



Factors Influencing Choice of Medical Treatment Options among Rural People in Selected Communities in Imo State, Nigeria

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Authors' contributions

This work was carried out in collaboration between all authors. Author OOO designed the study, wrote the protocol and wrote the first draft of the manuscript and managed literature searches. Authors CUN, JCA performed the statistical analysis, managed the analyses of the study and literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Aim: Choice of medical treatment option, in the event of illness, is a critical factor in determining the fate of a patient. It is influenced by several factors. The aim of this paper, therefore, is: To determine the exact factors that influence the choice, by rural dwellers, of medical treatment options in the event of illness.

Study Design: Sixty-four (64) randomly selected rural communities in Imo State, Nigeria, were

used in the study. A total of five hundred and forty (540) questionnaires were distributed, out of which five hundred were returned.

Setting of the Study: Sixty - four communities in Imo State of Nigeria.

Methodology: Considering the fact that the data used were frequency data, with the categories of the dependent variable (choice of medical treatment options) more than two (2) Which did not have a natural ordering, the multinomial logistic regression model was adopted in the analysis.

Results: The result of the analysis showed that educational qualification and affinity for tradition were the major factors that affected choice of medical treatment options. Other factors were income and gender. The study also revealed that of the three treatment options implicated in the study, modern treatment was the most preferred in all forms of illness; except in fracture, where native treatment was most preferred. The treatment options were chosen mostly on basis of their perceived relative efficacy.

Conclusion: The three treatment options need to be given adequate consideration in our medical system, since each has its area of relative strength or efficacy. In particular, collaboration by the various categories of health practitioners should be encouraged to enhance the efficacy of the nation's health care system.

Keywords: Choice; medical treatment options; rural people; health culture; socio-cultural factors.

1. INTRODUCTION

Every society, ancient or modern, has a health culture which, among other things, determines the members' perceptions and approaches to their health problems. This is so, because health is generally acknowledged as wealth. This implies that only the healthy can work to generate various forms of wealth in society.

Like the larger culture, health culture varies from one society to another according to the differences in the social, economic, geographical, political and psychological profiles of societies. Health culture is defined as "...a systematic attempt to explain and treat sickness and to maintain health. Health cultures are a component of the larger culture or tradition of a people and may be a popular or folk system, or a technical or scientific one" [1]. Generally, however, the health culture of any society embodies all health-related aspects of the people's life: their *modus vivendi*, their food items and how these are produced and consumed, their environmental conditions or ecosystem, their state of well-being, their belief system, their definitions and perception of ill-health and the related preventive and therapeutic measures, their moral ethics, business life, philosophy of life, etc. The health culture of the developed nations borders largely on science and modern technology, while that of developing nations, such as Nigeria, is an admixture of tradition and science.

In all societies, past and present, an increasing number of researches has documented associations between socio-cultural factors and

health [2,3]. More elaborately, [4] stated that "cultural differences affect patients' attitudes about medical care and their ability to understand, manage and cope with the cause of an illness, the meaning of diagnosis and the consequences of medical treatment". This implies that socio-cultural factors directly or indirectly influence health traditions and practices. By logical extension, the same factors influence the choice of treatment or place of treatment in the event of ill-health.

As already noted, literature in medical research and medical sociology are replete with facts establishing the relationship between a society's culture and health or illness [5]. Shared the same view when they stated that the way people make sense of illness is in part culturally determined, and that existing beliefs and presuppositions shared by a cultural knowledge regarding illness play a significant role in shaping an understanding of newly emerging illness in any given culture. With regard to some African - Americans, [6] averred that "spiritual beliefs are important in understanding and coping with illness and may provide a framework within which treatment decisions are made". Similarly, [7], in their own empirical study using Asian and European students, reported a significant association between cultural background and beliefs about the benefits and dangers of medicines.

It has also been indicated through research that an individual's or a group's beliefs, perception and interpretation of an illness tend to influence the individual's or group's treatment approaches

[5]. Generally, most of the literature reviewed showed that health behaviours are influenced by a multiplicity of factors, including culture, nature or biology [8], faith [9] and personality.

In contemporary Nigerian communities, there are three known and dominant options of sources of treatment available to the people when they take ill. These include the Orthodox or Western medical option, the Folk or Traditional medical option and the Prayer or Spiritual option. The target communities of this study are largely rural and characterized by these three types of health-care delivery systems. The exact factors which influence the choice of any of these at the expense of the others, especially among rural dwellers in Imo State, have not been scientifically determined, hence this study.

It is common knowledge that health problems, especially among rural dwellers, are sometimes compounded by uninformed or inappropriate choices of place of treatment. In a meeting the Academy Health conducted on behalf of the Robert Wood Johnson Foundation in February 2007, it was reported that "most people believe that patients should have the authority to make decisions regarding their primary care physicians, hospitals and health plans, yet there is little information available to help consumers make informed decisions" [10]. In some extreme cases, this has engendered fatal consequences. Thus, the choice of treatment, or of place of treatment, can make a difference between the life and death of a patient. Against the background of these problems, the researchers formulated the following aims and objectives:

Aim: To determine the exact factors that influence choice of medical treatment options among rural dwellers of selected communities in Imo State of Nigeria.

Specific Objectives: The specific objectives of the study are to:

- I. Determine the medical treatment options available to the people.
- II. Determine the factors that influence their choices of specific treatment options.

Abundant research work has established a relationship between socio-cultural factors and health. This implies that a people's social and cultural life influences their perception of illnesses and treatment approaches. This fact notwithstanding, there still exist explanatory gaps

in available literature on why, even within a given cultural context, the people will prefer one treatment option to others. The study will provide this missing explanation, especially with regard to the target communities in Imo State of Nigeria. Thus, the study will add a new dimension to the corpus of literature explaining health-related behaviours.

The study will also enhance the comprehension of certain health-related behaviours among public and other rural health workers, as well as provide a scientific basis for making well-informed policy decisions in the subject area. Reflecting on a similar research work carried out in China, [11] underscored this fact that "understanding the patient's choice of medical provider in rural health-care delivery system is of considerable policy significance". Furthermore, the study will enable the rural people under study to make better-informed choice of medical treatment options in the event of illness. It will also enhance the framework for training health-care practitioners, orthodox and traditional.

From the academic point of view, this work will serve as a reliable reference material to students, scholars and researchers involved in similar or related research work, while any perceived gaps in it may stimulate further research by other interested researchers in the subject area.

2. DATA AND METHODS

2.1 Data

Data for the study were generated from Researchers'-Made Questionnaire (RMQ) distributed to sixty-four randomly selected rural communities out of six hundred and thirty-seven autonomous communities in Imo State, Nigeria. A total of five hundred and forty (540) copies of the questionnaire were distributed across the three senatorial zones of the State, out of which five hundred (500) or 92.6% were filled and returned. The questionnaire were designed to elicit information from the respondents on some demographic, socio-cultural and economic factors such as gender, educational qualification, religion, occupation, tradition (Belief in reincarnation and in 'Ogbanje' and attitude towards masquerade as a necessary part of Igbo culture) and income which are said to influence their choices of medical treatment options

(Modern Treatment, Native Treatment and Spiritual Treatment).

A two-stage stratified random sampling technique was employed, where the first stage was “Local Government Areas” (two “Local Governments Areas” from each of the three senatorial zones were randomly selected) and the “communities” the second stage. The 64 autonomous communities studied constituted approximately 10% of the 637 autonomous communities in the State. The autonomous communities were randomly selected based on the proportion of autonomous communities in the Local Government Areas selected. The respondents were economically active adults, aged 20-64, who basically make health decisions in their respective families.

To ensure data accuracy, quality and reliability, enumerators, who were Higher National Diploma graduates in Statistics with experience in field surveys, were employed as research assistants. The sample size was calculated with recourse to the estimated proportion approach [12], since the total population of economically active adults in the three senatorial zones was not known. However, we made use of projected proportion of economically active adults from the 2006 Nigerian census [13] and hence, the sample size was calculated from the formula;

$$n = \left(\frac{Z_{\alpha}}{e} \right)^2 p(1 - p)$$

Where;

n = Sample size

Z = Value of standard variate corresponding to α

e = Acceptance error in a given situation.

p = Estimated proportion or incidence of cases in the population.

Using the above formula with $\alpha = 10\%$, $e = 0.035$ and $p = 0.418$, we obtained $n = 540$.

Considering the facts that the data were frequency (categorical) data and that the categories of the dependent variable (choice of medical treatment options) were more than two (2) and did not have a natural ordering, multinomial logistic regression model was adopted. SPSS version 20 was used in the analysis. The advantages of fitting one multinomial model over fitting several binary models are that there is one likelihood ratio chi-

square, χ^2 for fit of the entire model and there is an opportunity to test hypothesis about equality of slopes.

2.2 Operationalization of Concepts

2.2.1 Socio-cultural factors

These are factors which derive their existence from or border on social life. In their comprehensive sense, they include social life, cultural, psychological and economic attributes of individuals or of people that tend to predispose them to certain forms of behaviour, or identify them as social categories. Examples employed in this study include age, gender, marital status, educational qualification, religious affiliation, religious affinity, traditional affinity and family size. In this study, socio-cultural and socio-demographic factors are used interchangeably

2.2.2 Health culture

This is the aspect of a society’s culture that has implications for the life and health of the people. The indices include state of well-being, mode of living, food items and how they are produced and consumed, belief system, definitions and perceptions of ill-health and the concomitant preventive and therapeutic measures, etc. In this study, the focus was on illnesses and treatment options. Fifteen types of illnesses, ranging from headache to HIV/AIDS and three major treatment options (traditional/native, modern/orthodox and spiritual healing/prayer house) were involved in the study.

2.2.3 “Ogbanje”

This is an Igbo word, which describes a form of abnormal or strange behaviour believed to have a spiritual origin.

2.2.4 Variables

Two categories of variables were employed in the study, namely: Dependent and independent variables. The dependent variables were the three treatment options: Traditional/native, orthodox/modern and supernatural/prayer options. The independent variables were gender, educational qualification, religion, occupation, traditional affinity (belief in re-incarnation and in ‘Ogbanje’ and disposition towards masquerade) and income.

3. RESULTS

Table 1 gives the estimates of β for Daily Income (DI), Educational Qualification (EDQ), Traditional Belief in Reincarnation (TBR), Gender (G) and Disposition Toward Masquerade (DTM) out of eight independent variables, that are significant either in whole or as interaction ($\alpha = .05$) using Wald's chi-square statistic. Others were dropped from the model because they were not significant. The reason for their exclusion was that they had minimal or no influence on the choice of medical treatment options. The intercept was also significant in the choice of native drug.

With Wald's estimates, we identified EDQ and TMD ($\alpha = .01$) as the major factors that influenced choice of medical treatment options and these were followed by G (male), DI and TBR ($\alpha = .05$).

Also, Table 1 shows that there was significant interaction between those having at least a First School Living Certificate (EDQ=2) and those that considered Traditional Masquerade Displays (TMD) as a necessary aspect of Igbo culture ($\alpha = .05$). Similarly, there was significant interaction between Traditional Belief in Reincarnation (TBR) and Daily Income (DI) of between ₦1,001 and ₦1,500.

Furthermore, Table 1 reveals that the logistic coefficient (β) for each predictor variable or interaction and for each alternative category of

the outcome variable was greater than 1. The implication of this is that the expected amount of change in the Logit for each one unit change in the predictor or its interaction is greater than 1. Equally, the expected β ($\text{Exp } \beta$) and the odds ratio associated with each predictor or its interaction had values greater than 1. This indicates that the risk of the outcome falling in the comparison (Modern Treatment or Native Treatment) group relative to the risk of the outcome falling in the referent group (Spiritual Healing) increases as the variable increases. In other words, the comparison outcome is more likely. For example, TMD = 1 ("Yes" to Traditional Masquerade Displays as important factor influencing choice of medical treatment options in the case of Native Treatment) with $\text{Exp}(\beta) = 3.06$ implies that a unit increase in TMD = 1 increases the odds of an individual choosing native treatment from 1 to 3.06. Similarly, a unit increase in EDQ = 3 increases odds of an individual choosing modern treatment from 1 to 3.36×10^8 (a very high likely outcome).

Having identified the factors that influence choice of medical treatment options in Table 1, we used Nagelkerke R^2 and Cox & Snell R^2 in Table 2 to determine the magnitude of the effect. Here, the values Nagelkerke R^2 (0.352) and Cox & Snell R^2 (0.286) indicate that the predictors have some contribution in predicting the outcome variable.

Table 1. Estimates of the multinomial logistic regression model

Value	β	S.E	Wald's χ^2	df	P-value	$\text{Exp}(\beta)$
Modern treatment						
EDQ = 1	20.987	1.400	224.838	1	0.000	1.30×10^9
EDQ = 2	20.856	0.939	493.450	1	0.000	1.14×10^9
EDQ = 3	19.632	0.749	686.606	1	0.000	3.36×10^8
EDQ = 4	19.782	0.763	672.847	1	0.000	3.90×10^8
EDQ = 5	19865	0.730	741.367	1	0.000	4.24×10^8
TBR*DI=3	1.464	0.707	4.284	1	0.038	4.32
Native treatment						
Intercept	-21.571	1.495	208.072	1	0.000	
G = 1	1.022	0.439	5.407	1	0.020	2.78
TMD=1	1.119	0.461	5.887	1	0.015	3.06
EDQ = 2*TMD=1	22.836	1.539	220.295	1	0.000	8.27×10^9
EDQ = 2*TMD=2	21.888	1.675	170.764	1	0.000	3.20×10^9
EDQ = 3*TMD=1	21.405	1.368	244.754	1	0.000	1.98×10^9
EDQ = 3*TMD=2	21.326	1.474	209.376	1	0.000	1.83×10^9
EDQ = 4*TMD=1	20.301	1.571	166.963	1	0.000	6.56×10^8
EDQ = 4*TMD=2	20.636	1.492	191.214	1	0.000	9.16×10^8
EDQ = 5*TMD=1	22.573	1.466	236.947	1	0.000	6.36×10^9
EDQ = 5*TMD=2	20.229	1.402	208.053	1	0.000	6.10×10^8
EDQ = 6*TMD=1	21.526	1.913	126.651	1	0.000	2.23×10^9

Table 2 also shows that the Pearson goodness-of-fit test $\chi^2(580) = 617.53$, ($\alpha = .05$) is not significant, indicating that the predicted values were not significantly different from the observed values. In other words, the model is a good-fit for our data.

Table 2. Goodness-of-fit

	χ^2	Df	P-value
Pearson	617.53	580	0.136
Deviance	438.24	580	1.000
Pseudo R- square			
Cox & Snell		Nagelkerke	
0.286		0.352	

Another support to the fit of the model is given in Table 3. Table 3 reveals that the model fit $\chi^2(58) = 148.058$, ($\alpha = .001$) is significant; which indicates that our full model predicts better or more accurately than the null model.

Table 3. Model fitting information

Model	Model fitting criteria	Likelihood ratio tests		
	-2 Log likelihood	Chi-square	df	P-value
Intercept only	648.306	148.058	58	0.000
Final	500.247			

4. DISCUSSION

The results of the study identified educational qualification and affinity for tradition (masquerade consideration) as major factors that influenced choice of medical treatment options in the population of study. Other factors were gender and income. The findings are in line with previous studies such as those of [2,14,15] and [16].

It was observed from the study that even the highly educated still had affinity for tradition in their choice of medical treatment, although the number is, understandably, minimal. Also revealed in the study, was that majority of the people (64.4%) took to their treatment options because of their perceived relative efficacy of the options. This finding cut across gender and educational qualification.

Also the study showed that the male (61.46%) tended to be more inclined to native treatment than the female (38.54%). Conversely, the

female (64.18%) were more inclined to spiritual healings than the male (35.82%), a result which seems to imply that women are more spiritually oriented than men. However, on the average both the male and the female preferred modern treatment to native treatment and spiritual healing.

Another fascinating finding of the study was that modern source of treatment had the highest number of respondents in fourteen (14) out of fifteen (15) types of illnesses studied. Native treatment had the highest number in fracture, indicating that, with regard to the treatment of fracture, the people had more confidence in native treatment than in the modern option. It is also revealing that for stroke, native treatment recorded marginally less number of respondents than modern treatment (200 against 209 or 40.73% against 42.6% respectively) and this was also the case for spiritual healing, which, in relation to mental disorder, had one hundred and ninety-one (191) respondents or 38.7% as against two hundred and seventeen (217) or 44% for the modern option. The implication of all these findings is that the three treatment options are available and practised in the community.

Finally, the study showed that the risk of the outcome (predictors) falling in the comparison (Modern Treatment or Native Treatment) group relative to the risk of the outcome (predictors) falling in the referent group (spiritual healing) increases as the variable increases. In other words, the comparison outcome is more likely.

5. CONCLUSION

This study investigated the factors that influence choice of medical treatment options among some rural dwellers in Imo State of Nigeria. Choice of medical treatment options was identified in the study as a critical health behaviour that can make a great deal of difference between life and death. The study focused on three medical treatment options, namely, Western or Orthodox, Traditional or Folk and Spiritual or Faith methods, and revealed, among other findings, that education and traditional affinity mostly influenced the people's choice of medical treatment options.

Although both the male and female respondents preferred orthodox treatment to the traditional and spiritual options, the three treatment options enjoy varied degrees of patronage in the communities.

On basis of the findings, the study recommends:

- (i) Provision of more educational opportunities in general and health education, in particular, to the communities in order to improve their health -decision-making process.
- (ii) Greater government recognition of the three treatment options, since this and other studies have shown that the three play varied degrees of role in the nation's medical system.
- (iii) Replacement of the on-going conflicts among the practitioners of the three options with mutual accommodation and synergy in order to guarantee a holistic or comprehensive medical system with the capacity to handle all forms of illnesses.

Although the data used in the study were collected from Imo State, Nigeria, the findings provide an insight into the health- behavioural trend and characteristics of rural people in sub-Saharan Africa and other developing countries. For instance, illnesses such as malaria, stroke and mental disorder are common in sub-Saharan Africa. According to the findings of this study, patients, in seeking treatment for these illnesses, patronize modern treatment, native treatment and spiritual healing, depending on their perceived relative efficacy.

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COMPETING INTERESTS

The authors do solemnly declare that there are no competing interests in this paper.

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