STUDY OF LIFE EVENTS AND PREMORBID FUNCTION IN RECENT ONSET SCHIZOPHRENIA

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ABSTRACT

Objectives: Stressful life events preceded onset of psychosis like schizophrenia. Factors which help to identify disease at an earlier stage enable to seek early medical care. This study aims to compare occurrence of life events in subjects presenting 1st time with schizophrenia in the preceding year and to assess premorbid function of individuals.

Methods: This was a case–control study with subjects attending psychiatry outpatient department for the 1st time with schizophrenia and controls from general population. After obtaining informed consent, sociodemographic data were collected along with premorbid functioning using premorbid adjustment scale (PAS), presumptive stressful life events scale (PSLES), positive and negative syndrome scale, premorbid schizoid and schizotypal assessment scale, and global assessment functioning scale (GAF). Data analysis was done using SPSS 22 software. p<0.05 was considered significant.

Results: Sixty cases and 60 controls were compared. Mean age was 30.45±9.21 years, 55% were male, 56.66% were married, 68.33% were from rural background, and 81.66% were from low socioeconomic status. Mean number of stressful life events in the preceding year, PSLES score, PAS scale, Premorbid schizoid and schizotypal traits scale, and GAF scale were all significantly higher in cases. Married men showed higher stress and life events score.

Conclusion: Subjects with schizophrenia experience severe stress before onset of illness and showed more premorbid social dysfunction. Married subjects experience severe stress than others. Duration of untreated illness was less in urban subjects and those with positive family history but had no correlation with severity.

Keywords: Life events, Premorbid social dysfunction, Schizophrenia, Stress.

INTRODUCTION

Life events research evokes immense interest, as the problems defined and the hypothesis generated are so varied, especially in patients with schizophrenia. Life events can occur in various settings (family, health related, or workplace), can be age related (school, marriage, divorce, or retirement), or illness related (diseases or trauma). Many studies have found that single or multiple stressful life events preceded the onset of schizophrenia within 3 months compared to controls [1].

Social disadvantage acts as a stressor in increased risk of schizophrenia and includes separation or death of patents, unemployment, peer relation, or social network problems and social participation [2]. Life events can be dependent (stressful event due to person's own behavior like loss of job), independent (stressful event but not due to person's own behavior such as death of wife and accident), or intrusive (unusual and unpredictable event such as assault, accident, or major surgery) [3].

The factors which help to identify, the disease process of schizophrenia, at the earliest also help to minimize the neurological and psychological damage by schizophrenia. These include predisposing factors such as biological events and vulnerability factors such as poor premorbid traits and family history. Duration of untreated psychosis (DUP) is an important factor and along with other factors, which provides useful information regarding early treatment seeking behavior.

The best hope for the prevention of schizophrenia lies with pharmacological and psychosocial interventions targeted at individuals manifesting precursor signs and symptoms of schizophrenia and not yet developed full blown disease [4]. The aim of the present study was to study the occurrence of life events in patients with schizophrenia in 1 year preceding the onset of illness. The other objective was to study the premorbid personality, premorbid adjustment, and duration of untreated illness in the patient population.

METHODS

This was a case–control study conducted at the outpatient department (OPD) of Institute of Mental Health, Chennai, Tamil Nadu, India between March and August 2015. Patients with Schizophrenia fulfilling ICD ten criteria who were presenting at the psychiatry OPD, for the 1st time, with reliable informants were included in the study. Patients with acute psychosis, mental retardation, substance abuse, previous episodes of psychiatric illness, and those without reliable informants were excluded from the study. Institutional Ethics Committee approval was obtained prior to the study and protocols were followed throughout the study. Both patients and informants were explained about the study in detail and informed consent was obtained before enrolment in the study. Controls were selected from general population (not suffering from psychiatric illness) after matching for age, sex, and socioeconomic status. The null hypotheses to be tested were that the number of life events experienced in 1 year before the onset of schizophrenia was nor more than in controls. The tools used in evaluation of patients were sociodemographic information sheet, socioeconomic status scale (Kuppuswamy's SES scale) [5], presumptive stressful life events scale (PSLES) [6], premorbid adjustment scale (PAS) [7], positive and negative syndrome scale (PANSS) [8], premorbid schizoid and schizotypal traits scale (PSST) [9], and global assessment of functioning scale (GAF) [10]. Data entry and statistical analysis were performed with SPSS version 22.0 (IBM, New York, USA). Descriptive data were given in summary statistics, Pearson's test for correlation and Chi-square test was used for qualitative variables. p<0.05 was considered significant.

RESULTS

In the present study to study life events and premorbid conditions in recent onset schizophrenia, 60 consecutive patients attending the psychiatry OPD, with symptoms of schizophrenia for the 1st time, were included as cases (n=60) and 60 comparable subjects from general population were included as controls (n=60). The mean age of the subjects included as cases (n=60) was 30.45±9.21 years, while the mean age of subjects included as controls was 29.96±8.86 years. The mean age of presentation of schizophrenic symptoms was 28.27±8.93 years in male subjects (cases), while the mean age of females (cases) was 33.11±9.31 years. About 55% of the cases were male (n=33/60) and the same was matched in controls too (n=33/60). About 68.33% of the cases were from rural background (n=41/60) and it was comparable with controls (71.66%, n=43/60). About 81.66% of the subjects included as cases were from a low socioeconomic status (n=49/60) and were comparable with controls (76.66%, n=46/60). The differences in life events and premorbid scores between cases and controls are given in Table 1.

About 56.66% of subjects included as cases were married (n=34/60) and were comparable with controls (66.66%, n=40/60). Among the subjects included as cases, 36.67% (n=22/60) of females and 20% (n=12/60) of males were married. There was a statistically significant difference in stressful life events between married and unmarried subjects (p=0.014) indicating that married persons experienced higher number of life events. The differences in life events and life events score, between married and unmarried subjects included as cases, are given in Table 2.

While assessing DUP in subjects included as cases, there was no difference between sexes (15.92 months in females vs. 14.48 months in males) rural and urban subjects (13.6 months in urban vs. 15.9 months in rural) or with regard to family history (12.13 months with positive family history vs. 17.93 months with no family history). The correlation between life events score with premorbid scales is given in Table 3.

DISCUSSION

In the present study on effects on psychosocial stress at the onset of schizophrenia, the psychosocial factors that affect presentation of cases to health care were studied. The subjects were drug naïve patients seeking health care for the 1st time. The mean age at presentation in the present study was 30.45 years which is consistent with the review that schizophrenia starts in the second and third decade, by Jablensky. The mean age at presentation was more in females than males in the present study. This difference about 5 years is consistent with study by Jablensky [11]. Majority of patients belonged to rural domicile and from lower socioeconomic strata in the present study is due to

Table 1: Differences in life events and premorbid scores between cases (subjects presenting with symptoms of schizophrenia) and controls (subjects from general population)

S. No	Criteria	Group	Differences	T value	p-value
1.	Mean number of stressful life events	Cases (n=60) Controls (n=60)	2.30±1.34 1.17±0.78	5.640	*0.001
2.	Subjects showing number of life events ≥3	Cases (n=60) Controls (n=60)	91.7% (22/60) 8.3% (2/60)	20.833	*0.001
3.	Presumptive stressful life events score	Cases (n=60) Controls (n=60)	136.92±86.75 52.00±40.44	6.873	*0.001
4.	Subjects showing PSLES >100(n=40)	Cases (n=60) Controls (n=60)	80.00% (32/40) 20.00% (8/40)	24.608	*0.001
5.	Premorbid Adjustment Scale	Cases (n=60) Controls (n=60)	0.38±0.17 0.15±0.08	9.339	*0.001
6.	Premorbid Schizoid and Schizotypal traits score	Cases (n=60) Controls (n=60)	14.18±3.05 6.70±2.73	14.168	*0.001

(T value – Student's T-test; P value – Chi-square test), PSLES: Presumptive stressful life events score, PAS: Premorbid adjustment scale, PSST: Premorbid schizoid and schizotypal traits

Table 2: Comparison of life events and life events score in cases (subjects presenting with symptoms of schizophrenia) based on marital status

Sl. No.	Measures	Group	Difference	T value	p-value
1.	Number of stressful life events ≥3 (both sexes-cases)	Married (n=34) Unmarried (n=26)	77.3% (17/34) 22.7% (5/26)	6.007	*0.014
2.	Number of stressful life events ≥3 (Male subjects-cases)	Married (n=12) Unmarried (n=21)	100% (12/12) 23.81% (5/21)	17.748	*0.001
3.	Life events (PSLES) score (Male subjects-cases)	Married (n=12) Unmarried (n=21)	233.25±52.19 109.10±78.17	4.897	*0.001
4.	Number of stressful life events ≥3 (Female subjects-cases)	Married (n=22) Unmarried (n=5)	29.41% (5/22) 0% (0/5)	1.395	0.238
5.	Life events (PSLES) score (Female subjects-cases)	Married (n=22) Unmarried (n=5)	124.36±80.21 77.80±45.08	1.242	0.246
6.	Number of stressful life events ≥3 (Controls)	Married (n=40) Unmarried (n=20)	0% (0/40) 10% (2/20)	4.138	0.42

(T value – Student's T-test; P value – Chi-square test), PSLES: Presumptive stressful life events score

Table 3: Correlation between life events score and premorbid scales

S No	Correlation between	Pearson correlation (r value)	p-value
1.	Life events score (PSLES) and Premorbid adjustment scale	0.781	*0.001
2.	Life events score (PSLES) and Global assessment functioning	−0.762	*0.001
3.	Duration of untreated psychosis and negative symptoms	0.082	0.534

DUP: Duration of untreated psychosis, PSLES: Presumptive stressful life events score, PAS: Premorbid adjustment scale, GAF: Global assessment functioning

the fact that the services of Government facility are utilized mainly by poor rural people. The number of stressful life events in cases was 2.30 and compared to controls was statistically significant. This was similar to the study by Mondelli *et al*. who found stressful life events score to be 2.3±0.3 [12]. The number of subjects, included as cases, who experienced three or more stressful life events in the past year was 22 in the present study compared to only two of the subjects as controls. This was similar to the results obtained in the study by Raune *et al*. [13] The mean life event score in cases was significantly higher in subjects included as cases, which indicated that subjects presenting with first episode schizophrenia experienced high level of stress. This was similar to the study by Betensky *et al*. who showed higher stress score in schizophrenia using Derogatis stress profile [14].

Male subjects with symptoms of schizophrenia experienced more life events than female subjects. Furthermore, severity of life events score was higher in male subjects included as cases. This was similar to the results obtained in the review by Barajas *et al*. [15] However, Galderisi *et al*. have found no differences between sexes in severity or social functioning [16]. The present study found significant stress among married men. This was similar to the results obtained by Kulhara *et al*. who reported higher stress and greater number of life events among married schizophrenics [17]. However, Myin-Germeys *et al*. did not find any gender differences between estimated effects of stress [18].

In the present study, subjects (cases) showed significant impairment in premorbid functioning. They also showed significant schizoid and schizotypal traits when compared to subjects included as controls. This was similar to the results obtained in the study by Hui *et al*. [19] There was positive correlation between stress life events score and PAS in subjects included as cases that indicates that increasing life events score was associated with poor level of premorbid function. Furthermore, there was a negative correlation between life events score and global assessment functioning. Higher the number of stressful life events, poorer was the level of functioning. Suzuki *et al*. had found concordance between various scales assessing functioning in schizophrenia and found significant correlation between GAF and PANSS score [20].

The DUP, in the present study, was 15.13 months with range between 1 month and 3 years. This was similar to the results shown by Qin *et al*. with a median of 401 days [21]. This was longer than the results by Hui *et al*. who found that patients developing symptoms of schizophrenia had a median time delay of 2 months before seeking treatment [19]. Those subjects (cases) with a family history of psychosis sought medical care earlier and had a lower DUP. In the present study, DUP had no correlation with negative symptom score (severity of schizophrenia). This was similar to the results obtained in the study by Addington *et al*. [22]. Approaching medical care in rural India depends on lot of beliefs like faith, misbeliefs and stigma of family members. Even those with severe mental illness seek health care after a delay, due to unavailability of psychiatric care, difficulty in transportation, or when the patient is violent.

To conclude, exposure to stressful life events acts as a trigger in a vulnerable individual. In this study, subjects with schizophrenia (cases) experienced more stressful life events before the onset of illness. Married subjects with schizophrenia experienced more intrusive events compared to controls. Premorbid social dysfunctions and incidence of schizoid and schizotypal traits were seen more in cases than controls. DUP had no correlation with severity of illness. Urban subjects and those with family history of psychosis sought medical care early.

Limitations
This was a retrospective study with a small sample size. Life events research and premorbid scores are vulnerable to biases in recall.

AUTHORS' CONTRIBUTIONS

SP conceptualized, designed the study, and collected data. KVB collected and analyzed data. DS critically revised and approved manuscript. SB analyzed data and prepared manuscript.

CONFLICTS OF INTEREST

AUTHORS FUNDING

ETHICAL APPROVAL

Obtained from the Institutional Ethical Committee of Madras Medical College, Chennai, Tamil Nadu, India.

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