Original Article

Bizarre Delusions: A Qualitative Study on Indian Schizophrenia Patients

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ABSTRACT

Background: Delusions are an important symptom for the diagnosis of schizophrenia (SZ) in both the commonly used international classificatory systems - the Diagnostic and Statistical Manual of Mental Disorders IV (DSM IV - American Psychiatric Association, 2000) and the International Classification of Diseases, X (ICD X - World Health Organization, 1992). Of special significance are "bizarre delusions" the presence of which is alone sufficient for a diagnosis of SZ in DSM IV. In an attempt to find out the frequency, criteria for classification, and other clinical aspects of bizarre delusions and justification of their importance in the diagnostic system, this retrospective study was conducted. **Methodology:** Records of 1952 Indian patients affected with SZ, recruited for various research projects at one center were included in this study. All had a diagnosis of DSM IV SZ; all symptoms of SZ from the Diagnostic Interview for Genetic Studies were asked regardless of the presence of specific symptoms - like bizarre delusions - sufficient for diagnosis. **Results:** The prevalence of bizarre delusions was 2.56%. Five themes, identified on analyzing their contents are described. Main themes were unnatural, bodily sensation, change in identity, sexual, and religious. **Conclusions:** These themes were culture based, but definitely out of context, excessive or extremely odd. Moreover, the rarity of bizarre delusions makes it difficult to include them as a sole criterion for diagnosis.

Key words: *Bizarre delusion, qualitative analysis, schizophrenia*

INTRODUCTION

The Diagnostic and Statistical Manual of Mental Disorders (DSM) IIIR refers to "bizarre delusions" as the sole criterion "A" for diagnosing "characteristic psychotic symptoms in the active phase" of schizophrenia (SZ).[1] DSM IIIR defined "bizarre delusions" as "involving a phenomenon that the person's culture would regard as totally implausible, e.g., thought broadcasting, being controlled by a dead person.[1] Bizarre delusion was initially described as either non-sensical or incomprehensible. The definitions of bizarre delusions in DSM III and DSM IV and their text revisions focused on "physical (or logical) impossibility, general acceptance in cultural context, and overall implausibility or incomprehensibility with emphasis on grounding in the ordinary experience."[2] Currently, bizarre delusions are defined by the several characteristics: Physical or logical impossibility, out of the patient's socio-cultural context, development unexplained by the person's

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"biographical antecedents," incomprehensible and not derived from ordinary situations.[3] The presence of one or more bizarre delusions is sufficient for diagnosis of SZ when present alone; and is valid for DSM IV as long as dysfunction and duration criteria are satisfied.[4]

Clinically, patients with bizarre delusions are not easily separable as a sub-group. They may manifest positive symptoms more severely.[5] Those with or without Schneiderian first rank symptoms (SFRS) did not stand out as a clinically distinguishable sub-group.[6] The reliability for bizarre delusions was lower than for SFRS and only 7.45% of the sample with reported bizarre delusions was diagnosed with SZ.[7] The presence of bizarre delusions is relatively rare among SZ patients (4-8%).[3,7]

Currently, interest in the study of phenomenology of bizarre delusions has slackened as their validity and reliability may be questionable. Odd beliefs bordering on delusions may be present in the large groups of the general population, at least 25% strongly believed in one "delusion like belief."[8] The spectrum from odd beliefs to delusions may be continuous rather than dichotomous.[9] Three types of "bizarreness" have been described in the literature: Objective, cultural, and individual.[10] They may be bizarre with reference to "objective standards of what is not reasonable enough to be believed."[11-14,2] When the belief is not in keeping with the prevalent culturally held beliefs, then the delusion is "culturally bizarre." Here, the objectivity does not lie in what is true, rather what people of a particular culture believe to be true.[15,2] Individual bizarreness occurs when there is an apparent break from the pre-conceived idea about the individual and his beliefs.[16,17]

The American Psychiatric Association (2012) has taken note of the poor reliability and predictive validity of bizarre delusions and has proposed to remove these criteria from diagnosis of SZ. In the category "B 01 Delusional Disorder;" however, a specifier of bizarre or shared delusions has been retained.

Considering the paucity of recent data on content and clinical correlates of bizarre delusions over the world, the present study was undertaken in a different cultural context.

METHODOLOGY

This retrospective, record based study was conducted at the Department of Psychiatry, PGIMER-Dr. Ram Manohar Lohia Hospital, New Delhi. Ethical permission was obtained from the Institutional Ethics Committee. Records consisted of Diagnostic Interview for Genetic Studies (DIGS) interviews and available medical records of DSM IV diagnosed SZ subjects recruited in various research projects from 1996 to 2011. All subjects were interviewed using all the sections of the DIGS. All questions from the DIGS "psychosis" section K, regardless of whether the initial "screening" questions were positive or not and regardless of the presence of bizarre delusions or other specific groups of symptoms such as delusions or hallucinations were asked. This is a standing policy of the research group in order to obtain all aspects of psychopathology. Verbatim written reports were available in all DIGS records. Diagnoses were determined after presentation and discussion in clinical reliability meetings with board certified psychiatrists familiar with DSM IV criteria. During these meetings, types and bizarreness of delusions were determined.

At the end of the "delusions" questions (psychosis section K of the DIGS question numbers 5-18), the DIGS has a specific question on how bizarre the delusions are – "not at all," "somewhat bizarre," and "definitely bizarre" (question number 23). The DIGS manual presents broad guidelines on how to define bizarreness of delusions. All records were analyzed for the presence of bizarre delusions, based on the subject's verbatim reply, previous reliability discussion, and DIGS manual.

For this study, all available records (n=1952) were individually scrutinized again and those marked as "definitely bizarre" delusions (n=85) were separated. The narratives (section K of the DIGS) of all 85 records were read through and discussed in consensus meetings. At second glance, some records, which were previously classified as "definitely bizarre" were reclassified as "somewhat bizarre" or "not at all bizarre" and excluded from qualitative analysis. The number of "definitely bizarre" records came down to 50. The narratives of these reclassified delusions were given to three different mental health professionals, not members of the initial reliability group, to rate for bizarreness. Their ratings of the delusions as "bizarre" or "not at all bizarre" matched with the ratings of the reliability group.

For quantitative analysis the authors included all available records (n=1952). Variables included for quantitative analysis were age, gender, education, age at onset of illness, duration of illness, course of illness, global assessment of functioning (GAF) score at worst point of illness, worst point during current episode, during the past month (from sections demographics, psychosis, and Operational Criteria, checklist for psychotic illness (OPCRIT) of the DIGS). The records marked as "definitely bizarre" (n=50) were used for

qualitative analysis and coded according to themes extracted from the DIGS summary or from the verbatim. Five broad categories of themes were derived based on the most frequent themes presented in the records. These themes are: "Bodily sensation," "unnatural," "sexual," "change in identity," and "religious."

RESULTS

The total sample (*n*=1952) was divided into three groups based on bizarreness of delusions as: not at all bizarre (*n*=1561), somewhat bizarre (*n*=341) and definitely bizarre (*n*=50), with the significance level at 0.05 [Table 1].

The distribution was highly skewed toward not at all bizarre. The gender distribution was similar in all three groups. The three groups were statistically similar in all characteristics except age, education, age of onset, current episode GAF, and GAF at worst point of illness.

There were five major themes in the narratives of the subjects experiencing "definitely bizarre" delusions - bodily sensations, unnatural, sexual, change in identity, and religious. All beliefs were false, but firmly held against strong evidence to the contrary and were both impossible and implausible with respect to the socio-cultural background. Definitions were developed for each theme.

Bodily sensations

This group included a False and firm belief suggestive of any kind of physical change and/or sensations in body parts. For example: "there were worms inside the nose and the nerves were eaten up, everything became sick." This belief led to feelings that now his brain had been destroyed and he could not think properly. Another participant stated: "The heart is moving round the clock in different areas of the trunk." Another said "My hands are changed into cat's paws." Another description was "My rib-cage is left behind in the bathroom; while I was bathing it got washed away."

Unnatural

This was a false and firm belief suggestive of any natural process or phenomenon occurring in an unnatural way. Subjects described their experiences as, "Bones and blood are raining from the sky so (her) would be husband met with an accident and all his bones and intestines are out." "Some rays are there in me, which create magnetic field and I have the power to affect TV signals. Body is producing charge; whenever I touch anything I get electric current. Some heavenly body comes and makes me powerful and communicates with me." "I have some special power, if I call the Sun then it will come to me, whenever I look at the Sun, it smiles back at me". Another illustration is "A ray directly from "Delhi University (DU)" used to teach me the engineering course."

Sexual

This group included a false and firm belief suggestive of any form of sexual relationship between human, animals, and/or supernatural beings. Subjects described their experiences as, "two teachers did something and made me male" (a female patient), "semen is inserted inside my body and I will be killed in 2 days" (a male patient); "if I marry, (my) penis will bleed and I might die of that." "Girls have cancer in their mouth and if I kiss them I will get surely ill (AIDS) and might vomit out." "Goddess Durga is my wife." This patient kept a photograph of the goddess Bhagwati, kissed it and made sexual gestures at it (considered strange and even sinful in his society).

Change in identity

This group included a false and firm belief suggestive of any shift from an individual's and/or others' primary identity to a secondary one, living or dead. Subjects described their experiences as, "I am a dog" and ran here and there like a dog acting on his beliefs. "Some ladies came and changed (their) body with me." "I am a Greek Princess or Sita. I am in 1500 BC. I belong to aristocrat family in France. I am a teacher for French culture, I am a spirit." "I am a fairy and I am present in all human beings."

Table 1: Socio-demographic and clinical characteristics of the sample

Variables	Not bizarre (*n*=1561)	Somewhat bizarre (*n*=341)	Definitely bizarre (*n*=50)	*P* values for ANOVA/χ^2
Gender (male/female) %	55.9/44.0	60.3/39.1	60/40	0.24
Age in years (mean±SD)	33.03±11.51	31.72±10.88	30.59±9.47	0.05*
No. of years in school (mean±SD)	10.02±4.49	11.02±4.20	11.32±3.99	0.00*
Age at onset (mean±SD)	25.04±8.82	23.79±8.40	23.10±7.35	0.02*
Duration of illness in weeks (mean±SD)	255.70±255.32	254.42±212.65	327.02±226.73	0.24
Current episode GAF (mean±SD)	23.64±8.90	22.18±8.80	22.19±8.03	0.02*
Past month GAF (mean±SD)	38.15±17.31	37.11±18.02	34.92±14.92	0.29
GAF at worst point of illness (mean±SD)	23.77±5.14	21.9±4.55	22.71±5.91	0.01*

*Significant at 0.05 level; ANOVA – Analysis of variance; SD – Standard deviation; GAF – Global assessment of functioning; (*N*=1952)

Religious

This group included a false and firm belief suggestive of exceptional or odd religious practice and/or affiliation. Subjects described their beliefs based on their religion. One patient said, "Hanumanji (the Monkey God) is there somewhere" and she started touching the feet of all monkeys. This person changed the religious belief to a level of implausibility and so it was considered bizarre. Another said "Hanumanji is coming into me. Shivji and Parvatiji are inside me – half-half". This may have been derived from the Hindu belief of Ardhnareshwar (half Shiv - male, and half Parvati - female), but the delusion was bizarre as the patient believed the gods actually went inside him as real human beings. "I put pig leather on my chest so that Muslim Gods and Goddesses do not harm me" (while it is generally known that Islam has no gods or goddesses). "Sun God has come to meet me and I am talking to him." So she used to climb on the trees in the day time in the hot summer season in order to talk to the sun.

DISCUSSION

This retrospective study describes the clinical correlates and content of bizarre delusions in a sample of subjects diagnosed with SZ in an Indian tertiary care hospital. The prevalence of bizarre delusions in this sample was 2.56% - an almost negligible proportion and not significantly different from other subjects in this sample in most parameters examined. Those with bizarre delusions were worse in their functioning (as revealed by GAF scores) at the worst point of their illness, and were ill for the longest duration of time.

Bizarre delusions are caused by impaired reasoning hence are not restricted to particular social categories, and delusional thinking is liable to be a feature of many "domains of discourse."[18] Objective evidence cannot shake these beliefs because when brain function is impaired we cannot follow logic, and chains of reasoning are disrupted and hence even objective evidence does not have the "power to persuade."[18] Some authors proposed a deficit model of bizarre delusions, which states that delusions arise when the normal cognitive system which people use to generate, evaluate, and then adopt beliefs is damaged.[19] Mere bias is inadequate to explain bizarre delusions, which defy commonsense and persist despite overwhelming rational counter-argument. They proposed that in particular, two deficits must be present in the normal cognitive system to explain bizarre delusions: (1) There must be some damage to sensory and/or attentional-orienting mechanisms, which causes an aberrant perception - this explains the bizarre content of the causal hypothesis generated to explain what is happening; and (2) there must also be a failure of normal belief evaluation - this explains why a hypothesis, implausible in the light of general commonsense is adopted as belief.

An attempt was made to classify the delusions into five themes, which are presented below. The bizarre delusions from which they were derived were stated in the results section.

Bodily sensations

Bodily changes occur in everyone due to various reasons, such as growth, accidents, and injuries. Subjects' descriptions of changes in this category and their explanations for these changes were bizarre. For instance, when we bathe we do wash away all the accumulated dirt, but while bathing our internal organs or body parts (e.g., the rib cage) are not washed away. Women like decorating themselves and grow their nails, paint them, but they do not believe their hands resemble "cat's paws." We all have a body clock, which is like an internal alarm that keeps us oriented to the time of the day, but no organ (e.g., the heart) physically moves within our body.

Unnatural

Here, the basic phenomenon was itself bizarre. For instance rain generally comprises of some form of water and not any living beings; our body is not magnetic and is not constituted to create electric fields; knowledge cannot be imparted via "a ray," so a ray directly imparting knowledge is impossible and implausible. The person cannot critically evaluate direct evidence to evaluate the evidence critically (such as a ray coming and imparting knowledge).

Sexual

Here, subjects appeared to perceive a threat either to their genitalia or to their sexual identity. The subjects generalized their beliefs by projecting them to the opposite sex whose perceived intention was to cause harm. The process by which they could cause harm was bizarre. Furthermore, the resulting outcome of the harm was impossible and implausible. For instance, we all know that AIDS is transmitted through blood transfusion. However, a person affected by the some other disorder (e.g., cancer) cannot transmit AIDS through sexual contact (e.g., kissing). At some level, it could be thought of as a myth present even in healthy individuals. However, the explanation that a person affected with one disorder could cause another person to have a totally different disorder with different symptoms is implausible and impossible.

Change in identity

Changes in our physical appearance occur in our life span as we go from one life stage to the next. However, the basic personal identity remains the same.

The change is in the social role and is a part of our development, whereas in this category subjects claimed to possess identities that were in no way related to their basic identity in terms of places, persons, and time frames. This was unexplained by biographical antecedents.

Religious

Here, the bizarreness was reflected in the behavior. While some actions (such as feeding monkeys believing them to be related to the monkey god Hanuman) is a recognized general practice, the way the patient generalized this belief with conviction and acted on it made it bizarre. For instance, Hanumanji is a Hindu God and is depicted as a monkey and prayers are offered to him. However, in the Hindu culture all monkeys are not treated as gods and prayers are not offered to all of them. In addition, various religions in India consider various animals sacred and do not harm them, but not necessarily worship them wherever and whenever they are seen.

These themes were culture based, but definitely out of context, excessive or extremely odd. The clinical correlates of the subsample with "definitely bizarre" delusion were not significantly different from the group without bizarre delusions. Moreover, the rarity of bizarre delusions makes it difficult to include them as a sole criterion for diagnosis.

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