Afr. J Med. med. Sci. (1999) **28**, 35 - 41

Beliefs and knowledge about aetiology of mental illness among Nigerian psychiatric patients and their relatives

T.O. Adebowale, and A.O. Ogunlesi
Neuropsychiatric Hospital, Aro-Abeokuta, Nigeria

Summary
A survey of 70 insightful clinically stable out-patients with functional psychotic disorders and 70 accompanying relatives was carried out. They were interviewed about their beliefs concerning the cause of the illness, and their awareness of other possible aetiological factors. Relevant sociodemographic and clinical information were also elicited. Twelve (17.1%) patients and relatives, respectively, gave "medical" causal explanations; 16 (22.9%) patients and 13 (18.6%) relatives gave "psychosocial" causal explanations; 27 (38.6%) patients and 38 (54.3%) relatives were "uncertain" about the cause of their/relatives' illness (X^2 = 5.08; df = 3; P = 0.16). Relatives reported a greater relevance of "heredity" (X^2 = 11.58; P = 0.0006) and "supernatural" factors (X^2 = 4.72; P = 0.029) as other possible causal factors, than patients. Patients with previous psychiatric hospitalisation reported higher prevalence of "psychosocial' and "supernatural" causal beliefs than those without (X^2 = 9.15; P = 0.027). Also, patients with "medical" causal belief reported better treatment compliance than those with other beliefs (P = 0.031). Among relatives, "psychosocial" causal belief in comparison with other beliefs was associated with a longer duration of treatment in the hospital (h = 8.29; P = 0.04). For patients, knowledge about possible causal role of "heredity was significantly more prevalent among male than female patients (X^2 = 6.55; P = 0.01) and admission of possible "supernatural" causation was associated with education below the secondary level (X^2 = 6.68; P = 0.008). For relatives, knowledge about possible causal role of brain dysfunction was associated with longer duration of treatment (u = 3.93; P = 0.047), and knowledge of possible causal role of "psychosocial" stress was associated with urban place of residence rather than rural (X^2 = 10.52; P = 0.0012). For both patients and relatives, the most acceptable aetiological proposition was the "supernatural" while the least was "psychosocial". Findings revealed, among others, the widespread belief in "supernatural" causation of mental illness in patients/relatives. Some identified significant findings may be relevant in mental health education programme development.

Keywords: *Beliefs, Knowledge, Aetiology, Mental Illness, Patients, Relatives*

Résumé
Les rapports disponbiles sur les croyance des cause ded desordres psychiatrices dans la societe Africanine tendent a etre concentre sur la populaiton non-patiente. La presente etude est concentre sur les patients et leurs relations. Une enquete sur 70 patients clinicalement stable et ayant, des desordres psychiatriques fonctionelles et 70 relations accompagnat ces patients a ete faite. Ils ont ete interviewe a propos de lwurs croyance a propos des malaides, et lwurs connaissances des possibles facteurs aetiologique. Des informations socio-demographique et clinicaux ont aussi ete elucides. Docize (17,1%) des patients et de leur relations ont respectivement donne la raison medical comme l'une des causes explicatives; 16 (22,9%) patients et 13 (18,6%) relations des patients ont donne comme spsychologique la cause de la maladie; 27 (36,6%) des patients et 38 (54,3%) des relations ont suggere supernaturelle da cause de la maladie et 15 (21,4%) des patients et (10,0%) des relations ont du trouves incertaines la cuase de la maladie de leurs relations ont du trouves incertaines la cause de la maladie de leurs relations (x^2 = 4,72; P = 0,029) comme d'autre facteurs causatif potentiels, que les patients. Les patients avec une experience d'hospitalisation pour cause psychiatrique ont rapporte une forte prevalence psychosocial et surnaturelle comme cause des maladies compare a ceux sans experiences d (hospitalisation psychologique (X^2 = 9,15; P = 0,027). Les patients ayants une croyance d'ordre medical comme cause de la maladie ont presente une meilleur acceptabilite dans le traitement de la maladie compare a caux qui ne croient pas a la cause medical (P = 0,031). Parmis les relations, les raisons psychologiques comme cause de maladie compare a d'autres causes a ete associe a une longue duree de traitemnt a l'hospital (H = 8,29; P = 0,04). Pour les patients, leu connaissance apropos du possible role de l'heridite dans la cause de la maladie a ete plus prevalente chez les hommes que les femelles (X^2 = 6,55; P =0,01), et l'admission d'une possible cause surnaturelle de la maladie a ete associe a l'education en dessous du niveau secondaire (X^2 = 6,68; P = 0,008). Pour les relations la connaissance a propos d'un de mauvais fonctionenment possible du cerceau comme de la maladie a ete associe avec la duree du traitement (U = 3,39; P =0,047). Par ailleurs, la connaisance du reole de stress psychosocial dans la maladie, a ete associe a la residence en milieu urbain plutot quen milieu rural (X^2 = 10,52; P = 0,0012). Pour les patients et leurs relations, le facteur aetiologique le plus propose a ete sypernatural, alorsque le plus faible facteur a ete psyshosocial. En conclusion, il a ete trouve que la croyance eu la cause surnaturelle des maladies mentales chez les patients/leurs relations est tres rependut. Certaines croyances sur raisons associes a la maladie trouve l'ors de cet enquete pourraient entre relevants dans le development des programmes d'educations de la sante.

Correspondence: Dr. T.O. Adebowale, Neuropsychiatric Hospital, Aro, WHO Collaborating Centre for Research and Training in Mental Health, P.M.B. 2002, Abeokuta, Ogun State, Nigeria.

Introduction

People's belief and knowledge about illness, distress, and disability often influence their experience of, and responses to, such problems [1,2]. Patients who understand their problems in terms similar to those of their doctors are more likely to follow treatment procedure than patients who believe their illness results from religions, magical or other sources not generally considered valid by modern medicine [2].

Tarrier and Barrowclough [3], suggested a two-point rationale for providing information to patients about their illness. Such information either alleviates an undesirable state (e.g.; anxiety, confusion or distress) or encourages positive and desirable illness behaviour (e.g.; compliance with treatment). On the other hand, health education addresses patient's basic right of access to information, in a form that he will understand.

Therapeutic effects of educational intervention have been attributed to improvement in treatment compliance [4], among other things. Seltzer, Roncari and Garfinkel [5], however explained that it may not be the mere formal acquisition of knowledge about the disease and medication that enhance compliance, but the patient's interpretation, subjective evaluation and attitudes related to such knowledge. This suggests that the awareness of facts (knowledge) about an illness may not bring about the desired change except it finds consonance with the individual's preexisting cognition.

There are widespread reports of preternatural causal beliefs about psychiatric disorders in the African society [6,7,8]. The studies were carried out mostly on non-patient populations [6,7,8,9]. They did not also attempt to differentiate between knowledge (i.e., awareness of information) and actual belief. These are the issues that this study seeks to address. It will also attempt to relate these cognition's to subject's characteristics and responses to the illness.

Methods

The psychiatric patients and relatives were drawn from the out-patient clinic of Aro Neuropsychiatric Hospital, Abeokuta, Nigeria. The patients were consecutive attenders aged 18 years and above with six months minimum duration of clinic attendance, who had fulfilled ICD 10 criteria for schizophrenia (F20) or manic episode (F30) or bipolar affective disorder (F31) at any one time, but not acutely ill currently and having insight into the illness (i.e., acknowledgement of having a mental disorder or symptoms of mental disorder), at the time of assessment. Relatives studied were at least 18 years old, and accompanied a patient who had attended the hospital for at least six months and was receiving treatment for either schizophrenia, manic episode or bipolar affective disorder (*but not necessarily clinically stable or insightful*). Such relatives, who are not necessarily blood related, must have been emotionally and/or financially involved in patient's care for at least 6 months prior to the clinic visit. The patients and relatives groups were selected independently.

Interviews were carried out by the lead author. The respondent's belief about the cause of patient's illness was elicited with the question. "What do you think is the cause of your (or your relative's) illness? What you think is more important to us than what any other person think". Unwilling patients were gently persuaded and responses were recorded verbatim.

Respondent's awareness of possible causal factors was elicited thus: "Do you think any of the following can cause this type of condition in a person? (Yes / No / Don't know).

(a) A physical illness affecting the way the brain works
(b) Inheritance from parents
(c) Someone's living condition and life difficulties
(d) Supernatural factors and agencies, e.g., curse, charms, witchcraft and wizard

These two questions were derived from the knowledge about Schizophrenia Interview [10], and the study of Ilechukwu [11]. Responses to the question about belief were later coded into three categories: Medical, Psychosocial and Supernatural. A fourth group of Don't know (D.K.) also emerged. 'Medical' category included attribution to drugs, physical injuries or illnesses, heredity or any form of transfer from mother to child, childbirth, worms, veneral disease, febrile condition, etc. without implication of agreement with scientific assessment and findings. Psychosocial categories included thinking too much (i.e., preoccupation with life situations), marriage and love problems, job loss, and other stressful conditions, etc., without implication of supernatural interferences.

Supernatural categories included attribution to witchcraft, "poison" or "juju" (i.e., sorcery) curses and charms, dream encounter (e.g., dream food), the devil, "the wind", "Igbona" (literally means fever, but actually referring to a spirit), destiny, etc.

Socio-demographic and clinical information were also obtained including age, sex, educational status, occupation, duration of illness and treatment, previous hospitalization, relative's relationship to patient, place of residence (rural/urban) and whether or not relative lives with the accompanied patient. The authors also examined the presence of similar illness in other relatives or close friends, in attempt to assess respondents' additional sources of information and experience about the illness. Assessment of patient's compliance with treatment was made by: (1) patient's attendance at the last four appointments, (2) last 24-hour recall of medication usage: the patient was first asked when he/she exhausted the last prescription, followed, if applicable by, "How did you take your tablets yesterday". Total agreement with the doctor's prescription was taken as good medication compliance.

Acceptability index

The authors viewed a belief as an accepted knowledge and is actually "the cognitive information an individual accepts about an object" [12]. When this concept is extrapolated to a group setting, the authors hypothesised that belief can be quantified by the proportion of individuals within the group that found the available information (knowledge) acceptable. The authors coined the term "acceptability index" which represents the extent to which the available information (knowledge) is accepted or believed within the group. It was derived by dividing the prevalence of the subjects belief by the prevalence of their knowledge about each causal factor, since these two variables are intricately linked in such a way that belief is assumed to be a subset of knowledge.

Results

A total of 140 subjects consisting of 70 psychiatric patients and 70 relatives of psychiatric patients consented and were interviewed.

Characteristics of subjects

The patients were significantly younger than the relatives, with mean (SD) age of 39.2 (9.5) years, respectively ($U = 5.217$, $P = 0.02$). There was no significant sex difference between the patients and the relatives with 52.9% and 65.7% males, respectively ($X^2 = 2.40$, $P = 0.12$). There was no significant difference in the educational status of the patients and the relatives,

with 54.3% of patients and 50% of relatives having only elementary or no education at all (X^2 = 2.58; P = 0.46) Thirty percent (30%) each of patients and the relatives reported the presence of similar illness in other member of their family or a close friend. Other characteristics of the relatives are as follows: 85.7% reside in places that can be regarded as urban centres: 65.7% live with the accompanied patient, and have the following relationship with them: father (18.5%), mother (20.1%), spouse (15.7%), sibling (42.9%) and other relationship (2.9%).

The mean (SD) duration of illness among the patient subgroup was 137.2 (89.8) months while that of patients whose relatives were interviewed was 98.0 (74.2) months. Seventy percent (70%) of the psychiatric patients interviewed have had one or more previous hospitalizations. For the patients who relatives were interviewed, 44.3% have had similar hospitalizations.

Aetiological beliefs among patients and relatives

In response to the question: "What do you think is the cause of your (your relative's) illness? .....", 12 (17.1%) patients and 12 (17.1%) relative gave **'medical'** causal explanations. Sixteen (22.9%) patients and 13 (18.6%) relatives gave **psychosocial** causal explanations, while 27 (38.6%) patients and 38 (54.3%) relatives expressed **supernatural** causal beliefs. Fifteen (21.4%) patients and 7 (10%) relatives were uncertain (D.K.) about what could have caused the illness. There was no significant difference between patients' and relatives' aetiological beliefs (X^2 = 5.08, df = 3; P = 0.16).

Table 1: Knowledge of causal factors among patients and relatives

		Patients (N = 70)	Relatives (N = 70)	All Subjects (N = 140)	Significance
Brain dysfunction					
	Yes	29 (41.4%)	40 (57.1%)	69 (49.3%)	X^2 = 3.46 P = 0.06
	No	41 (58.6%)	30 (42.9%)	71 (51.7%0	
Heredity					
	Yes	21 (30.0%)	41 (58.6%)	62 (44.3%)	X^2 = 11.58, P = 0.0006
	No	49 (70%)	29 (41.4%)	78 (55.7%)	
Psychosocial stress					
	Yes	57 (81.4%)	53 (75.7%)	110 (78.6%)	X^2 = 0.68, P = 0.41
	No	13 (18.6%)	17 (24.3%)	30 (21.4%)	
Supernatural					
	Yes	52 (74.3%)	62 (88.6%)	114 (81.4%)	X^2 = 4.72, P = 0.029
	No	18 (25.7%)	8 (11.4%0	26 (18.6%)	

Knowledge (awareness) of causal factors (Table 1)

Twenty-nine (41.4%) patients and 40 (59.1%) relatives (X^2 = 3.46, P = 0.06) were aware that the illness could be caused by a **dysfunction** in the brain. The awareness of **heredity** as possible causal factor was found among 21 (30.0%) patients and 41(58.6%) relatives (X^2 = 11.58, P = 0.0006), while the awareness of the possible aetiological role of **psychosocial stress** was reported by 57 (81.4%) patients and 53 (75.7%) relatives (X^2 = 0.68, P = 0.41) Fifty-two (74.3%) patients and 62 (88.6%) relatives (X^2 = 4.72, P = 0.029) reported that **"supernatural factors"** may have caused the illness.

The **"Acceptability indices"** of information about each causal factor, calculated by dividing the prevalence of subjects' belief by the prevalence of their knowledge about each causal factor are as follows:

Medical / Biological factor		
(Brain dysfunction)	=	0.35
(Heredity)	=	0.39
Psychosocial factors	=	0.26
Supernatural factors	=	0.57

Effect of socio-demographic and clinical factors on subjects beliefs (Table 2)

There was no association between subjects' causal belief and age (F = 1.42, P = 0.23) sex (X^2 0.50, P = 0.92), level of education (X^2 = 2.01, P = 0.57), or the presence of similar illness in other relatives (X^2 = 2.21, P = 0.53).

There was a higher prevalence of psychosocial, and supernatural causal beliefs, and lower D.K. (uncertainty responses) among patients with **previous psychiatric hospitalization** (X^2 = 9.15, P = 0.027). Similarly, among the relatives, psychosocial causal beliefs in comparison with other beliefs was associated with a longer **duration of patient's treatment** in the hospital (H = 8.29, df = 3, P = 0.04).

Relative's relationship to the patient was associated with their belief about the cause of the illness. There was a higher report of belief in supernatural factors (76.9%) and uncertainty (23.1%) among **fathers,** and psychosocial factors (36.7%) among **siblings,** compared with other relations (X^2 = 21.51, df = 12, P = 0.043).

No significant difference in belief was observed in relation to whether or not the relative **lived with the patients** (X^2 = 4.76, P = 0.19), and their **place of residence**, i.e., urban/rural (X^2 = 6.75, P = 0.08).

Table 2: Effect of Sociodemographic and clinical factors on subjects belief.

	Medical	Psychosocial	Supernatural	D.K.	Statistic *P* value
Age: (yrs)					
Patients)					
Mean (S.D.)	38.00 (10.93)	39.37 (9.04)	38.00 (8.35)	42.33 (10.78)	$P = 0.75$, $P = 0.53$
Relatives:					
Mean (S.D.)	47.66 (8.85)	36.23 (10.02)	47.08 (16.62)	48.71 (19.05)	$P = 2.03$, $P = 0.11$
Sex: *Patients*					
Male (37)	8 (21.6%)	10 (27.0%)	12 (32.4%)	7 (18.9%)	$X^2 = 2.51$, $P = 0.47$
Female (33)	4 (12.1%)	6 (18.2%)	15 (45.5%)	8 (24.2%)	
Relatives					
Male (46)	7 (15.2%)	6 (13.0%)	26 (56.5%)	7 (15.2%)	$X^2 = 6.27$, $P = 0.09$
Female (24)	5 (20.8%)	7 (29.2%)	12 (50.0%)	0(0.0%)	
Education: *Patients*					
< Pry. (38)	7 (18.4%)	7 (18.4%)	13 (34.2%)	11 (28.9%)	$X^2 = 3.40$, $P = 0.33$
> Pry. (32)	5 (15.6%)	9 (28.1%)	14 (43.8%)	4 (12.5%)	
Relatives					
< Pry. (35)	5 (14.3%)	4 (11.4%)	22 (62.9%)	4 (11.4%)	$X^2 = 3.35$, $P = 0.34$.
> Pry. (35)	7 (20.0%)	9 (25.7%)	16 (45.7%)	3 (8.6%)	
Illness in other relatives					
Patients					
Yes (21)	3 (14.3%)	5 (23.8%)	10 (47.6%)	3 (14.3%)	$X^2 = 1.51$, $P = 0.68$
No (49)	9 (18.4%)	11 (22.4%)	17 (34.7%)	12 (24.5%)	
Relatives					
Yes	7 (33.3%)	3 (14.3%)	9 (42.9%)	2 (9.5%)	$X^2 = 5.61$, $P = 0.13$
No	5 (10.2%)	10 (20.4%)	29 (59.2%)	5 (10.2%)	
Previous Admission *(Patient)*					
Yes (49)	8 (16.3%)	13 (26.5%)	22 (44.9%)	6 (12.2%)	$X^2 = 9.15$, $P = 0.027$
No (21)	4 (19.0%)	3 (14.3%)	5 (23.8%)	9 (42.9%)	
Duration of illness:					
Patient:					
Mean (S.D.)	125.4 (59.7)	157.7 (104.4)	138.5 (94.6)	122.5 (88.6)	$H = 1.01$, $P = 0.79$
Relatives:					
Mean (S.D.)	140.0 (98.1)	119.5 (60.8)	78.5 (67.4)	92.1 (57.1)	H 7.25, $P = 0.06$
Duration of Treatment					
Patient					
Mean (S.D.)	110.0 (67.0)	127.0 (79.3)	125.1 (92.6)	98.4 (80.8)	$H = 1.57$, $P = 0.06$
Relatives:					
Mean (S.D.)	57.3 (65.9)	104.6 (66.4)	51.5 (43.4)	75.7 (52.5)	$H = 8.29$, $P = 0.04$.
Residence *(relative)*					
Urban (60)	12 (20.0%)	13 (21.7%)	30 (50.0%)	5 (8.3%)	$X^2 = 6.75$, $P = 0.08$
Rural (10)	0 (0.0%)	0 (0.0%)	8 (80.0%)	2 (20.0%)	
Relationship to Patient					
Father (13)	0 (0%)	0 (0%)	10 (76.9%)	3 (23.1%)	$X^2 = 21.51$, $P = 0.43$
Mother (14)	4 (28.6%)	1 (7.1%)	9 (64.3%)	0 (0%)	
Spouse (11)	3 (27.3%)	1 (9.1%)	6 (54.5%)	1 (9.1%)	
Sibling (30)	4 (13.3%)	11 (36.7%)	12 (40.0%)	3 (10.0%)	
Others (2)	1 (50.0%)	0 (0%)	1 (50.0%)	0 (0%)	

Effect of sociodemographic and clinical factors in knowledge of causal factors (Tables 3a & 3b)

Brain dysfunction

Among the patients, there was no significant relationship between knowledge of possible causal role of brain dysfunction and any of the sociodemographic and clinical variables. Whereas, among relatives, this knowledge was associated only with longer **duration of patient's illness** ($U = 3.93$, $P = 0.047$).

Heredity

Knowledge about the possible causal role of heredity was significantly more prevalent among **male** patients ($X^2 = 6.55$ $P = 0.01$) and those (patients) with a history of similar **illness in other relatives** ($X^2 = 4.43$, $P = 0.035$).

Psychosocial stress

The knowledge of possible causal role of psychosocial stress was only associated with **urban residence** among relative ($X^2 = 10.52$, $P = 0.0012$)

Supernatural factors

The report of possible causal role of supernatural factors was associated with **education** below the secondary level among **patients** ($X^2 = 6.86$, $P = 0.008$).

Table 3 a: Effect of sociodemographic and clinical factors in 'knowledge' of causal factors among patients.

	Brain Dysfunction		Heredity		Psychosocial stress		Supernatural factors	
	Yes	No	Yes	No	Yes	No	Yes	No
Age: (yrs)								
Mean (S.D.)	38.6 (9.33)	39.7 (9.65)	37.5 (9.03)	39.9 (9.65)	38.4 (9.00)	43.0 (10.90)	38.9 (8.70)	40.2 (11.62)
	($t = 0.23$, $P = 0.63$)		($t = 0.93$, $P = 0.66$)		($t = 2.57$, $P = 0.11$)		($t = 0.25$, $P = 0.62$)	
Sex: Male	18 (48.6%)	19 (51.4%)	16 (43.2%)	21 (56.8%)	33 (89.2)	4 (10.8%)	25 (67.6%)	12 (32.4%)
Female	11 (33.3%)	22 (66 .7%)	5(15.2%)	28 (84.8%)	24 (72.7%)	9 (27.3%)	27 (81.8%)	6(18.2%)
	($X^2 = 1.69$, $P = 0.19$)		($X^2 = 6.55$, $P = 0.01$) *		($X^2 = 3.13$, $P = 0.07$)		($X^2 = 1.85$, $P = 0.17$)	
Education								
Nil/Elementary	14 (36.8%)	24 (63.2%)	8 (21.1%)	30 (78.9%)	30 (78.9%)	8 (21.1%)	33 (86.8%)	5 (13.2%)
Above Elementary	15 (46.9%)	17 (53.1%)	13 (40.6%)	19 (59.4%)	27 (84.4%)	5 (15.6%)	19 (59.4%)	13 (40.6%)
	($X^2 = 0.72$, $P = 0.39$)		($X^2 = 3.17$, $P = 0.07$)		($X^2 = 0.34$, $P = 0.56$		$X^2 = 6.86$, $P = 0.008$)	
Illness in other relatives Yes	9 (42.9%)	12 (57.1%)	10 (47.6%)	11 (52.4%)	17 (81.0%)	4 (19.0%)	15 (71.4%)	6 (28.6%)
No	20 (40.8%)	29 (59.2%)	11 (22.4%)	38 (77.6%)	40 (81.6%)	9 (18.4%)	37 (75.5%)	12 (24.5%)
	($X^2 = 0.03$, $P = 0.87$)		($X^2 = 4.43$, $P = 0.035$)		($X^2 = 0.00$, $P = 0.94$)		($X^2 = 0.13$, $P = 0.72$)	
Duration of illness (mths)								
Mean (S.D.)	145.9 (99.9)	131.1 (82.9)	135.8 (69.0)	137.8 (98.1)	141.4 (92.8)	118.7 (75.8)	135.0 (84.5)	143.6 (106.3)
	($U = 0.35$, $P = 0.55$)		($U = 0.19$, $P = 0.65$)		($U = 0.43$, $P = 0.51$)		($U = 0.001$, $P = 0.97$)	
Duration of Attendance								
Mean (S.D.)	123.1 (88.4)	113.1 (78.5)	115.3 (72.3)	118.1 (86.9)	120.6 (82.6)	102.6 (82.2)	113.5 (78.4)	127.8 (94.2)
	($U = 0.09$, $P = 0.76$)		($U = 0.03$ $P = 0.86$)		($U = 0.78$, $P = 0.38$)		$U = 0.37$, $P = 0.54$)	
Previous admission								
Yes 49	20 (40.8%)	29 (59.2%)	14 (28.6%)	35 (71.4%)	41 (83.7%)	8 (16.3%)	36 (73.5%)	13 (26.5%)
No 21	9 (42.9%)	12 (57.1%)	7 (33.3%)	14 (66.7%)	16 (76.2%)	5 (23.8%)	16 (76.2%)	5 (23.8%)
	($X^2 = 0.03$, $P = 0.91$)		($X^2 = 0.16$, $P = 0.69$)		($X^2 = 0.54$, $P = 0.46$)		($X^2 = 0.06$, $P = 0.81$)	

Table 3b: Effect of Sociodemographic and clinical factors on 'knowledge" of causal factors among relatives

	Brain Dysfunction		Heredity		Psychosocial stress		Supernatural factors	
	Yes	No	Yes	No	Yes	No	Yes	No
Age (yrs)								
Mean (S.D.)	43.8 (16.1)	47.3 (13.72)	47.6 (15.92)	42.0 (13.54)	43.9 (14.06)	49.8 (17.79)	45.9 (15.47)	40.5 (11.93)
	($T = 0.88$, $P = 0.65$)		($t = 2.39$, $P = 0.122$)		($t = 2.01$, $P = 0.15$)		($t = 0.91$, P 0.65)	
Sex: Male	29 (63.0%)	17 (37.0%)	28 (60.9%)	18 (39.1%)	35 (76.1%)	11 (23.9%)	40 (87.0%)	6 (13.0%)
Female	11 (45.8%)	13 (54.2%)	13 (54.2%)	11 (45.8%)	18 (75.0%)	6.(25.0%)	22 (91.7%)	2 (8.3%)
	($X^2 = 1.91$, $P = 0.16$)		($X^2 = 0.29$, $P = 0.59$)		($X^2 = 0.01$, $P = 0.92$)		($X^2 = 0.35$, $P = 0.55$)	
Education:								
Nil/Elementary	17 (48.6%)	18 (51.4%)	19 (54.3%)	16 (45.7%)	24 (68.6%)	11 (31.4%)	30 (85.7%)	5 (14.3%)
Above Elementary	23 (65.7%0	12 (34.3%)	22 (62.9%)	13 (37.1%)	29 (82.9%)	6(17.1%)	32 (91.4%)	3 (8.6%)
	($X^2 = 2.10$, $P = 0.14$)		($X^2 = 0.53$, $P = 0.46$)		($X^2 = 1.94$, P 0.16)		($X^2 = 0.56$, $P = 0.45$)	
Illness in other relatives								
Yes	14 (66.7%)	7 (33.3%)	15 (71.4%)	6 (28.6%)	17 (81.0%)	4 (19.0%)	18 (85.7%)	3 (14.3%)
No	26 (53.1%)	23 (46.9%)	26 (53.1%)	23 (46.9%)	36 (73.5%)	13 (26.5%)	44 (89.8%)	5 (10.2%)
	($X^2 = 1.11$, $P = 0.29$)		($X^2 = 2.04$, $P = 0.15$)		($X^2 = 0.45$, $P = 0.50$)		($X^2 = 0.24$, $P = 0.62$)	
Duration of illness (mths)								
Mean (S.D.)	109.5 (70.7)	82.6 (77.1)	106.4 (82.7)	88.1 (59.5)	107.5 (79.1)	68.4 (46.8)	94.6 (75.5)	124.6 (60.7)
	($U = 3.93$, P 0.047)		($U = 0.58$, $P = 0.44$)		($U = 3.05$, $P = 0.08$)		($U = 2.05$, $P = 0.15$)	
Duration of Attendance								
Mean S.D.	73.8 (56.2)	52.7 (54.1)	61.2 (54.5)	69.8 (58.4)	69.8 (59.2)	49.0 (41.3)	61.5 (53.9)	89.8 (67.9)
	($U = 2.94$, $P = 0.08$)		($U = 0.42$, $P = 0.52$)		($U = 0.84$, $P = 0.36$)		($U = 1.37$, $P = 0.24$)	
Place of Residence								
Urban	37 (61.7%)	23 (38.3%)	36 (60%)	24 (40%)	50 (83.3%)	10 (16.7%)	52 (86.7%)	8 (13.3%)
Rural	3 (30%)	7 (70%)	5 (50%)	5 (50%)	3 (30%)	7 (70.0%)	10 (100%)	0 (0.0%)
	($X^2 = 2.34$, $P = 0.08$)		($X^2 = 0.06$, $P = 0.73$)		($X^2 = 10.52$, $P = 0.0012$)		($X^2 = 0.48$, $P = 0.59$)	

Table 4: Effect of Belief and Knowledge about Aetiology of illness on Patients Treatment Compliance

		Clinic Attendance		Statistics	Medication	Compliance	Statistics
Belief:		Good	Poor		Good	Poor	
- Medical		9 (75%)	3 (25%)	$X^2 = 0.38$	12 (100%)	0(0%)	$X^2 = 4.65$
- Psychosocial		11(68.8%)	5 (31.2%)	$P = 0.94$	11 (68.8%)	5 (31.3%)	$P = 0.031$*
- Supernatural		18 (66.7%)	9 (33.3%)		19 (70.4%)	8 (29.6%)	
- D.K.		11 (73.3%)	4 (26.7%)		11 (73.3%)	4 (26.7%)	
Knowledge:							
Brain dysfunction	Yes	22 (75.9%)	7 (24.1%)	$X^2 = 0.81$	21 (72.4%)	8 (27.6%)	$X^2 = 0.29$
	No	27 (65.9%)	14 (34.1%)	$P = 0.36$	32 (78.0%)	9 (22.0%)	P = 0.58
Heredity:	Yes	15 (71.4%)	6 (28.6%)	X^2 0.03	19 (90.5%)	2 (9.5%)	$X^2 = 3.56$
	No	34 (69.4%)	15 (30.6%)	$P = 0.86$	34 (69.4%)	15 (30.6%)	P = 0.06
Psychosocial stress:	Yes	39 (68.4%)	18 (31.6%)	$X^2 = 0.07$	45 (78.9%)	12 (21.1%)	$X^2 = 0.93$
	No	10 (76.9%)	3 (23.1%)	$P = 0.74$	8 (61.5%)	5 (38.5%)	$P = 0.28$
Supernatural:	Yes	37 (71.2%)	15 (28.8%)	$X^2 = 0.13$	39 (75%)	13 (25%)	$X^2 = 0.01$
	No	12 (66.7%)	6 (33.3%)	$P = 0.72$	14 (77.8%)	4 (22.2%)	$P = 1.0$

Causal belief/knowledge and compliance (Table 4)
There was no significant relationship between patients awareness of causal factors and their treatment compliance either in relation to keeping clinic appointments or taking their medications.

Similarly, there was no significant relationship between patients' beliefs about the cause of their illness, and the keeping of clinic appointment ($X^2 = 0.38$, df = 3, $P = 0.94$). However, there was greater medication compliance (i.e., total agreement between 24-hour recall of medication usage and patient's last prescription) among patients with medical causal beliefs, than patients with non-medical causal beliefs ($X^2 = 4.65$, $P = 0.031$).

Discussion

The prevalence of aetiological beliefs observed in this study shows some similarities with that of Ilechukwu [11], especially with regards to "Medical" aetiology belief and "Don't Know" responses. However, the present study revealed a predominance of "supernatural" over "psychosocial" causal beliefs, a reversal of Ilechukwu's findings. The finding of a predominant preternatural causal explanation is not unexpected in this community, confirming earlier findings of Prince [6], Odejide and Olatawura [7] and Akighir [8]. It is however surprising that the subjects failed to give up such cultural beliefs despite a prolonged exposure to orthodox psychiatric services. Only about 2 out of every 10 respondents acknowledged the relevance of psychosocial stress in the aetiology of their or their relatives' psychiatric disorders. This may be due to poor enlightenment and/or the presence of a defense mechanism against the acknowledgement of a personal weakness in the ego structure. The **"acceptability indices"** suggest that patients and relatives embraced information about supernatural causations most readily, and that they found psychosocial explanations least acceptable, of all the propositions to which they were exposed. There is an unexpected better acceptability of "medical" than "psychosocial" causal explanation. This is reassuring to mental health professionals in this cultural setting, and poses a challenge to make more medical information available.

A previous hospitals admission contributed significantly to the patient's belief about the cause of the illness, thus resulting in a reduction in "Don't know" responses, increased psychosocial belief and a surprising increase in supernatural beliefs. These consequences in the absence of corresponding significant changes in knowledge level, suggest that no new information was passed on to the patients during the admission, but rather such admissions appeared to have confirmed or reinforced previously known information. Such reinforcement of supernatural aetiological ideas can not be imagined to have been carried out by mental health care workers. Therefore, the effect of interaction among patients in the course of admission is a possible explanation for this belief alteration/formation during admission. It is also possible that readmitted patients have been taken to traditional healers where supernatural beliefs were further reinforced.

Among relatives, chronicity of illness appears to be associated with belief in medical and psychosocial causations. This association just fell short of significance at $P = 0.06$. Similarly, longer duration of patient's treatment was associated with psychosocial belief among relatives. These observations suggest the effect of relatives' interaction with professional careers (e.g., doctors and nurses), because of a corresponding association between knowledge of causal role of brain dysfunction and duration of illness ($P = 0.047$).

Relationship to patient was also observed to be a significant determinant of relative's belief about causation, with fathers preferring the supernatural causation or remaining undecided, and siblings opting for "psychosocial" causative model. This is unlikely to be due to the effect of age and education because neither was significantly associated with belief. The difference in their belief may be related to factors in family dynamics.

The significantly higher awareness of heredity as a possible cause among male patients may have cultural, sex-role implications. It is however noteworthy that the presence of other relatives or close friends with similar illness, was associated with a significantly higher awareness of the possible causal role of heredity among the patients, but not the relatives. This may be an example of knowledge by experience. The lack of similar association among relatives may therefore suggest the unreliability of relatives' report of presence of similar illness in other members of the family.

Another interesting finding is the higher but insignificant perception among urban relatives of illness as originating from a biological brain dysfunction and the significant higher awareness of psychosocial stress as being causative. These findings may reflect a factor of exposure to medically sound information, which is assumed to be poor among rural dwellers.

Finally, it is interesting to note that treatment compliance was only significantly associated with causal belief and not knowledge, thus highlighting the volitional component of a belief. Medication compliance, when strictly measured, differentiated between patients who saw their illness as a "medical" problem and those who saw it as either a psychosocial or supernatural problem. This is in agreement with the finding of Foulks et al. [2].

Conclusion

This study confirmed the previous findings of widespread belief in supernatural causation of mental illness [6,7,8,9], even among long-term users of orthodox psychiatric services. It further highlights the difference between beliefs about the cause of the illness and mere awareness of possible aetiological factors among patients and relatives. Both belief and knowledge are probably linked by complex dynamic interplay between the subject and his environment. The findings of this study suggest that such environmental factors may include the influence of professional careers, other patients, and the family. The study also identified differential acceptability of causal information, with medical explanations appearing better acceptable to subjects than expected.

Treatment compliance was not found to be associated with mere awareness of information about etiology, but with personal conviction about such information expressed as a belief. This is in agreement with the view of Seltzer et al. [5].

Clinical implications

The clinical implication of the findings of this study is in the arena of mental health education programme development. The need for interactive group approach to health education as a tool for belief formation and alteration among patients, their relatives and members of the community is hereby advocated. The findings also have relevance in treatment-compliance interventions.

Limitations

The method of assessment of causal beliefs in this study has obvious limitations with the possibility of eliciting delusional and or socially desirable responses from subjects. However, the assessed patients were insightful and in full remission. Furthermore, the wording of the questions was such that would minimise social desirability in terms of responses. The method of assessment of medication compliance appears unusual, but found to be relevant in our setting where poor medication compliance commonly occurs at about the time of patient's next appointment due to patients complaints of inability to afford the cost of the full prescription. This has been postulated to be more related to patients' attitudes towards his treatment than finance, as confirmed by this study.

References

1. Balint M. The doctor, his patient and the illness. 2nd Ed. Pitman Paperbacks. 1964.
2. Foulks EF. Persons JB, Merkel RL. The effect of patient's beliefs about their illnesses on their compliance in psychotherapy. Am J Psychiatry 1986; 143: 340-344.
3. Tarrier N and Barrowclugh C. Providing information to relatives about schizophrenia: some comments. British Journal of Psychiatry 1986; 149: 458-463.
4. Falloon I.R.H. Boyd JL Mc Gill CW et al. Family management in the prevention of exacerbation of schizophrenia. A controlled study. New England Journal of Medicine 1982; 306:1437-1440.
5. Seltzen A. Roncari I, and Garfinkel P. Effect of patients education on medication compliance. Canadian Journal of Psychiatry 1980; 25: 638-645.
6. Prince R. Indigenous Yoruba psychiatry. In a Magic, faith, and healing: Studies in primitive psychiatry today A. Kier [Ed] 1964: pp 84-118.
7. Odejide AO and Olatawura MO. A survey of community attitudes to the concept and treatment of mental illness in Ibadan, Nigeria. Nigeria Medical Journal 1979; 9(3): 343-348.
8. Akighir A. Traditional and modern psychiatry: A survey of opinions and beliefs among people in Plateau state of Nigeria. International Journal of Social Psychiatry 1982; 28: 203-209.
9. Ogunlesi AO. and Adelekan ML. Nigerian primary health care workers: A pilot survey on attitude to mental health. Psychiatric Bulletin 1988; 12: 441-443.
10. Barrowclough C, Tarrier N. Watt et al. Assessing the functional value of relative's knowledge about schizophrenia: a preliminary report. British Journal of Psychiatry 1987; 151: 1-8.
11. Ilechukwu STC. Interrelationship of beliefs about mental illness, psychiatric diagnosis and mental health care delivery among Africans. The Int. Journ of Soc Psychiatry 1986: Vol. 34 (3): 200-206.
12. Krug RS, Deckert GH. Psychosocial issues in health care delivery Rypin's Basic Sciences Review, 16th Edition, Ed. ED Frohlich 1993 p. 799.