

## Beliefs about the cause of schizophrenia among caregivers in Midwestern Nigeria

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### Abstract

Schizophrenia is a devastating illness with a chronic and relapsing course. While Western countries may endorse, biological and psychosocial causes more commonly than supernatural causes, non-western cultures like Nigeria in contrast, tend to endorse supernatural causes. Belief in supernatural causes has been reported to have consequences for treatment seeking behavior. This study aimed to examine the causes of schizophrenia reported by family members of outpatients with schizophrenia in a neuropsychiatric hospital in Midwestern Nigeria. In this study, we recruited a convenient sample of 200 consecutive caregivers of patients visiting the outpatient department of the Psychiatric Hospital, Benin City, Nigeria. These primary caregivers were unpaid relatives who provided support to patients. The patients were service users who fulfilled the diagnostic criteria of the International Classification of Disease [ICD-10; World Health Organization 1993] for schizophrenia and had been on treatment for at least two years. Majority (72.0%) of caregivers endorsed supernatural causes as most important in the etiology of schizophrenia, while 28.0% endorsed natural causes. Every participant without formal education endorsed supernatural attribution. In our study, it was evident that participants embraced multiple causal attributions for schizophrenia.

### Introduction

Schizophrenia is a devastating illness which exacts significant costs on persons with schizophrenia, their family members and the society.<sup>1</sup> Pathways to accessing health care are believed to be influenced by beliefs of family members about the causation of the illness.<sup>2,3</sup> Beliefs about causation are also associated with attitudes to persons with mental illnesses.<sup>4</sup> In Western countries, biological and psychosocial causes are more commonly endorsed than supernatural

causes.<sup>5-7</sup> In contrast, non-western cultures, tend to endorse supernatural causes.<sup>3,7</sup>

A World Health Organization report states that the beliefs and attitudes held by members of community may influence many facets of mental health care. It was also noted that a favorable social environment contributes to improvement and reintegration while an unfavorable one may encourage stigma against persons with mental illness.<sup>8</sup> Communities are now viewed as a foundational aspect of mental health systems growth and play an important part in ensuring that persons with mental disabilities receive care.<sup>9</sup> It is known that successful treatment and rehabilitation of persons with mental illnesses is influenced by community attitudes and belief.<sup>9</sup> Many belief systems held by individuals are based on the preponderant ideas in a society.<sup>10,11</sup>

Observations from a community based study in South Western Nigeria showed that 48.9% of the survey population endorsed supernatural causation of mental disorders compared to 30.4% and 43.9% who endorsed biological and psychosocial causation respectively.<sup>3</sup> A survey on beliefs of relatives of persons with schizophrenia from Bali, a developing country, showed that 64% endorsed supernatural causation as being most important.<sup>2</sup> Non-receipt of psychiatric care has been found to be associated with supernatural causal attributions by family members.<sup>2</sup> In Nigeria, it is believed that 70% of persons with mental disorders access care from unorthodox sources whose beliefs about the cause of the illness may be similar to those of individuals in the society.<sup>12</sup>

Adequate treatment and rehabilitation of persons with schizophrenia is important in mitigating the enormous costs inflicted on their caregivers. Since beliefs about causation influence help seeking behavior, treatment and duration of untreated psychosis,<sup>9</sup> it is important to examine causal attributions among caregivers who likely shall influence the type of treatment sought.<sup>2</sup> In this study, we set out to examine the beliefs held by caregivers who were involved in the day to day life of persons with schizophrenia who were outpatients of a neuropsychiatric hospital in Midwestern Nigeria.

### Materials and Methods

This was a descriptive cross-sectional study conducted at the Outpatient Department of the Psychiatric Hospital, Benin City, Edo State in South-South Nigeria. The center provides psychiatric services to Edo, Delta and neighboring

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Key words: Schizophrenia, beliefs, causes, caregivers, attribution.

Acknowledgements: the authors acknowledge the immense contribution of Professor Olufemi Morakinyo to the conceptualization and supervision of this work. Sadly, he has since passed on and is sorely missed.

Contributions: OI, conceived the idea for the study, data acquisition, analysis and interpretation, drafting and revising the paper; EO, data analysis and interpretation, drafting and revising the paper. Both authors approved the final version

Conflict of interest: the authors declare no potential conflict of interest.

Received for publication: 19 November 2016.  
Revision received: 24 March 2017  
Accepted for publication: 24 March 2017.

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Mental Illness 2017; 9:6983  
doi:10.4081/mi.2017.6983

states and is government owned.

Participants in the study were caregivers of patients with schizophrenia who were consecutively recruited from the outpatient department of the hospital over a period of four months. A convenient sample size of 200 caregivers of 200 outpatients with schizophrenia was used for this study. The patients were service users who fulfilled the diagnostic criteria of the International Classification of Disease {(ICD-10) (WHO 1993)} for schizophrenia and who had been on treatment for at least two years. The primary caregiver for each patient was enrolled in the study. Such caregivers were unpaid relatives who provided support to the patient from time to time.

A semi-structured questionnaire inquiring about socio-demographic data like age, sex, marital status, religion, highest education obtained and occupation was administered.

*Causal attribution:* Possible causations attributed by respondents were assessed by responses to a 7-item questionnaire listing probable causes of schizophrenia. The causes included supernatural factors (witchcraft/sorcery/evil spirits, God's will/Satan's

work) and biological factors (heredity, brain injury). Using a 4-point likert scale (*not a cause, rarely a cause, likely a cause and definitely a cause*), the respondents were asked to indicate how relevant they considered each potential cause to be. Responses of *Likely a cause* and *definitely a cause* are counted as endorsing a cause. Relatives were also asked to indicate what they considered to be the most important cause of the illness among the items which they chose.

Informed consents were obtained from the participants after the aims and objectives of the study had been explained to them. The Ethics and Research Committee of the Psychiatric Hospital, Benin City approved the study protocol.

### Data analysis

Data were analyzed using the Statistical Package for Social Sciences (SPSS) version 16. For ease of analysis, most of the variables were grouped. Results were calculated as frequencies, means, median and mode. Group's comparisons were by chi-square test and t test. Significance level was set at  $P < 0.05$ .

### Results

A total of 200 caregivers were interviewed, consisting of 102 (51.0%) males and 98 (49.0%) females (Table 1). The mean age of the respondents was  $52.3 \pm 15.2$  years and majority (80%) were aged 65 years or less. Christians constituted 93.5% of the caregiver population while majority (58.5%) were married. One hundred and sixty seven caregivers (83.5%) had been formally educated while 165 (82.5%) of them were unskilled workers. The mean age of patients with schizophrenia was  $38.02 \pm 12.5$  years while more than half (56%) of them were males. Majority (66.5%) of the patients were single and more than two thirds (70.5%) had more than 6 years of formal education.

Pattern of causations endorsed by caregivers is illustrated in Table 2. Majority (72.0%) of caregivers endorsed supernatural causes as most important in the etiology of schizophrenia, while 28.0% endorsed natural causes. The most frequently endorsed causation was *Satan's work* (59.5%) followed by brain injury (52.5%), and curses from enemies (45.5%). The least commonly endorsed cause was hereditary factors (12.5%).

Tables 3 and 4 show the association between socio-demographic variables and beliefs in natural and supernatural causation. Majority of caregivers (68.5%) who

were widowed/divorced endorsed natural causations compared to 48.3% of those who were single and 48.7% of married caregivers ( $P = 0.043$ ). Most caregivers of males with schizophrenia (67%) endorsed a natural causation compared to 37.5% of care-

givers of females with schizophrenia ( $P < 0.0001$ ).

Associations exist between the marital status of the caregiver and endorsement of natural causation with the widowed/divorced being more likely to endorse natu-

**Table 1. Socio-demographic variables.**

Variables	Frequency (n=200)	Percentage
<b>Caregivers</b>		
Sex		
Male	102	51.0
Female	98	49.0
Age, years (mean= $52.3 \pm 15.2$ )		
18-40	51	25.5
40-65	109	54.5
>65	40	20.0
Marital status		
Single	29	14.5
Married	117	58.5
Widow/separated, divorced	54	27.0
Education		
No formal	33	16.5
Formal	167	83.5
Occupation		
Unemployed	13	6.5
Unskilled	165	82.5
Skilled	22	11.0
Religion		
Christianity	187	93.5
Islam	7	3.5
Others	6	3.0
<b>Individuals with schizophrenia</b>		
Age, years (mean $\pm$ SD= $38.0 \pm 12.5$ )		
20-40	128	64
41-65	69	34.5
>65	3	1.5
Sex		
Male	112	56.0
Female	87	43.5
Marital status		
Single	133	66.5
Married	25	12.5
Widowed/divorced	42	21.0
Years of education		
$\leq 6$ years	43	21.5
>6 years	157	70.5

**Table 2. Pattern of causations endorsed by caregivers.**

Factors	Frequency	Percentage
<b>Natural factors</b>		
Brain injury	105	52.5
Hereditary factors	25	12.5
<b>Supernatural factors</b>		
Curses from enemies	91	45.5
Witchcraft	88	44.0
Reincarnation	27	13.5
God's will	36	18.0
Satan's work	119	59.5

ral causes. Participants who had no formal education (100%) endorsed supernatural causation compared to 84% of those with formal education (P=0.015).

### Discussion

To the best of our knowledge, this is the first study in Midwestern Nigeria addressing causal attributions among relatives of persons with schizophrenia. Previous studies have examined the beliefs about the causes of mental illness among community members in other parts of Nigeria.<sup>3,4,9,13</sup> Our study confirms findings from studies in other parts of Nigeria where supernatural attributions was more predominant than biological/natural attribution among study participants.<sup>3,14,15</sup>

Although a study in South Western Nigeria, found associations between caring for the mentally ill and endorsing natural causation,<sup>3</sup> our study revealed a prevalent belief in supernatural causation among caregivers. Supernatural influences such as Satan's work and curses laid by enemies were held to be largely responsible for schizophrenia. Other causations endorsed were natural factors such as brain injury and heredity. This is in keeping with findings from other studies suggesting that most persons in developing countries attribute mental illnesses to spiritual causes.<sup>16,17</sup> Similar to the study by Adebawale and Ogunlesi,<sup>14</sup> the belief in supernatural causation was most acceptable to caregivers. Interestingly, their study also revealed that patients with biological attributions were more compliant with treatment than those with other beliefs systems. The predominant belief in supernatural causation was also similar to reports from other studies examining causal attributions in the general population in South Western Nigeria.<sup>3,13</sup> A major implication of the belief in supernatural attribution is a delay in help seeking because there is an increased likelihood of accessing care from spiritual healers.<sup>12,18</sup> In their study, Adeosun *et al.*<sup>19</sup> observed that more than two thirds of patients in their study sought help from spiritual healers in the first step of the help seeking process with only about 30% seeking help from physicians first. This finding is similar to that from other studies in other Nigerian communities.<sup>20,21</sup> Perhaps, this is because spiritual healers are present in every community. Their treatment methods align closely with the beliefs held by community members and is culturally acceptable.<sup>15</sup> This eventually leads to a longer duration of untreated psychosis which has been shown to worsen the prognosis of an already severe illness.<sup>18</sup> Similarly, the study

**Table 3. Associations between socio-demographic variables and natural causation.**

Variables	Natural causation		χ <sup>2</sup>	Df	P-value
	Endorsed	Not endorsed			
<b>Caregivers</b>					
Age (years)			1.392	198	0.166
Mean±SD	53.6±15.6	50.7±14.5			
Sex			0.348	1	0.555
Male	53 (52.0)	49 (48.0)			
Female	55 (56.1)	43 (43.9)			
Marital status			6.279	2	0.043
Single	14 (48.3)	15 (51.7)			
Married	57 (48.7)	60 (51.3)			
Widowed	37 (68.5)	17 (31.5)			
Education			3.394	1	0.065
No formal	13 (39.4)	20 (60.6)			
Formal	95 (56.9)	72 (43.1)			
Occupation			1.298	1	0.254
Unemployed	99 (52.9)	88 (47.1)			
Employed	9 (69.2)	4 (30.8)			
<b>Individuals with schizophrenia</b>					
Age (years)			1.431	198	0.473
Mean age±SD	39.2±12.7	36.6±12.2			
Sex			17.223	1	<0.0001
Male	75 (67.0)	37 (33.0)			
Female	33 (37.5)	55 (62.5)			
Occupation			0.281	1	0.596
Unemployed	57 (52.3)	52 (47.7)			
Employed	51 (56.0)	40 (44.0)			

**Table 4. Association between socio-demographic variables and supernatural causation..**

Variables	Supernatural causation		χ <sup>2</sup>	Df	P-value
	Endorsed	Not endorsed			
<b>Caregivers</b>					
Age (years)			1.645	198	0.102
Mean±SD	51.6±15.7	56.8±9.6			
Sex			3.210	1	0.073
Male	93 (91.2)	9 (8.8)			
Female	81 (82.7)	17 (17.3)			
Marital status			5.419	1	0.067
Single	29 (100.0)	0 (0.0)			
Married	98 (83.8)	19 (16.2)			
Widowed	164 (87.7)	7 (13.0)			
Education			5.905	1	0.015*
No formal	33 (100.0)	0 (0.0)			
Formal	141 (84.4)	26 (15.6)			
Occupation			1.248	1	0.383*
Unemployed	10 (76.9)	3 (23.1)			
Employed	164 (87.7)	23 (12.3)			
<b>Individuals with schizophrenia</b>					
Age (years)			2.123	198	0.035
Mean age±SD	37.29	42.81			
Sex			0.372	1	0.542
Male	96 (85.7)	16 (14.3)			
Female	78 (88.6)	10 (11.4)			
Occupation			1.792	1	0.181
Unemployed	98 (89.9)	11 (10.1)			
Employed	76 (83.5)	15 (16.5)			

\*Statistically significant.

by Aghukwa in Northern Nigeria revealed that about 70% of respondents who endorsed supernatural attributions sought help from mental health professionals five years or later after the onset of the illness.<sup>21</sup> In contrast, that study also found that up to 68% of participants who endorsed medical causes stated that they sought a psychiatric consultation within six months after the illness began. Most of the caregivers endorsed multiple causation similar to what was found in some other studies.<sup>3,18</sup> This suggests that endorsing natural causes, does not exclude supernatural attribution. Belief in supernatural causation may result in a tendency to disregard orthodox treatment due to the belief that treatment would be ineffectual. Ayorinde *et al.*<sup>22</sup> found that traditional healers are regarded as providing the most acceptable mental health care. A cross cultural study,<sup>23</sup> comparing educated young persons from Britain and Nigeria, found that Nigerians believed in traditional/spiritual treatment. However, the Nigerians in that study believed conventional psychiatric treatment to be as useful as the British saw them to be.

Our study found that marital status of caregivers and the sex of the individuals with schizophrenia were associated with natural/biomedical attributions. Caregivers who were widowed/divorced were more likely to endorse natural causations compared to those who were single or married. This just reached significance level. Interestingly, in our study, caregivers of male patients with schizophrenia were more likely to endorse natural causations than caregivers of female patients. The reason for this is not clear. Perhaps it is a reflection of local beliefs that sons are more valuable than females. This may result in a greater willingness to expend out of pocket resources on the medical care needed to help them get well. It is possible that the belief in natural causation arose from seeing the male relative with schizophrenia get well after treatment.

Caregiver's educational status and mean age of individuals with schizophrenia was associated with belief in supernatural causation. In our study, caregivers without formal education endorsed supernatural attribution compared to 84.4% of those with formal education. Though, the endorsement of supernatural causes was expected in caregivers without formal education, it was surprising to note that majority of those with formal education also endorsed supernatural/non-medical causes. It appears that formal education while leading to increased endorsement of natural causes, did not have much effect on beliefs in supernatural causation. This is similar to finding in the study

from South Western Nigeria which found that supernatural attribution was unaffected by having formal education,<sup>3,23</sup> and this calls into question the widely held belief that formal/western education alters beliefs in supernatural causation. A study in Pakistan found that only 30% of the subjects with formal education in their study endorsed biomedical/ natural cause.<sup>15</sup> Still, this lends credence to the point that formal education may have some impact on beliefs about the causation of schizophrenia in this population. However, it should be noted that, Ikwuka and colleagues found that more educated participants in their study endorsed medical causes compared to the least educated. They also posit that acquisition of Western education leads to greater endorsement of medical/psychological attribution.

In some other studies, older persons were significantly more likely to endorse supernatural causation than younger persons.<sup>3,15</sup> Ikwuka *et al.*<sup>15</sup> argue that this may be attributed to a tendency to hold on to more traditional views as people age. In this study, the age of caregivers was not associated with attribution.

## Conclusions

The results of this study revealed that participants embraced multiple causal attributions for schizophrenia. Those with no formal education all embraced supernatural causation while majority of participants with formal education also embraced supernatural causation. This suggests that while formal education may not have had the expected impact with regards to changing beliefs about causation, it has had some effect. While caregivers of male patients, as well as caregivers of older persons with schizophrenia were also more likely to endorse natural causation, caregivers of female patients endorsed supernatural causation. Changing beliefs about schizophrenia will play an important role in reducing the duration of untreated psychosis and improving outcomes. While education and enlightenment campaigns have a role to play in changing beliefs and consequently attitudes to schizophrenia it is also important to improve access to treatment to ensure that treatment is received as early as possible. Orthodox health practitioners must strive to understand community beliefs and use them to help persons with mental illnesses. Community involvement in provision of mental health services has been strongly encouraged as it is believed that shifting services to the community can modify societal responses to persons with mental illness.<sup>8</sup> Collaboration with traditional healers may discourage unhealthy

treatment practices such as punishment and facilitate referral to mental health professionals.<sup>8</sup>

## Limitations and strengths

This study had some limitations. Firstly, this study examined causal attribution in caregivers of patients who attended the outpatient department of a psychiatric hospital. This lends value to the possibility that there may be social desirability bias. Another area that could be examined is the effects of causal attribution on stigma. This is an area that will require further study in this locality. Lastly, this study was conducted in Midwestern Nigeria and so care should be taken when generalizing the results from this study to other ethnic nationalities in Sub Saharan Africa. The strength of this study lies in its focus on schizophrenia which is a severe mental illness instead of mental illnesses in general.

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Questionnaire on Caregiver and patient beliefs about the causes of schizophrenia

Patient characteristics

Date

1. Patient's age \_\_\_\_\_
2. Patient's gender      Male\_\_\_\_                      Female\_\_\_\_
3. Occupation of patient: \_\_\_\_\_
4. Patient's Education
  1. No formal education \_\_\_\_\_
  2. Primary school \_\_\_\_\_
  3. Secondary education \_\_\_\_\_
  4. Post secondary education \_\_\_\_\_
5. Patient's Marital Status:
  1. Married \_\_\_\_\_
  2. Never married \_\_\_\_\_
  3. Separated \_\_\_\_\_
  4. Divorced \_\_\_\_\_
  5. Widowed \_\_\_\_\_
6. Religion:
  1. Christian \_\_\_\_\_
  2. Muslim \_\_\_\_\_
  3. Traditional \_\_\_\_\_
  4. Others \_\_\_\_\_
7. Whom does patient live with: \_\_\_\_\_

Caregiver characteristics

8. Caregiver's age \_\_\_\_\_
9. Caregiver's gender:      Male\_\_                      Female\_\_
10. Occupation of Care Giver \_\_\_\_\_
11. Level of Education of Care giver
  1. No formal education \_\_\_\_\_
  2. Primary school \_\_\_\_\_
  3. Secondary school \_\_\_\_\_
  4. Post secondary \_\_\_\_\_
12. Caregiver's marital status
  1. Married \_\_\_\_\_
  2. Single \_\_\_\_\_
  3. Separated \_\_\_\_\_
  4. Divorced \_\_\_\_\_
  5. Widow \_\_\_\_\_

13. Relationship of caregiver with patient

- |               |                   |
|---------------|-------------------|
| 1.Spouse ___  | 4.Grandparent ___ |
| 2.Sibling ___ | 5.Others ___      |
| 3.Parent ___  |                   |

14. No. of living children of Care Giver .....

15. Duration of illness \_\_\_\_\_

16. Duration of involvement in caregiving (approximate years) \_\_\_\_\_

17. Frequency of contact with patient \_\_\_\_\_

18. What is your view about the cause of this illness?(tick as many as apply)

- |  |         |        |
|--|---------|--------|
| i. Natural illness such as head injury                             | Yes ___ | No ___ |
| ii. Inherited from the family                                      | Yes ___ | No ___ |
| iii. God's punishment  | Yes ___ | No ___ |
| iv. God's will   | Yes ___ | No ___ |
| v. Satan's work  | Yes ___ | No ___ |
| vi. Curse from enemies   | Yes ___ | No ___ |
| vii. Witchcraft  | Yes ___ | No ___ |
| viii. Patient reincarnated from a person<br>with a similar illness | Yes ___ | No ___ |

19. Most important cause of illness \_\_\_\_\_