such belief and perception are guided by ignorance, treatment choices would likely be contrary to effective cure. Jegede (1998) has revealed that certain illnesses are considered more responsive to orthodox medicine while others are believed to be better handled through traditional healthcare services. However, identifying which conditions are better associated with either of the medical systems has been particularly difficult. This difficulty explains the persistent shuttling between systems among mothers in Nigeria, especially in the southern part of the country (Erinosho 1998; Jegede 1998).

The implications of this characteristic uncertainty are avoidable delays and deaths. Anecdotal evidence reveals that many countries in the Middle East, North Africa and East Asia have made impressive progress toward Millennium Development Goal (MDG) 4 by achieving steep declines in under-five mortality (UNICEF 2007). This study therefore seeks to bridge the gaps in knowledge related to under-five mortality in Nigeria by identifying the socio-cultural, demographic and environmental factors affecting treatment options such as traditional, home and hospital based therapies, among relevant mothers with a view to suggesting appropriate remedies. Primarily, the findings and resulting recommendations will impact policies that target effective implementation of child-survival programs to reduce infant and child mortality in less-developed countries.

Literature Review and Theoretical Framework

Literature Review

Knowledge on the health culture of a people is crucial to successful prevention and/or treatment of a given medical condition (Helman 1990). As Oke (1996) has observed, the use and non-use of health services is largely determined by the socio-cultural environment. In addition, Erinosho

(1998) noted that many culture-related syndromes are effectively managed through an informed knowledge of the patient's culture and background. Consequently, treatment options are determined by a catalogue of factors such as the perceived cause of the illness/condition, the environment and the extent to which a health seeker is able to recognize choices that are most appropriate. In line with the above assertion, it has been pointed out that a person's response to illness will depend on the ability to correctly recognize its signs and symptoms, and the evaluation of the seriousness of these indicators (Diallo et al. 2001; Nyamongo 2002).

The World Bank (1998) has noted that maternal and infant mortality depends to a large extent on whether women have access to the information, education and communication resources they need to provide themselves and their infants with adequate care. This shows that the achievement of safe motherhood among women results from the interaction of several factors in the society and that the well-being of mothers is intrinsically linked with child welfare and survival, especially in situations where men as fathers barely live up to their roles (Isiugo-Abanihe 2003).

Several reasons are responsible for lack of access to health facilities in various settings. For instance, the United Nations (2000) observed that in most rural settings, at least one in three women live more than 5 km from the nearest facility and that at least 80% live more than five km from the nearest hospital. Such distance may not be seen as undermining healthcare, especially among those who resort to self-medication either in the short or long term. Records show that very recently only 35% of the Nigerian population had access to the modern healthcare system, while the remaining 65%, the majority of them women, employed the services of traditional healers (Odebiyi and Aina 1998; Adeyeye 2001).

As documented by Ahorlu et al. (1997), management of childhood illness most often begins at home, while medicine shops are usually the second port of call (Neema n.d.). Reasons adduced by parents for seeking care from medicine vendors include ease of obtaining advice, personalized interaction and flexible pricing (Adetunji 1991). As has been revealed, most cases of illness begin and end with self-treatment (McCombie 1996), and most people are satisfied with their first choice of care (Salako et al. 2001).

Though some studies (Yeneneh et al. 1993; Tsuyuoka et al. 2001) have recorded preference for government clinics over other sources, research conducted in Uganda has shown that community members have lost confidence in government facilities (Nsabagasani n.d.). In addition, other variables identified as affecting health outcomes in several African communities include lack of accessibility to skilled personnel who can effectively manage medical complications (especially among those living in rural areas), impassable roads or lack of a transportation system, poverty, or a combination of these variables (Ransom and Yinger 2002; Zlidar et al. 2003).

Scepticism about the effectiveness of government clinics is also a feature of Nigeria's medical system. We have seen that 65% of the population, mostly women, use the services of traditional healers, a group that includes traditional birth attendants (Adeyeye 2001). Furthermore, this preference is increasing. Reasons for preferring traditional healers include cultural beliefs and practices, convenience of access and cost of services.

Theoretical Framework

Talcott Parsons' Voluntary Social Action Theory, which emphasizes constraint of individuals within particular customs and values, has been adopted for this study to explain human behaviour with regard to socio-cultural factors and their influence on pregnancy outcomes. Much like Weber's Social Action Theory, which asserts the primacy of society over the individual (Giddens 2000), Parsons argues that societies exert social constraint over the actions of individuals.

This perspective focuses on the course of action as determined by the physical and social environment; society influences the ends that the actor seeks and the means he or she will use to attain them. Parsons' theory, like Weber's, states that action can be explained in the context of the subjective meaning given to it by the actor and that actions are always directed at the attainment of goals with the choice of the most appropriate method by the actors (Ritzer 2008). Parsons however, by

emphasizing the importance of societal factors in constraining the ends that an individual can pursue and the means of pursuing them extends Weber's position.

Parsons' Voluntary Social Action Theory states the following:

1. People's actions are directed toward the achievement of end goals. This translates to health seeking by mothers directed toward attaining good health for their under-five children.
2. People adopt the appropriate means and procedures from those available to attain their goals. This suggests that individual mothers are left with alternatives, especially with regard to options available.
3. Courses of action are determined by the conditions of the physical and social environment. The environment and the structures inherent in it shape as well as dictate the individual actor's perception and attitude toward a particular action.
4. Individuals have emotions and make moral judgments that influence the selection of ends and means and their order of priority. This emphasizes the freedom of individuals to seek whatever approach and activity they perceive necessary in order to achieve a goal, in this case good health for under-five children.
5. Lastly, actions are to be explained by the subjective meaning given them by the actor or by his or her perception and definition of the ends and conditions of the situation (Ritzer 2008).

This Parsonian position in viewing good health as optimization of gratification emphasizes the effect of socio-cultural factors on convulsion treatment. Erinosho (1978) and Oke (1982, 1996) in their model of socio-cultural variables following this same view: that one's social and cultural environments are dictated by norms that in turn define one's actions in a given social context.

Rosenstock's Health Belief Model (1966) is adopted as a complementary perspective in an attempt at a comprehensive explanation of the thematic phenomenon. The model explains health-related behaviour from a social–psychological perspective using the theories of value-expectancy and decision making. It focuses on dimensions affecting an individual's control over a specific action and uses those same dimensions to predict behaviour. The position of this model, which focuses on the individual's subjective assessment of the health situation, especially in utilization of health services, is that by taking a particular action, an individual's susceptibility/vulnerability would be reduced or, if disease had already occurred, severity would be ameliorated.

The model is based on the understanding that a person will take a health-related action such as, in the present context, mothers taking precautionary health measures perceived necessary to avoid a negative health condition, including convulsion among their children, if convinced that the action taken will likely be effective and beneficial. The model asserts that a person's motivation to undertake a health-related behaviour can be found in the following factors: perceived susceptibility, severity, benefits and barriers, and cues to action. Applying this model in the analysis presupposes that these mothers have sufficient awareness of convulsion to appreciate their children's vulnerability to the condition, recognize symptoms before convulsion occurs and take the most appropriate action to ameliorate the effects when convulsion has already occurred.

Materials and Methods

The study involved both qualitative and quantitative techniques of data collection. Specifically, primary data were generated through in-depth interviews and a survey questionnaire, while secondary information came from the literature. The study population consisted of 500 mothers residing in Ibadan, southwest Nigeria, with at least one under-five child. A multistage sampling method was used to select respondents for the study by first clustering Ibadan into two broad areas on the basis of residents' perceived income. Bodija and Akobo were chosen as high-income areas, Agbowo and

Beere as low income. Two locations were randomly selected from each of these areas for sampling.

The next stage involved random selection of 10 streets in each location, while systematic random sampling was adopted in the final selection of households. In each of these households, a mother of at least one under-five child was purposively included as a respondent. In households with more than one eligible mother, we used the ballot technique for selection. However, in households with no eligible mother, either because the children were older than the thematic age or because of infertility, the household was skipped for the nearest one. Fieldworkers observed ethical requirements by explaining the purpose of their activities, the right of respondents to refuse participation or to withdraw at any point in the research without inhibition, and an assurance that respondents' anonymity would be fully guaranteed to the extent that none of the information pertaining to the study could be traced to them. In all, all 500 questionnaires were returned and found usable, due to fieldworkers' patience in explaining questions to respondents and steadfastness in making return visits.

Use of in-depth interviews was meant to complement quantitative data necessary in examining a complex issue such as treatment options among mothers in a patriarchal society. Fourteen IDIs were undertaken among different categories of women identified through the snowball technique. They included seven mothers of under-five children, four whose children were older than five and three women identified through key information as knowledgeable about convulsion in children. To avoid double participation, interviewers recorded interview respondents' addresses and made them available to questionnaire distributors for skipping in the event that one of the IDI households was included in random selection.

Questionnaire data were edited and cleaned to eliminate inconsistencies that could undermine validity and reliability. Information generated from pre-coded, open-ended and fixed-choice questions was entered using Microsoft Access Software to minimize data entry errors and manage data. These data were finally exported and analyzed using the Statistical Package for Social Sciences (SPSS, Version 12.0). Univariate analysis involved the use of descriptive statistics such as frequencies and percentages, while bivariate analysis examined relationships among variables, with emphasis on parametric data. Multivariate analysis was undertaken to investigate the interaction of complex variables in explaining convulsion treatment in relation to the situation of women and mothers. Qualitative data were transcribed, translated and analyzed using ethnographic summaries and manual content analysis. Findings from both techniques are presented together.

The limitations of this study include paucity of data on convulsion treatment for under-five children; literature is scanty as little research has been undertaken on the subject. In addition, in the course of editing quantitative data, we found that some questionnaires had inconsistent responses, which was a reflection of the reluctance of some study respondents. Dealing with illiterate respondents was difficult, as it was not easy to convince them of the essence of the research. Another limitation is that the case-study approach was not adopted in the course of data collection. In a way, some concrete information pertaining to specific incidence of fatality was not generated.

Results and Discussion

Data on the demographic characteristics of respondents presented in Table 1 show that the 500 respondents are all female, appropriate considering that the study focused on factors affecting the role of mothers in convulsion treatment for under-five children. Mothers' ages ranged from 25 to 49 years. Table 1 reveals that respondents in age category 30 to 34 constitute 29.2% of the total and form the largest age group. They are closely followed by those of 35 to 39 years, who constitute 26% of respondents, while those aged 25 to 29 and 45 to 49 represent 14% and 12%, respectively. These results are not unexpected given that the age of marriage among women in the study area is rising, a consequence of more women pursuing higher education and the harsh socio-economic environment that is affecting the capacity of young men to marry. As such, most women aged 25 to 29 do not have under-five children. Similarly, most women aged 45 to 49 are no longer bearing children, and few have children under five.

Table 1. Percentage distribution of respondents by socio-demographic characteristics

Characteristics	Categories	Frequency	%
Sex	Male	0	0
	Female	500	100
	Total	**500**	**100.0**
Age	25–29	70	14.0
	30–34	146	29.2
	35–39	130	26.0
	40–44	94	18.8
	45–49	60	12.0
	Total	**500**	**100.0**
Ethnic group	Hausa	24	4.8
	Igbo	46	9.2
	Yoruba	402	80.4
	Others	28	5.6
	Total	**500**	**100.0**
Education	No education	28	5.6
	Primary	40	8.0
	Secondary	114	22.8
	Tertiary	302	60.4
	Other	16	3.2
	Total	**500**	**100.0**
Occupation	Trading	256	51.2
	Civil servant	174	34.8
	Artisan	14	2.8
	Housewife	56	11.2
	Total	**500**	**100.0**
Marital status	Married	456	91.2
	Separated	36	7.2
	Divorced	2	.4
	Widowed	6	1.2
	Total	**500**	**100.0**
Type of marriage	Monogamous	368	73.6
	Polygamous	120	24.0
	Other	12	2.4
	Total	**500**	**100.0**

Table 1 continued.

Characteristics	Categories	Frequency	%
Residence	High-income	266	53.2
	Low-income	234	46.8
	Total	**500**	**100.0**
Number of children	1–2	168	33.6
	3–4	260	52.0
	5–6	62	12.4
	7–8	10	2.0
	Total	**500**	**100.0**
Religion	Christianity	370	74.0
	Islam	98	19.6
	Traditional	32	6.4
	Total	**500**	**100.0**

The ethnic composition of study participants in Table 1 reveals that most are from the three major groups: the Hausa, Igbo and Yoruba, although Nigeria is composed of about 384 ethnic groups (Otite 2000). This explains the fairly large representation of members of these groups in most urban centres in the country. Respondents from other groups, combined, constitute only 5.6% of the total. The Hausa and Igbo ethnic groups comprise 4.8% and 9.2% of the total respectively. As expected, 80.4% are Yoruba; Ibadan is located in Southwestern Nigeria and is predominantly inhabited by the latter group.

For educational qualifications, 60.4% of respondents had tertiary school education, while 8.0% and 22.8% had primary and secondary, respectively. Ordinarily, we would have expected that a large majority of respondents would be formally employed, given the percentage with tertiary school education. On the contrary, Table 1 reveals that only 34.8% were civil servants, while 51.2% were traders. The disparity between education and occupation could be a function of a high unemployment rate among tertiary institution graduates that may have led them to a different means of livelihood, including trading. Interestingly, 11.2% of respondents were housewives with no involvement in economic activities, an indication of the powerlessness among women in a profoundly patriarchal society such as Nigeria.

In terms of residence, 53.2% of respondents lived in high-income areas that included Bodija and Akobo. Respondents living in low-income areas such as Agbowo and Beere constituted 46.8%. Table 1 also reveals that 52% of respondents had three or four children at the time of data collection, while 33.6% had one or two. Mothers with five or six children constituted 12.4% of respondents; only 2% had seven or eight children. These data may readily be interpreted to mean that fertility levels have dropped remarkably in Ibadan. However, this may not be so. Perhaps we can assume that these figures would most likely increase, as a large majority of these women are still fecund and will be for a long time. In terms of religious affiliation, 74% of respondents were Christians, 19.6% Muslims and only 6.4% Traditional religion.

Anecdotal evidence suggests that some mothers lack awareness about convulsion. It was necessary therefore to ask specific questions on what they knew about the condition and their perception of its causes. Results in Table 2 reveal their differing opinions on causation. Of the total, 44.8% of respondents indicated that high temperature is associated with convulsion.

Table 2. Distribution of respondents by perceived causes of convulsion

Categories	Frequency	%
No response	60	12.0
High temperature	224	44.8
Malaria	114	22.8
Irritation in the stomach	6	1.2
Harsh weather conditions	26	5.2
Spiritual attack	60	12.0
Genetic	10	2.0
Total	**500**	**100.0**

Another 22.8% stated that malaria causes convulsion. These two most frequently mentioned factors are similar, given that high temperature is one of the symptoms of malaria. Spiritual attack was the third most important factor identified; 12% linking this with convulsion. An IDI respondent recalled:

> I lost my daughter while she was giving birth to her son; this automatically conferred on me the responsibility of a foster mother to the boy. At a time, my grandson convulsed and being a midwife by profession I decided to do enema for him, in his anus, soon after he was resuscitated to enhance easy bowel movement. When he excreted, one naira coin was found in his excreta. He was three years old; when interviewed he revealed that he saw his late mother in the sitting room, prompting and persuading him to swallow the coin which was placed on the center table. My knowledge of convulsion is that it is a symptom of an attack.

The percentage of respondents who believed genetics or irritation of the stomach caused convulsion were 2.0% and 1.2%, respectively. Interestingly, 12% did not respond to the question on causation. Causes respondents mentioned reflect mothers' perceptions of disease generally, most of which are associated with natural, preternatural and mystical causes (Erinosho 1978; Oke 1982). From the foregoing, it is apparent that a more detailed breakdown of the different categories is necessary in order to see whether mothers' education, residence and ethnic group affect perceptions of what causes convulsion.

The cross tabulation in Table 3 shows the data on mothers' perceived cause of convulsion by selected variables. Results show that while mothers' education and residence were positively correlated, ethnic group was negatively correlated.

Table 3 shows that education is significantly related (p = .000) to mothers' perceived cause of convulsion. It is, however, interesting to note that some educated mothers attribute factors other than natural ones to convulsion. A respondent from the Bodija area of Ibadan linked convulsions to spiritual attack:

> As a proprietress, I am highly educated yet I believe convulsion is as a result of spiritual attack. One of my pupils convulsed and my staff and I resuscitated her. However, when her parents came I advised them to take her to church for prayers and deliverance from the spirits troubling her.

As a result of widespread health information and on the basis of scientific assumptions, convulsion is mainly ascribed to natural causes. Nevertheless, prognosis and progression of convulsion does not rule out preternatural and mystical causes, as can be seen in Table 3. Most respondents (70.4%)

Table 3. Respondents' level of education and perceived cause of convulsions

Education	Categorization of causes of convulsion					Total	X^2 Crit	X^2 Cal	*df*	*p*
	No response	Natural	Preternatural	Genetic	Mystical					
No formal education	4 14.3%	14 50.0%	2 7.1%		8 28.6%	28 100.0%	26.3	52.309	16	.000
Primary	4 10.0%	24 60.0%	2 5.0%		10 25.0%	40 100.0%				
Secondary	18 15.8%	56 49.1%	26 22.8%	2 1.8%	12 10.5%	114 100.0%				
Tertiary	22 7.3%	246 81.5%	12 4.0%	12 4.0%	10 3.3%	302 100.0%				
Others		12 75.0%			4 25.0%	16 100.0%				
Total	**48 9.6%**	**352 70.4%**	**42 8.4%**	**14 2.8%**	**44 8.8%**	**500 100.0%**				

$X^2 = 26.3$; $df = 16$; $p < .05$.

Table 4. Place of residence and perceived causes of convulsion

Residence	Categories of causes of convulsion						X^2 Crit	X^2 Cal	*df*	*p*
	No response	Natural	Preternatural	Genetic	Mystical					
Urban	20 7.5%	216 81.2%	12 4.5%	6 2.3%	12 4.5%	266 100.0%	9.49	17.350	4	.002
Rural	28 12.0%	136 58.1%	30 12.8%	8 3.4%	32 13.7%	234 100.0%				
Total	**48 9.6%**	**352 70.4%**	**42 8.4%**	**14 2.8%**	**44 8.8%**	**500 100.0%**				

$X^2 = 9.49$; $df = 4$; $p < .05$.

cited natural causes rather than mystical or supernatural ones. This implies that people will be more receptive to preventive measures, since humankind is known for controlling natural forces to ensure survival. As a corollary, the danger of emphasizing the supernatural cause is that undertaking preventive measures that relate to socio-cultural and physical factors would not be prioritized.

Table 4 shows that mothers' place of residence has a significant relationship ($p = .002$) with perceived cause of convulsion. For instance, 81.2% and 2.3% of urban respondents ascribe the cause to natural and genetic factors, respectively, compared with 58.1% and 3.4% of their rural counterparts. This disparity could be attributed to discrepancies in health-related knowledge in favour of urban residents. Expectedly, 26.5% of rural respondents attributed the causes of convulsion to a combination of preternatural and mystical factors, while only 9% of those in urban areas cited these factors. Table 5 shows that Yoruba respondents formed the majority (71.6%) of those who perceived natural factors as the cause, while 8.5% of Yoruba respondents believed it was preternatural and 8.0% mystical.

Table 5. Ethnic groups and perceived causes of convulsion

Ethnic group	Categories of causes of convulsion						X^2 Crit	X^2 Cal	*df*	*p*
	No response	Natural	Preternatural	Genetic	Mystical	Totals				
Yoruba	36 9.0%	288 71.6%	34 8.5%	12 3.0%	32 8.0%	402 100.0%				
Hausa	4 16.7%	12 50.0%	2 8.3%		6 25.0%	24 100.0%	21.0	8.446	12	.749
Igbo	4 8.7%	30 65.2%	4 8.7%	2 4.3%	6 13.0%	46 100.0%				
Others	4 14.3%	22 78.6%	2 7.1%			28 100.0%				
Total	**48** **9.6%**	**352** **70.4%**	**42** **8.4%**	**14** **2.8%**	**44** **8.8%**	**500** **100.0%**				

$X^2 = 21.0$; $df = 10$; $p < .05$.

It is clear from Table 5 that there is no significant relationship between mothers' ethnic group and perceived cause of convulsion. For instance, 8.5% of Yoruba respondents perceived preternatural factors as the cause of convulsion in these children. The percentage of Hausa and Igbo respondents with similar perceptions was 8.3% and 8.7% respectively. The limitation of the analysis related to this table is that ethnic groups other than the Yoruba are disproportionately under-represented, and the table may not reflect the views and attitudes of most members of other groups. As such, comparing these groups on the basis of the data in Table 5 would be misleading. It is thus better to assume, in the present analysis, that ethnic affiliation of respondents does not have consistent association with their perceived causes of convulsion among children.

Table 6 reveals that 54.4% of the respondents gave unconsciousness and tightening of teeth as indicators of convulsion among children. Those who identified high temperature, feeling cold and loss of appetite as signs and symptoms of the condition constitute 38%. A female interviewee corroborated those respondents' views when she commented:

> The first sign was that my son started feeling very cold and then at certain point felt hot and cried a lot; he was also finding it difficult to eat. He started losing weight and was sweating so much. He looked pale and weak, his eyes turned yellow almost as much as his urine. When the convulsive fits started he became unconscious and began to shiver and all of a sudden he was very stiff and hot, rolling his eyeball. His jaws were locked; I was scared to death.

Those who identified weakness and vomiting as signs and symptoms constituted 2.8%.

Table 6. Distribution of respondents by signs and symptoms of convulsion

Categories	Frequency	%
No response	24	4.8
High temperature, cold, loss of appetite	190	38.0
Unconsciousness and tightening of teeth	272	54.4
Weakness and vomiting	14	2.8
Total	**500**	**100.0**

Table 7 shows that a large percentage of mothers (18.0%) were ignorant about the consequences of convulsion. It is possible that these respondents have either not directly experienced convulsions in children or their children did not manifest consequences after the convulsive episode. Of respondents, 48.0% noted that convulsion among children could lead to death.

Table 7. Distribution of respondents by known consequences of convulsions

Categories	Frequency	%
No response	90	18.0
Leads to death	240	48.0
Affects child's brain	60	12.0
Disability	110	22.0
Total	**500**	**100.0**

Other consequences identified included disability, mentioned by 22% of respondents, and effect on the child's brain, mentioned by 12%.

Treatment pathways usually start with home remedies, after which the patient either goes to a babalawo (indigenous medicine man/spiritualist) or to the hospital when all other attempts fail (Ahorlu et al. 1997; McCombie 1996). The present study argues that avoidable delays in seeking care from facilities with relatively better equipment than most homes has implications for high under-five mortality. For instance, a woman interviewee narrated how her daughter died as a result of delay in seeking adequate medical care occasioned by bad advice:

> When my daughter had convulsion, my mother-in-law who stays with us suggested I treat her with my own urine. She insisted that the treatment was efficacious. Urine was given to the child to drink (forcefully though, because she was still unconscious) and the remainder was poured on her and also used in massaging her stiff body…but when the convulsion persisted for three consecutive days, neighbours advised I take her to the hospital. I did but eventually lost the baby the same evening when her condition relapsed.

Another respondent had an entirely different experience; she commented:

> Among my three children, only one had convulsion on three different occasions before his fifth birthday. The first aid I used included scent leaf, garlic, onions, pepper and at the same time I had to put spoon in his mouth to prevent teeth clenching. On each occasion, my child became normal once these therapies were administered and I have not had reason to seek an alternative treatment. Convulsion among children is natural and can be easily managed, at home, by mothers.

Corroborating the view of that interviewee, Table 8 shows that 15.2% of respondents stated that home medication is their preferred option for treating convulsion. However, what constitutes home medication may vary among individuals and groups and could be based on trial and error. As expected, the majority of respondents (49.6%) relied on hospitals for such treatment, given the notion in some quarters that orthodox medicine is superior to other systems (Nwokocha 2007).

Table 8 also shows that 29.6% and 5.6% of respondents identified traditional and spiritual healing, respectively, as treatment options. These figures indicate that approximately 50% of

respondents relied on hospital treatment while the remaining half depended on other options. It is pertinent to state that choice of treatment option is determined by a range of factors including ideational, social, cultural, economic, demographic and environmental, in time and space.

Table 8. Distribution of respondents by treatment options for convulsion

Categories	Frequency	%
Home medication	76	15.2
Traditional healers	148	29.6
Hospital	248	49.6
Spiritual	28	5.6
Total	**500**	**100.0**

Table 9 displays data on two main income-based residence types (high and low, according to average monthly income of adults in the household) as they impinge on treatment options. The table shows some association between income and treatment options for convulsion. For instance, 58.6% of high-income respondents relied on Western medicine and only 13.5% made use of traditional therapy, while 5.3% undertook self-medication.

Table 9. Distribution of respondents by income-based type of residence and treatment options for convulsion

Residence	Treatment options						Total	X^2 Crit	X^2 Cal	*df*	*p*
	No response	Western	Traditional	Self-medication	Spiritual	Others					
High-income	26 9.8%	156 58.6%	36 13.5%	14 5.3%	4 1.5%	30 11.3%	266 100.0%	11.1	23.130	5	000
Low-income	34 14.5%	68 29.1%	66 28.2%	22 9.4%	8 3.4%	36 15.4%	234 100.0%				
Total	**60** **12.0%**	**224** **44.8%**	**102** **20.4%**	**36** **7.2%**	**12** **2.4%**	**66** **13.2%**	**500** **100.0%**				

$X^2 = 11.1$; $df = 5$; $p < .05$.

Among low-income respondents, Table 9 indicates that 29.1%, about half the percentage of high-income respondents, stated they used Western therapy in treating their children's condition. Those who relied on traditional medicine constituted 28.2% of low-income respondents. Thus respondents in this income group are almost equally divided between Western and traditional medical interventions.

The coefficient in Table 10 shows that the interactive predictive effects of age, education, occupation, residence, religion, ethnic group, type of marriage and marital status of mothers on their treatment options is significant at $f = 12.652$; $p = .023$. The multiple regression showed $R = .164$; $R2 = .027$. This means that jointly, the independent variables accounted for a 27% variance on mothers' treatment options.

However, when examined individually, some of the variables were not significant. Mother's age ($B = .006$, $p = .023$), education ($B = .100$, $p = 0.000$), occupation ($B = .013$, $p = 0.054$) and marital

status ($B = .026$, $p = 0.041$) were not significantly related to treatment options. This means that the choice of treatment is better understood when examined against the backdrop of combined effects of independent variables than individually, as shown in Table 10, because some of them may not indicate a significant predictive strength.

Table 10. Multiple regression showing the joint and independent predictive strength of the independent variables on treatment options

Variables	R	R2	B	B	T	P	f	Sig
Age	.164	.027	4.034E-02	.006	.088	0.023		
Education			1.052	.100	1.058	0.000		
Occupation			5.635E-02	.013	.163	0.054		
Residence			2.778	.146	1.812	.071	12.652	.023
Religion			1.435	.089	1.112	.267		
Ethnic Group			-.283	-.026	-.378	.706		
Type of marriage			.875	.046	.590	.556		
Marital status			.470	.026	.403	0.041		

Conclusion

This study has contributed in advancing knowledge related to convulsion among under-five children and establishes that several factors affect the role of mothers in its treatment. It has become clear that male domination as it affects critical decision making during emergencies related to child health is inconsistent with present-day reality. The study argues quite forcefully that reduction in childhood deaths and in particular those associated with convulsion can be achieved with socio-economic and cultural empowerment of women. That way, mothers are able to promptly identify signs and symptoms of convulsion that are central to prevention and/or treatment efforts on one hand, and on the other prompt life-saving decisions during emergencies without necessarily depending on their absent husbands.

It has become necessary for Nigeria to attain significant reductions in the infant and childhood mortality rate in view of the present fertility decline in most communities. Without such reduction, individuals and communities may revert to high fertility as a means of ensuring that families have young members who will eventually replace the aged. The contradiction wherein improvement in medicine does not translate to mortality reduction, in particular among children, calls for deeper investigation and efforts to avert a demographic transition that would likely undermine improvement in societies that are already gasping for developmental breath.

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