Religious delusion

An observational study of religious delusion in a population of 313 acute psychiatric inpatients

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Summary

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Objective: Little is known about the clinical features associated with religious delusion and how religious delusion may differ across various diagnostic groups. The empirical research on this topic is relatively scanty. The primary purpose of this study was to detect the demographic, sociocultural, and clinical features of patients with religious delusion.

Method: We studied 313 patients consecutively admitted to an emergency psychiatric ward and compared patients with and without religious delusion.

Results: Patients with religious delusion were older, had started their first neuroleptic treatment earlier, had suffered less acute psycho-social stressors, and had presented a worse global functioning during the last year than patients without religious delusion. Furthermore, they received higher SAPS, BPRS total and BPRS psychotic cluster scores and were treated with a higher mean number of different neuroleptics during current hospitalisation. Religious delusion was not related to any diagnostic group.

Conclusions: Our results suggest an alternative outlook on delusions that de-emphasises the importance of diagnosis and looks instead at delusions and other major symptom areas as psychopathological dimensions.

Keywords: emergency psychiatry; delusion; religious delusion; religion and psychology

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Introduction

Delusions are common and main symptoms in many neuropsychiatric disorders. Nevertheless, as Spitzer [1] notes, their nature is poorly understood, their aetiology is unknown, and their nosological status remains problematic. Furthermore, despite the frequency and the importance of delusions, a relatively small amount of research has been conducted in this field [2]. Questions about how delusions may differ across diagnostic groups are still unanswered.

Some forms of delusion are considered to be characteristic of schizophrenia or bipolar disorder, however, no delusional content is specific of these illnesses. Traditionally, religious delusion, with or without hallucinations, has been associated with schizophrenia, affective psychoses, complex partial seizure disorder and drug-induced psychoses. Recent reports have associated religious delusion with epileptic postictal psychosis [3], psychoses characterised by self-inflicted injuries [4–6], psychoses induced by general medical illnesses [7, 8], and mystical-religious fervor [9].

Although religious delusion has regularly been reported throughout the history of neuropsychiatry, surprisingly, there is no systematic study of religious delusion in unselected populations of psychiatric patients. We conducted computerised searches of MEDLINE back to 1966, but we did not find empirical studies on this subject.

As our hospital is situated at the centre of Rome, near St. Peter's Basilica, we have the opportunity to visit an unusually large number of patients with religious delusion. Many of these patients are referred to our centre because they display bizarre, shameful, or dangerous behaviour associated with their psychotic symptoms nearby the Basilica. Visitors to St. Peter's Basilica or to the Vatican displaying an abnormal behaviour are interviewed by town police officers and then referred to our hospital if they are considered mentally ill. This prompted us to undertake the present study to detect the demographic, sociocultural, and clinical features of patients with religious delusion

and to compare them with the other patients concomitantly admitted to our ward.

Method

The study involved 313 psychiatric patients admitted to a 12-bed Psychiatric Intensive Care Unit (PICU) of a public hospital providing assistance to an urban catchment area. The patients examined were all those consecutively admitted between 26th May 1994 and 10th July 1995. Basic characteristics were ascertained for each patient as follows: sex, age, years of education, employment, marital status, and social class. Patients' social class was rated according to an original scale (available on request) including the following three items (rated 1–5): *patient's employment, patient's residence, and family head's employment*. Current psychopathology was assessed using the Brief Psychiatric Rating Scale (BPRS) [10], including 18 items rated from 0 to 4 [11], the Scale for the Assessment of Positive Symptoms (SAPS) [12], the Scale for the Assessment of Negative Symptoms (SANS) [13], the Mini-Mental State Examination (MMSE) [14], the Global Assessment of Functioning Scale (GAF) [15], the Severity of Psychosocial Stressors Scale: Adults (SPSSA), Acute events and Enduring circumstances [16]. Current dose of neuroleptic medication was converted to chlorpromazine (CPZ) equivalents [17], current dose of benzodiazepines to diazepam equivalents [18], current dose of anticholinergic dose to biperidene equivalents [17].

Neurological examination included the use of the Abnormal Involuntary Movement Scale (AIMS) [19], the Unified Parkinson's Disease Rating Scale (UPDRS) [20], and the Barnes Akathisia Scale [21]. Furthermore, for purposes of data analysis, we combined the BPRS symptom scales into two summary scores: (1) *psychotic cluster*, which includes *conceptual disorganisation, hostility, suspiciousness, hallucinatory behaviour*, and *unusual thought content*; (2) *withdrawal-retardation cluster*, which includes *motor retardation, emotional withdrawal*, and *blunted affect.*

We made psychiatric diagnoses according to DSM-IV [15]. At the end of each individual clinical evaluation, we met to formulate final consensus diagnoses, based on clinical interviews, review of case notes, and family-history data. Since we could not get trustworthy data about the patients' age at onset of the disorder, we considered patients' age at first neuroleptic administration as a more reliable indirect measure of length of illness and of neuroleptic exposure. Whenever possible, patients' relatives were directly interviewed. Many patients included in this study had already been admitted to the PICU one or more times in the previous 6 years. Therefore, the longitudinal course of their psychiatric illness was known to the authors. Patients' evaluations were undertaken as soon as possible after admission to the ward. The average interval between admission and examination was 1.9 days (SD = 2.2).

Patients with a score >1 at the item *Religious delusion* of the SAPS (at least, mild severity) were considered *affected* by religious delusion, patients with a score of 0 were considered *not affected*, and patients with a score of 1 (dubious) were excluded from the analysis. We distinguished the patients with religious delusion living in the province of Rome from those living outside because of the different way of referring them to our PICU.

Finally, we considered patients' violent behaviour against persons (including self-inflicted injuries), and rated patients' behaviour according to a hierarchy [22], from no aggressive behaviour to serious physical violence, considering clinical examination, case sheets, and nurses' reports.

Statistical analysis was conducted by means of t-test on continuous variables and with Fisher exact test or χ^2-test on categorical variables. $P < 0.05$ was considered to be statistically significant.

Results

Among the 313 cases (271 patients), 189 were women and 124 men. Table 1 shows the demographic and clinical characteristics of the 313 cases, table 2 their respective diagnoses. At the item *Religious delusion* of the SAPS, 63 (20.1%) cases (52 patients) received a score >1, 237 (75.7%) cases (206 patients) a score of 0, and 13 (4.2%) cases (13 patients) a score of 1. In particular, 13 (4.2%) cases received a score of 2 (mild), 16 (5.1%) a score of 3 (moderate), 25 (8.0%) a score of 4 (severe), and 9 (2.9%) a score of 5 (extremely severe). Twenty-seven (42.9%) of the 63 cases with religious delusion were men and 36 (57.1%) women ($\chi^2 = 0.197$; fd = 1; $p = 0.657$).

Among the 63 cases with religious delusion, 24 cases (23 patients) received a diagnosis of Schizophrenia, 2 cases (2 patients) of Schizophreniform Disorder, 12 cases (8 patients) of Schizoaffective Disorder, 14 cases (9 patients) of Bipolar Disorder, 2 cases (2 patients) of Major Depression, 2 cases (2 patients) of Delusional Disorder, 2 cases (2 patients) of Brief Psychotic Disorder, 3 cases (1 patient) of Psychotic Disorder related to Epilepsy, 1 case (1 patient) of Psychosis NOS, and 1 case

Table 1 The demographic and clinical characteristics of the 313 cases.

Variable	mean (± SD)	range	cases*
Age (years)	41.8 (± 14.1)	18–87	313
Education (years)	9.8 (± 3.8)	0–21	313
Social class	8.3 (± 2.9)	3–15	306
GAF	24.4 (± 8.2)	5–58	313
BPRS (total)	16.0 (± 6.8)	2–38	313
BPRS (+)	5.8 (± 4.0)	0–19	313
BPRS (–)	3.3 (± 2.5)	0–11	313
BPRS (host-agit)	1.1 (± 1.5)	0–7	313
SAPS	29.7 (± 18.6)	1–110	313
SANS	38.9 (± 22.1)	1–102	313
MMSE	25.8 (± 3.9)	5–30	293
Akinesia	1.2 (± 1.2)	0–4	299
Akathisia	0.4 (± 0.9)	0–4	303
Rigidity	0.5 (± 0.7)	0–3	297
CPZ-equivalents (mg)	568.2 (± 559.6)	20–6088	266
DZP-equivalents (mg)	18.8 (± 12.8)	4–110	188
BIP-equivalents (mg)	4.0 (± 0.8)	1.7–8	50
Lithium (mg)	900.0 (± 226.8)	300–1500	29
CBZ (mg)	573.3 (± 172.1)	200–1000	30

BPRS (+): BPRS psychotic cluster, which includes *conceptual disorganization, hostility, suspiciousness, hallucinatory behavior,* and *unusual thought content.*

BPRS (–): BPRS withdrawal-retardation cluster, which includes *motor retardation, emotional withdrawal,* and *blunted affect.*

BPRS (host-agit): BPRS hostility-agitation cluster, which includes *hostility,* and *excitement.*

CPZ = chlorpromazine

CBZ = carbamazepine

DZP = diazepam

BIP = biperidene

* Since neither all subjects underwent all of the tests included in our panel nor all patients took all the considered drugs, the number of cases considered varies from variable to variable.

(1 patient) of Dissociative Disorder (table 3). Religious delusion was not significantly related to any diagnostic group.

Patients with religious delusion were significantly older and had started their first neuroleptic treatment earlier than patients without religious delusion. In addition, patients with religious delusion had suffered less acute psychosocial stressors and had presented a worse global functioning during the last year before the present examination. Furthermore, they received higher SAPS, BPRS total and BPRS psychotic cluster scores and were treated with a higher mean number of different neuroleptics during current hospitalisation (table 4). Since patients with religious delusion by definition had a score at the SAPS item *Religious delusion* (>1) higher than patients without religious delusion (0), it was conceivable to suspect that the significant difference in SAPS score between the two groups could be due to our a priori classification criteria. Therefore, we also compared the two groups without considering the score of the SAPS item *Religious delusion* in the analysis. However, the difference in the SAPS total score between the two groups (41.1 [±18.9] vs 25.2 [±16.0]) remained highly significant ($t = 6.747$; $fd = 298$; $p = 0.000$).

There was no significant difference between male and female patients with religious delusion, except a higher CPZ daily dose in men. However, a similar difference was present between male and female patients without religious delusion reflecting the necessity of using higher doses of neuroleptics in men.

Table 2 Diagnoses of the 313 cases.

Principal diagnosis	all	males	females
Disorganised schizophrenia	10	4	6
Paranoid schizophrenia	39	14	25
Undifferentiated schizophrenia	39	25	14
Residual schizophrenia	13	2	11
Schizophreniform disorder	16	11	5
Delusional disorder	9	4	5
Brief psychotic disorder	3	2	1
Psychotic disorder due to a general medical condition	4	3	1
Substance-induced psychotic disorder	1	1	0
Psychotic disorder not otherwise specified	11	3	8
Schizoaffective disorder	29	9	20
Bipolar disorder	79	24	55
Depressive disorder	21	2	19
Dysthymic disorder	3	1	2
Mood disorder due to general medical condition	2	2	0
Obsessive-compulsive disorder	1	0	1
Dissociative disorder	2	1	1
Cluster A personality disorder	4	4	0
Cluster B personality disorder	7	2	5
Personality disorder not otherwise specified	5	2	3
Alcohol dependence	2	2	0
Drug intoxication	5	1	4
Adjustment disorder	3	2	1
Delirium	1	1	0
Dementia	1	0	1
Mental retardation	1	1	0
Pervasive developmental disorder	1	1	0
Unspecified mental disorder (non psychotic)	1	0	1
Total	313	124	189

In this sample, religious delusion was not associated with self-inflicted injuries.

Religious delusion was more frequent and severer among the patients living outside the province of Rome. Fifty (17.7%) of the 283 cases living in the province of Rome and 13 (43.3%) of the 30 outside living cases had religious delusion (Yates corrected $\chi^2 = 9.57$; $p = 0.002$). Outside living cases with religious delusion received a mean (±SD) total SAPS score of 56.4 (±22.0), while cases residents in the province of Rome received a mean (±SD) total SAPS score of 41.5 (±17.4) ($t = 2.951$; $fd = 61$; $p < 0.012$). At the item *Religious delusion* of the SAPS, outside living cases with religious delusion received a mean score of 4.3 (±0.6), while cases residents in the province of Rome received a mean score of 3.3 (±0.9) ($t = 3.800$; $fd = 61$; $p < 0.001$). However, when the cases living outside the province of Rome were excluded from the analysis, we found the same significant differences between patients with and without religious delusion. On the contrary, we found no significant difference between patients without religious delusion living in or outside the province of Rome. We also analysed the data, excluding all patients affected by epilepsy. The results did not change, however.

Table 3 Religious delusion in different diagnostic groups.

Diagnosis	patients with religious delusion	patients without religious delusion	dubious	total
Schizophrenia and Schizophreniform disorder	25	70	6	101
Schizoaffective disorder	8	14	1	23
Mood disorder	12	69	2	83
Delusional disorder	2	6	0	8
Brief psychotic disorder	2	1	0	3
Other diagnoses	3	47	3	53
Total	52	207	12	271

Table 4 Differences between patients with and without religious delusion.

Variable	patients with religious delusion	patients without religious delusion	t-test	fd	p
Age (years)	46.9 (± 13.7)	40.7 (± 14.0)	3.124	298	0.002*
Years of education	10.5 (± 4.2)	9.6 (± 3.7)	1.659	298	0.098
Social class	7.8 (± 2.9)	8.4 (± 2.9)	1.553	291	0.122
Interval between admission and examination	1.4 (± 1.3)	2.0 (± 2.3)	1.920	298	0.056
Acute stressors	1.0 (± 0.8)	1.5 (± 1.2)	2.566	298	0.011*
Enduring stressors	2.4 (± 1.3)	2.6 (± 1.3)	1.315	298	0.190
Present GAF score	23.0 (± 7.9)	24.9 (± 8.3)	1.624	298	0.105
Past year best GAF score	39.8 (± 16.7)	46.0 (± 16.9)	2.603	298	0.010*
BPRS total score	19.0 (± 7.4)	15.1 (± 6.3)	4.299	298	0.000*
BPRS+ score	8.8 (± 3.4)	4.9 (± 3.7)	7.419	298	0.000*
BPRS– score	3.5 (± 2.5)	3.2 (± 2.5)	0.705	298	0.481
SAPS	44.6 (± 19.2)	25.2 (± 16.0)	8.187	298	0.000*
SANS	40.1 (± 20.7)	38.1 (± 22.3)	0.655	298	0.513
MMSE score	26.2 (± 3.5)	25.7 (± 4.1)	0.378	282	0.883
Akinesia score	1.3 (± 1.2)	1.2 (± 1.2)	0.592	286	0.554
Akathisia score	0.3 (± 0.7)	0.4 (± 1.0)	0.909	289	0.364
Rigidity score	0.5 (± 0.8)	0.5 (± 0.7)	0.277	284	0.782
Neuroleptics dose	620.2 (± 469.3)	524.2 (± 444.0)	1.443	251	0.150
Benzodiazepines dose	17.4 (± 8.1)	18.9 (± 13.4)	0.655	178	0.513
Anticholinergic dose	4.0 (± 1.4)	4.0 (± 0.5)	0.072	47	0.943
Age at 1st neuroleptic treatment	32.6 (± 12.9)	30.4 (± 12.1)	1.260	276	0.209
Years since first neuroleptic treatment	14.2 (± 10.8)	9.7 (± 9.0)	3.324	276	0.001*
Number of neuroleptics	1.3 (± 0.6)	1.1 (± 0.7)	2.931	298	0.004*

Mean dose (± SD); * = statistically significant

Discussion

Diagnosis and clinical assessment

From an epistemological perspective, the question of how to define religious delusion is an intricate problem. The DSM-IV definition of delusion begins with the statement that delusion is a false belief but in the case of religious themes the question of truth or falsity is not relevant. However, from a clinical point of view, defining religious delusion is not more problematic than defining other delusions. Clinicians consider delusion a statement made in an inadequate context or made by subjects who cannot provide adequate reasons for it [23]. Nevertheless, the diagnosis of religious

delusion may remain uncertain. In our sample, we considered the diagnosis dubious in 13 cases that were excluded from the analysis.

We examined the patients as a part of a research aimed at studying violent behaviour and tardive disorders in our inpatient population. At that time, we had not planned to undergo this study on religious delusion. Therefore, a systematic bias in the clinical examination of patients with religious delusion seems unlikely.

Prevalence

In this sample, religious delusion was unexpectedly common among patients with psychotic symptoms. This high prevalence is likely to depend on the location of our PICU. However, it may also be due to the fact that we included in the class of religious delusion all delusions with religious theme such as religious megalomania, guilt, damnation, mystic experiences, and so on. In our review of the literature, we did not find data to compare with the prevalence of 20.1% found in our sample, except a retrospective study [24], which reported a religious content in 34.9% of the deluded patients. However, this study refers to patients admitted to three asylums in York between the years 1880 and 1884, in a strikingly different socio-cultural context.

Psychiatric diagnosis

In our sample, religious delusion occurred with similar frequency in all forms of psychosis. This finding suggests that diagnostic reliance on delusion content to distinguish psychotic disorders is probably overestimated. Consistently with previous research [25–27], we found delusional content of no help in diagnostic discrimination.

Age

Two hypotheses are offered to explain why patients with religious delusion were significantly older and had started their first neuroleptic treatment earlier than patients without religious delusion. First, older age could be inherently associated with metaphysical meditations about meaning, purpose, and realisation in life. Among the general population, the interest in religion, that typically arises in early adolescence, seems to decline in youth and early adult life and to peak in old age, possibly associated with socio-cultural factors and particularly with the spectre of death. An old adage states that everyone feels immortal until his/her forties. The trend is probably similar among psychiatric patients. Second, longer time could be necessary to elaborate religious delusion that is usually more elaborated and systematic than other kinds of delusional content (such as persecution, grandiosity, or reference) that are often fragmentary. These hypotheses are not mutually exclusive, and the explanations for the findings in this study may ultimately derive from a blend of the considerations offered. However, it should be noted that we did not investigate whether the content of patients' delusional thought had changed in the course of years. Consequently, the mean age of the onset of religious delusion of our patients remains uncertain.

Psychopathological course

It is difficult to explain why patients with religious delusion had suffered less acute psychosocial stressors. One could speculate that religious delusion might have stronger biologic bases and might be less related to precipitating events. However, we have no evidence supporting this conjecture.

Patients with religious delusion presented a higher level of psychopathology and, in particular, severer psychotic positive symptoms than other patients. Furthermore, they had a longer history of psychotic illness (measured by the number of years since their first neuroleptic treatment) and had presented a worse global functioning during the last year before the present examination. That is, their baseline conditions were poorer and their psychotic exacerbation was severer. These differences could be explained by: (1) association of religious delusion with severer psychopathological crises, possibly due to a more pervasive influence of religious delusion on patients' thought, affect, and behaviour; (2) systematic bias of way of referring patients to our PICU. With respect to the second issue, it should be noted that when patients living outside the province of Rome were excluded from the analysis, we found the same significant differences between patients with and without religious delusion. Therefore, we consider the first hypothesis more plausible.

Although older age has been associated with recovery, attenuated positive symptoms or evolution to a residual state in the 50–60% of schizophrenic patients [28–31], this is not the case for our patients with religious delusion selected on the basis of admission to an emergency psychiatric unit. In this sample of psychiatric patients with religious delusion, older age does not seem to have had any mitigating or stabilising effect on the active or

positive symptoms of their psychosis. Harrow et al. [2] reported similar results.

In conclusion, our results suggest that religious delusion could be related to a more unfortunate course of psychotic illness.

Association with epilepsy

It has repeatedly been reported that religious delusion may be specifically associated with temporal lobe epilepsy. In this sample, 3 (5.8%) out of 52 patients with religious delusion and 2 (1.0%) of 206 patients without religious delusion were epileptic. The difference is not significant (Fisher exact test, 2-tailed; $p = 0.057$). However, all of the epileptics with religious delusion were admitted more than once to our PICU and accounted for 8 (12.7%) of the 63 admitted cases with religious delusion while, among the patients without religious delusion, the epileptics were admitted only once and accounted for the 1% of the cases (Fisher exact test, 2-tailed; $p = 0.0002$).

It must be emphasised, however, that our study design is characterised by strong weaknesses with respect to this topic. We made diagnoses of epilepsy based on clinical interviews, review of case notes, and family-history data. While false-positive diagnoses are out of question (we directly observed seizures in the 3 epileptic patients with religious delusion and in one of the 2 epileptic patients without religious delusion), the rate of epilepsy false negative diagnoses is uncertain. First, no systematic EEG examination was carried out. More importantly, since we had not planned to undergo this study on religious delusion and did not specifically investigate about dubious or minor epileptic events, we could have misdiagnosed some patients as nonepileptic. Of particular importance is the finding that when we excluded the epileptic patients from the analyses the results were the same.

Therapy

Most of patients were treated with neuroleptic monotherapy. However, patients with religious delusion were treated with a mean number of different neuroleptics significantly higher than patients without religious delusion, during current hospitalisation (table 4). Perhaps, the higher level of psychopathology could have induced physicians to treat patients with religious delusion with a higher number of different neuroleptics in comparison with other patients, on the questionable belief that neuroleptic polytherapy might be more efficacious. Haloperidol, chlorpromazine, and fluphenazine were the most used antipsychotics in both groups of patients.

Conclusions

Religious delusion is among the central symptoms of severe psychotic disorders such as schizophrenia, schizoaffective, and bipolar disorder at the acute phase. In this population of patients, religious delusion was not related to any psychiatric diagnosis. However, it was associated with a more ominous psychopathological course, possibly because religious delusion exerts a more pervasive influence on patients' thought, affect, and behaviour. Looked at from this perspective, our results suggest an alternative outlook on delusions that deemphasises the importance of diagnosis and looks instead at delusions and other major symptom areas as psychopathological dimensions. Future studies to assess the relation between delusional contents and clinical variables are needed to address this issue.

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