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Beliefs about causation of schizophrenia: Do Indian families believe in supernatural causes?

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Abstract *Background*: Beliefs about the causation of schizophrenia could influence the attitudes patients' families adopt towards the patient and may also influence their help-seeking behaviour. Indian families have been typically described as often believing in causes like supernatural forces and therefore seeking help from magico-religious healers. In the changing mental health scenario in India, this impression needs verification. *Method*: Key relatives living with 254 chronic schizophrenia patients were interviewed and asked to name the causes they believed were behind the illness. A list of possible causes was provided for the families to select from, and relatives were also encouraged to mention other possible causes, not featured in the list. The possible causes identified and the factors related to attributions made were analysed. *Results*: A supernatural cause was named by only 12% of the families and as the only cause by 5%. Psychosocial stress was most commonly cited cause, followed by personality defect and heredity. A small number of families (14%) could not name any cause and 39% named more than one cause. Patient gender and education, duration of illness and the key relative's education and the nature of relationship were related to the type of causal attributions made. *Conclusion*: Families living with patients suffering chronic schizophrenia receiving treatment in urban India rarely subscribe to the idea of supernatural causation of the illness. The causal attributions made by them are fairly rational and understandable, given the relative lack of exposure to proper information about the illness.

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Introduction

The growth of social and community psychology has given rise to a great deal of interest in the nature of opinions about mental illness held by the various sections of the community, from the level of families of the mentally ill to the general public. The opinions and attitudes of individuals towards mental illnesses are crucial factors that influence their behaviour towards the mentally ill (Prabhu et al. 1984). They are of importance from the epidemiological and management aspects of these disorders. Families' expectations of the schizophrenia patient and their treatment choice have been found to be determined mainly by the beliefs the families hold regarding the aetiology of the illness (Angermeyer and Matschinger 1994; Jorm et al. 1997; Banerjee and Roy 1998).

Schizophrenia is one of the most misreported and misunderstood mental illnesses. Public beliefs about its causation is varied, ranging from genetic causes to the effects of atomic rays (Angermeyer and Matschinger 1996; Jorm et al. 1997). However, little is known specifically about the beliefs of relatives of patients regarding the causes of the disorder (Angermeyer and Matschinger 1994). Much of the information on relatives' beliefs about the cause of schizophrenia has come from developed countries, where the families are probably better exposed to information about the disease than families in developing countries with low literacy. The situation in developing countries like India was pictured by Dube (1970), some years ago. He said, "...a great deal of misconception, superstition and ignorance exists. Mental illnesses are viewed as visitations of evil spirits, of a goddess or of a curse….exaggerated beliefs in mystic influences, excessive faith in powers of saints, priests and medicaments". This opinion continues to be perpetrated by recent reports on the treatment of

severe mental disorders at temples and other religious places in India. Beliefs in magico-religious causes of physical as well as psychological diseases are deeply ingrained in the minds of the Indian masses, even in populations with higher literacy (Banerjee and Roy 1998).

There has been a perceptible change in the mental health scenario in India in recent years, attributed to the increase in community orientation in the mental health service, as well as better awareness about mental illness with increasing exposure to information available through electronic mass media. In this current state, there is a need to understand what the relatives of patients with schizophrenia think about the aetiology of the disorder, and why. In India, the family represents the vital resource in the care of chronic mentally ill (Shankar and Menon 1991). This fact, clubbed with the knowledge that management of the patient may be influenced by the family's opinion about the causes of illness, makes information on relatives' causal attribution more relevant in India than in the West.

This study was conducted with the aim of identifying the causes to which the family members of patients with schizophrenia attribute the illness. The study further aimed to identify the variables associated with the causal attributions made by the families.

Subjects and methods

Study population

The study was conducted with 254 families of patients with chronic schizophrenia diagnosed as per DSM-IV criteria (American Psychiatric Association 1994). The diagnosis was made after a clinical interview conducted with a semistructured format routinely used at the study centre. The patients were receiving treatment from the outpatient service section of the Schizophrenia Research foundation– India, located in the city of Chennai in southern India. This is a non-governmental organisation working in the area of research and rehabilitation of schizophrenia. Only those patients who were living with their family (almost all the patients do so in India) were chosen for the study. The patients were a consecutive sample receiving treatment and follow-up at the outpatient clinic. The families were all from the urban area of the city of Chennai, predominantly Hindus (86%) and were from lower and middle economic strata (80%). The patients and their families were receiving the standard outpatient care at the service centre, which consisted of medication management, rehabilitation inputs and unstructured family counseling. The families were not undergoing any special education programmes. A key relative, who was the one in most contact with the patient, staying continuously in the same household and involved in caring for them was interviewed for the study.

Family belief about cause

A key relative of the patient was interviewed by the authors (both psychiatrists) and asked what he/she thought was the most probable cause/s for the illness in the family member. For this, a list of possible causes of illness was used. The items in the list were drawn from two earlier studies, namely, the 15 items used by Angermeyer and Matschinger (1996) and the 12 items of the Family Interview Schedule used in the International Study of Schizophrenia (Sartorius et al. 1996). The caregivers were presented with all the items featured in the two lists, taking into account the repetitive items. Relatives were encouraged to mention causes other than those that did not feature in the list. They were also asked to name as many causes as they could. For purpose of analysis, in this study the 27 items featured in the two lists were regrouped into seven categories on an empiric basis. They were: heredity, brain dysfunction, psychosocial stress, personality defect in adjustment, supernatural cause, fate/God's will and cause not known. The components of these seven categories drawn from the two lists are given in Table 1. A positive response on any one of the component items was taken to indicate a positive response to that category.

Analysis

The data were analysed to identify the frequency of each causal attribution made by the families. Chi-square test and discriminant function analysis were conducted to study the relationship of the attributions to the following independent variables: age, sex,

Table 1 Categories of causes and their components

Item	Categories	Angermeyer and Matschinger (1996)	Sartorius (1996)
1	Heredity	Heredity	Heredity
2	Brain dysfunction	Disorder of the brain, drug or alcohol abuse	Faulty biological functioning, substance abuse, faulty nutritional habits, physical effects of environment
3	Psychosocial stress	Stress in partnership or family, occupational stress, hectic pace of modern life, isolation, unemployment, sexual abuse during childhood	Cause in intimate interpersonal relationships or family life, cause in social environment, specific precipitating event
4	Personality defect in adjustment	Weak mental constitution, unconscious conflict, unstable personality, faulty upbringing	Character or lifestyle
5	Supernatural cause	Effect of atomic rays	Supernatural forces unprovoked by patient, supernatural forces provoked by patient
6	Fate/God's will	God's will or fate	(none)
7	Cause not known	(none)	No explanation

education, marital status of the patient and the duration of illness (the patient variables) and sex, education of the key relatives and their relationship to the patient (key relative variables).

Data compilation and statistical analysis were done using the SPSS version 5.0 (Norusis 1992) and Epi Info Version 5.0 (Dean et al. 1990) programmes.

Results

Patient population and family members

The patient population consisted of 147 men (58%) and 107 women (42%). The mean age of the patients was 34.2 ± 9.5 years. Less than half of them (n = 110, 43%) were below 30 years of age. They had been ill for a mean duration of 10.4 ± 8.2 years, with the majority of them (n = 189, 74%) having been ill for more than 5 years. Only a small number had no school education (n = 39, 15%). Most had at least primary schooling (n = 167, 66%) and a minority had college level education (19%). There was a nearly equal number of patients who had never married (n = 131, 52%) and had ever married (n = 123, 48%, including currently married, divorced, separated, widowed).

Parents were the most common family member interviewed (n = 148, 58%), followed by spouses (n = 65, 26%) and other relatives (siblings, children) (n = 41, 16%). More female family members were interviewed (n = 147, 58%) than males (n = 107, 42%). The number of relatives interviewed who had never had any schooling was a minority (n = 43, 17%). Most of them (n = 186, 73%) had undergone at least primary school education, and a small number (n = 25, 10%) had undergone education up to the university level.

Causal attributions

The total number of responses was more than the number of subjects, because 86 (39%) of them named more than one cause. A majority of the relatives (n = 219, 86%) identified at least one clear cause, whereas 35 (14%) responded as "cause not known". The frequency of each causal attribution is given in Table 2 in a rank order. The most common cause cited was psychosocial stress, followed by personality defect in adjustment. Heredity, brain dysfunction, cause not known and supernatural cause were next in order, and fate/God's will was least frequent of all. Where more than one cause was mentioned, a combination of heredity and psychosocial stress was the most common combination (20/86, 23%) followed by psychosocial stress and personality defect (19/86, 22%). The rest consisted of a variety of combinations, each accounting for less than 10% of the total. Stress in academic and work areas, problems in the family, and precipitating stressful events were the most common psychosocial stresses named. Only one instance of childhood sexual abuse was mentioned. Among those who implied brain dysfunction, eight relatives specifically mentioned the effect of alcohol/drug abuse on the brain, and one referred to possible brain injury during birth. Only one of those who attributed the illness to personality defect named a faulty upbringing, and none referred to an unconscious conflict as the cause. All the relatives who named heredity as a cause had a history of another person in the family suffering from a severe mental disorder.

Table 2 Rank order of causes attributed

Cause	Total (N = 254)		Only cause (N = 133)	
	n (%)	Rank	n (%)	Rank
Psychosocial stress	140 (55)	1	84 (63)	1
Personality defect	55 (22)	2	23 (17)	2
Heredity	39 (15)	3	11 (8)	3
Brain dysfunction	35 (14)	4	8 (6)	4
Not known	35 (14)	4	–	–
Supernatural cause	30 (12)	5	6 (5)	5
Fate/God's will	9 (4)	6	1 (1)	6

A majority (n = 133, 61%) of the 219 respondents who cited any cause for the illness, implicated only one cause. The rest (39%, as stated above) mentioned more than one cause. The rank order of the "only cause" cited by the families was same as the total responses (Table 2). Thus, psychosocial stress was more often seen as a sole cause for the illness, followed by personality defect, heredity, brain dysfunction, supernatural cause and fate/God's will, in that order.

Variables associated with causal attributions

The association between causal attributions and socio-demographic and clinical variables is shown in Table 3 (patient variables) and Table 4 (key relative variables).

Patient variables

When the gender of the patient was considered, "cause not known" was named significantly more often when the patient was male and heredity more often as the cause in female patients. Psychosocial stress was more often cited as the causal factor in patients who had undergone higher education to the level of university than in those with less education. Heredity was named more commonly as a cause in patients ill for a duration of more than 5 years compared to the patients with illness of shorter

Table 3 Causal attributions and patient variables

Cause	Age		Sex		Education		Marital status		Illness duration	
	<30 yr (n = 110)	>30 yr (n = 144)	M (n = 147)	F (n = 107)	College (n = 48)	Other (n = 206)	Married (n = 131)	Single (n = 123)	<5 yr (n = 65)	>5 yr (n = 189)
Not known	17	18	27[a]	8	5	30	17	18	13	22
Brain dysfunction	12	23	21	14	3	32	16	19	11	24
Heredity	22	17	16[b]	23	10	29	18	21	4	35[c]
Psychosocial stress	59	81	77	63	35[d]	105	73	67	38	102
Fate/God's will	5	4	6	3	2	7	2	7	2	7
Supernatural cause	11	19	20	10	3	27	20	10	4	26
Personality defect	23	32	30	25	8	47	27	28	23[e]	32
Multiple	38	48	49	37	16	70	42	44	21	65

[a] $\chi^2 = 6.15$; $P < 0.01$; OR = 2.78 (95% CI 1.14–7.0)
[b] $\chi^2 = 5.36$; $P < 0.02$; OR = 0.45 (95% CI 0.21–0.94)
[c] $\chi^2 = 5.69$; $P < 0.01$; OR = 0.29 (95% CI 0.07–0.86)
[d] $\chi^2 = 7.58$; $P < 0.005$; OR = 2.59 (95% CI 1.24–5.5)
[e] $\chi^2 = 9.71$; $P < 0.001$; OR = 2.69 (95% CI 1.36–5.32)

Table 4 Causal attribution and key relative variables

Cause	Sex		Education		Relationship	
	Male (n = 107)	Female (n = 147)	College (n = 25)	Others (n = 229)	Parents (n = 148)	Others (n = 106)
Not known	19	16	3	32	20	15
Brain dysfunction	10	25	6	29	22	13
Heredity	17	22	8[a]	31	27	12
Psychosocial stress	53	87	15	125	87	53
Fate/God's will	7	2	1	8	7	2
Supernatural cause	9	21	0	30[b]	17	13
Personality defect	26	29	7	48	30	25
Multiple	33	53	13[c]	73	58[d]	28

[a] Fisher's $P = 0.03$; OR = 3.01(95% CI 1.08–8.2)
[b] Fisher's $P = 0.01$; OR = undefined
[c] $\chi^2 = 4.08$, $P < 0.05$; OR = 2.32(95% CI 0.94–5.74)
[d] $\chi^2 = 4.54$, $P < 0.03$; OR = 1.82(95% CI 1.01–3.29)

duration. On the other hand, personality defect in adjustment was cited more often as the cause in those with duration of illness less than 5 years than those with more chronic illness. The patient's age and marital status were not significantly related to any particular causal attribution.

Key relative variables

The sex of the relative was not related to making any particular causal attribution. Parents more often cited multiple causes for the illness than other relatives. Family members who had been educated to the level of university more often named heredity or multiple causes, and those with less education more often named supernatural forces as a cause.

Discriminant function analysis

Five of the factors discriminated the families who named supernatural causes from others. Among them, age of the patient was most prominent, with other factors not adding much to the discrimination. A single factor featured for three other causal attributions (patient's education, for psychosocial stress; and relationship of the key relative to the patient, for personality defect and multiple causes). A summary of the analysis is given in Table 5.

Discussion

Causal attributions

The interesting finding in our study was that very few families named supernatural causes. Belief in demons as the cause of mental health problems is a well-known phenomenon in many cultures of the world (Pfeifer 1994). In this study, such causes were suspected by only 12% of the relatives. Where supernatural causes were cited, they were almost always implicated along with other causes, with only 2% of the families naming it as the only cause. This negates the stereotyped notion that beliefs in

Table 5 Discriminant function analysis

Attribution	Independent variable	Wilk's λ	Significance
Supernatural cause	Patient age	0.9685	0.0257
	Patient education	0.9466	0.0143
	Relationship nature	0.9228	0.0061
	Relationship nature	0.9119	0.0067
	Patient sex	0.9053	0.0093
Psychosocial stress	Patient education	0.9802	0.0777
Personality defect	Relationship nature	0.9663	0.0210
Multiple causes	Relationship nature	0.9916	0.2532
Heredity	Patient sex	0.9461	0.0033
	Relationship nature	0.9351	0.0055
Brain dysfunction	Relationship nature	0.9841	0.1145
	Duration of illness	0.9762	0.1553
Fate or God's will	Relationship nature	0.9195	0.0003
	Patient age	0.9116	0.0008
	Duration of illness	0.9051	0.0015
No cause	Patient sex	0.9776	0.0609
	Relationship nature	0.9585	0.0375
	Patient age	0.9443	0.0314

supernatural causes are widely prevalent in non-Western societies like India.

Psychosocial stress was the cause of schizophrenia most often named by the relatives, and was cited as the sole cause by many of them. This compared to only one-third or less of German families interviewed in an earlier study (Angermeyer and Matschinger 1996). The responses from Indian families were more similar to those of Turkish families in a study by Karanci (1995), who felt stress (50%) and family conflict (40%) were the main causes of the illness. Conversely, personality defect in adjustment was mentioned as the cause of the illness by only one-fifth of the relatives in this study, akin to the Turkish counterparts and in contrast to the German families, nearly half of whom named "weak mental constitution" as the cause (Angermeyer and Matschinger 1996). This trend could reflect a basic difference in the attitudes of people living in different regions and socio-economic conditions towards how much control ill persons have over themselves and their life situations. This was indicated in a recent study in Germany comparing people from the erstwhile East and West Germany (Angermeyer and Matschinger 1999). The idea that self-induced stress (because of a personality defect) may be of aetiological importance was more frequently endorsed in the West, reflecting the more competitive attitude prevailing in there. By contrast, the people from the East, for whom solidarity represented an important value, more often considered psychosocial stress a risk factor for mental illness.

A minority of the relatives in our study named organic factors as a cause for schizophrenia, a far lower proportion than among the German families. The reason for the lack of emphasis on organic brain dysfunction became clear while interviewing the families. The respondents had seen their relative develop the illness when they were in good physical health. They could not imagine a "brain disorder" might be the cause in the absence of symptoms like fits, paralysis, and loss of consciousness which, to them, are clear signs of brain dysfunction. Beliefs about cause of illness are said to be influenced by the implications of such beliefs. Angermeyer and Matschinger (1996) observed that the family members' preference for biological factors could represent their avoidance of guilt over having caused the illness in some way. This phenomenon may not apply to the Indian families. Only a few families named heredity as a cause. It was significant, but understandable, that only those who had another family member with a mental illness named heredity as a possible cause.

Attributing the illness to fate/God's will was the least frequent of all responses. This does not tally with the oft-quoted Indian stereotype of passive acceptance of destiny as a way of life. In this context, it is of interest to note that a study in Germany using a new analytical method to establish a latent dimension of the order of preference regarding the causes offered as an explanation for the development of mental disorders showed that, among the 11 causal factors arranged along an unfolding scale, the centre was characterised by the item God's will or fate, with psychosocial stress at one pole and personality defect at the other pole of the scale (Matschinger and Angermeyer 1996).

Multiple causation was a frequent response noted in this study. The common combination of factors were heredity + stress, and personality defect + stress. Both point toward the vulnerability (heredity/personality defect)-stress causation of schizophrenia model proposed by Zubin et al. (1983) and other workers, which assumes that schizophrenia occurs in a vulnerable individual, but the vulnerability requires a life stressor (either exogenous or endogenous) to trigger an episode.

In this study, 14% of the relatives could not name a cause, despite being given a wide choice to select from. Realistically speaking, this may not be surprising, because even professional information available on the matter often begins along the lines of "… the exact cause of schizophrenia is not clear, though factors like…".

Factors related to attribution

There was a significant gender difference in causal attribution. The cause was more often said to be unknown when the illness occurred in a male patient. The reasons for this gender difference were not

apparent to us. Heredity was more often blamed in female patients. As mentioned earlier, all families who mentioned heredity as the cause had one other family member with a mental illness. In the sample studied, the proportion of women who had a family history was probably larger than among the men. The explanation for this, in turn, could lie elsewhere. Female patients are known to underutilise psychiatric health services (Hambrecht et al. 1992), but the presence of a similar problem in another relative could have influenced the family to bring the patient for treatment. This could have increased the proportion of female patients with a positive family history in the study population, and thereby explain the observation made.

Education of the patient was seen to influence the way the relatives think about the cause of schizophrenia. Psychosocial stress was more often reported as causative in patients with a higher education. A closer look showed that the relatives frequently felt that the patient broke down because of a difficulty in coping with higher studies/higher work responsibility.

Educational level of the informants also had a bearing on the causal attribution made by them. Relatives who had less than college education more often blamed supernatural causes for the illness. Beliefs in supernatural causes have previously been found to be more frequent among the less-literate, though not uncommon among educated populations (Banerjee and Roy 1998). The naming of heredity or multiple causes for the illness by relatives with a university education could be due to their better exposure to information.

The duration of illness was associated with attribution of heredity and personality defect as causes, the former with longer duration and the latter with shorter duration. It is a general impression that hereditary features are more enduring than acquired ones. Hence it seems natural that when an illness has been ongoing for many years, heredity is implied as the causal factor, while personality defect in adjustment is implicated when the illness is of shorter duration. In the early years of the illness, the family may view it as merely a difficulty in adjustment, and then later change their views as the illness becomes chronic and can no more be seen as an adjustment problem. Duration of illness, however, did not feature as a discriminating variable for these attributions.

The relationship of the relative to the patient was associated with some of the causal attributions made. Relatives who named personality defect as the cause were differentiated from others by this single variable. The nature of relationship with the patient could relate to better understanding of the premorbid personality of the patient, and thereby determine the causal attribution made. Multiple causes were more often mentioned by parents than others. The parents were obviously more aware of multiple factors acting upon the patient at various stages in the patient's life and hence were able to name more than one cause for the illness.

There were some limitations that should be considered in interpreting the findings of this study. The population studied was urban with a relatively high level of literacy compared to the general level in the region, in contact with the health care service for a long period and probably exposed to information about the illness from various sources. This could be the main reason why beliefs in supernatural causes were less frequent. Such a belief could be highly prevalent in the typical low-literate rural population of India, who have little or no contact with proper health services. The relationship between education and awareness of cause was evident in this cohort.

The causal attribution made by the relatives may also not be a static one, and could change with the progress of the illness from the acute phase to the chronic state. The opinions expressed by the relatives about causes of schizophrenia in this study could reflect the fact that the illness had been present for a long duration and the family had therefore had much time to consider and weigh the options before identifying a cause.

Another important limitation in terms of methodology was that the diagnosis was not made using a structured interview format, though specific criteria were used. However, we feel that the diagnoses are unlikely to have been greatly at fault, as the clinical status of the patients had been continuously monitored and frequently evaluated over many years at the study centre by the authors.

Bias of response from the relatives because of the interviewer was minimised by allowing them to name more than one cause and avoiding direct questions about whether they believed in a supernatural causation of illness.

Another possible confounder is the exact understanding of the term "supernatural", which could differ between cultures. Translated into the local language, its meaning may be distorted, influencing the response from the relatives. The term "supernatural" used in this study was a term used by the authors to group together beliefs in phenomena like demons, sorcery and evil spirits, readily expressed by the families. The respondents were asked whether they believed in forces like demons and evil spirits, but were not asked directly whether they believed in "supernatural causes". Hence the problem of translation and misunderstanding of the term by the respondents did not arise.

In conclusion, it was evident from the study that the attribution of supernatural causes to schizophrenia by the relatives is not as widespread in India as generally claimed, at least in the urban areas. The

causal attributions made were probably related to the education level and level of contact with health services. The attributions made by the relatives studied were often comparable to the available factual information about the illness, though there was overemphasis on psychosocial stress as the causal factor. This was understandable given the situation that most of the respondents were not exposed to structured information inputs about the known causes for the illness. The observations here indicate that, in dealing with the families of schizophrenia patients, their existing knowledge about the causes of schizophrenia should be evaluated without applying the stereotypical description of them believing in supernatural causes of the illness.

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