ORIGINAL RESEARCH

Sexual dysfunction in people with first episode psychosis – A case control study

[1]Dr. Malarvizhi.A, [2]Dr. Mythili. V, [3]Dr. Merolin Jaya Sheela. T, [4]Dr. Venkatesh Madan Kumar

[1]Assistant Surgeon, Government Hospital, Attur, Salem, Tamil Nadu, India
[2]Senior Assistant Professor, [3]Assistant Professor, [4]Professor, Department of Psychiatry, Institute of Child Health Madras Medical College, Chennai, Tamil Nadu, India

Corresponding author
Dr. Mythili. V
Senior Assistant Professor, Department of Psychiatry, Institute of Child Health Madras Medical College, Chennai, Tamil Nadu, India
Email: medresearchdpi@gmail.com

Received: 27 September, 2023 Accepted: 30 October, 2023

ABSTRACT

Introduction: Sexual dysfunction is known to affect all domains of sexual function, including desire , arousal ,erection, ejaculation and orgasm; It is generally underestimated , often neglected and poorly managed .If sexual dysfunction were an intrinsic function of psychotic disorders it would be evident in people with first episode psychosis and before the start of treatment with antipsychotic medication. Based on this objective of our study is to compare and assess the differences in sexual dysfunction (SD) in people diagnosed as schizophrenia in first episode psychosis (FEP) and healthy controls. **Research design and methods:** A case control study with a sample size of 100 including 50 cases in FEP diagnosed as schizophrenia based on ICD 10 criteria and 50 healthy controls Healthy controls were screened using MINI interview. The severity of cases group assessed by PANSS score. Both groups were assessed with Arizona Sexual Experience Scale (ASEX) and Changes in Sexual Functioning Questionnaire (CSFQ) – male and female clinical version for SD. **Results**: The sexual experience in cases group is significantly reduced than control group based on scores in ASEX scale. Comparing the sexual activity, the cases had lower percentage 76% when compared to controls 94%. On CSFQ, domains such as pleasure, desire, arousal and orgasm were studied, the results showed significant SD in cases compared to controls in all domains with percentage of 84% vs 12% in cases vs controls. On comparing the domains of sexual function with domains of PANSS, the SD patients had significant correlations with negative and general psychopathology domains. **Conclusion**: Based on literature review, it was first study done in FEP diagnosed as schizophrenia to evaluate sexual dysfunction in Indian population. We need to screen every patient in psychiatric OPD in FEP for baseline sexual functioning. This helps the patient in follow up to report further sexual difficulties which helps to improve treatment adherence and quality of life.

Keywords: Sexual dysfunction, first episode psychosis, schizophrenia.

INTRODUCTION

Psychosis, or the loss of touch with reality, is a key feature of the complicated mental illness known as schizophrenia. Positive symptoms of schizophrenia might include hallucinations, delusions, and disordered speech or behaviour, while negative symptoms can include affect, speech, motivation, and social deficiencies[1]. It appears that a disruption in brain development caused by either hereditary, environmental, or a mix of the two factors is the cause of the complex, heterogeneous behavioural and cognitive disorder known as schizophrenia. While dopaminergic neurotransmission disruption contributes to the emergence of psychotic symptoms, evidence also points to the importance and variety of other brain areas and circuits. Anomalies in neuronal connections involving interneurons may or may not be caused by the precise nature, location, and timing of these events, which are unknown. The bulk of contemporary interventions include antipsychotic drugs in combination with mental therapies, social support, and rehabilitation.

Sexual wellness is a vital health component that has a direct impact on one's quality of life. Psychosexual development, psychological perspectives on sexuality, and perspectives on sexual partners all have an effect on the psychophysiological sensation of sexual responsiveness. Sexual dysfunction is more common in people with psychiatric illness than in the general population, and it is associated with both psychopathology and medications.[2,3] However, those who suffer from mental illnesses are typically reluctant to bring up sexual problems with their

therapists on their own, and healthcare professionals frequently avoid doing so.

An important facet of quality of life is healthy sexual functioning. Sexual dysfunction is believed to influence every area of sexual function, including desire, arousal, erection, ejaculation, and orgasm. Despite being a major factor in low quality of life and prescription non-adherence, sexual dysfunction is usually neglected and inadequately addressed. Moreover, sexual dysfunction may also be a manifestation of the illness itself and be associated with the severity of the symptoms. Sexual dysfunction has predominantly been linked to the adverse effects of antipsychotic medications. If sexual dysfunction were a feature of psychotic diseases, it would be evident in individuals who are going through their first psychotic episode and before initiating antipsychotic medication.

Mental disorders like schizophrenia, anxiety disorders, and depressive disorders are frequently associated with sexual dysfunction. Healthcare personnel usually avoid directly addressing sexual issues with patients who have mental illnesses because these patients are frequently reluctant to do soon their own.

Healthy sexual function is a crucial element of subjective wellbeing. Every aspect of sexual function, including desire, arousal, erection, ejaculation, and orgasm, is thought to be affected by sexual dysfunction. Sexual dysfunction is frequently overlooked and poorly treated, despite being a significant contributor to poor quality of life and medication non-adherence disorders. Only two among the various areas that schizophrenia can impair are sexual function and interpersonal relations. Women with schizophrenia who report having sexual problems vary from 30% to 80%. In people with schizophrenia, sexual dysfunction is associated with poor quality of life and treatment noncompliance.[4,5]Based on this aim of our study is to compare and assess the differences in sexual dysfunction in people diagnosed as schizophrenia in first episode psychosis and healthy controls.

METHODOLOGY

This is a prospective case control study done in patients diagnosed with schizophrenia attending the Psychiatric OPD at Institute of Mental Health, Madras Medical College, Chennai and matched healthy controls, Cases are selected from psychiatric OPD at Institute of Mental Health, Madras Medical College, and Chennai for a period of one year. In our study 50 patients diagnosed with schizophrenia attending the Psychiatric OPD at Institute of Mental Health, Madras Medical College, Chennai and 50 matched healthy controls were consecutively selected for the study. Patients aged 18 to 45 years diagnosed to have schizophrenia (F 20 to F 29) in first episode psychosis based on ICD 10 criteria, Healthy volunteers aged 18 to 45 years without any mental health disorders (Mini-International Neuropsychiatric Interview [MINI] interviews) were included in study. While those patients with organic mental disorder, seizure disorder, mental retardation, Parkinson's disease or any neurological illness, patients with past history of antipsychotic exposure and significant systemic illness were excluded.

After getting informed consent their socio demographic and clinical details were collected using a semi structured proforma designed for the study. Mini International Neuropsychiatric Interview (MINI) to screen healthy control group was used. In our study PANSS — Positive and negative syndrome scale to assess the symptom severity was used. Also we used Arizona Sexual Experience Scale — ASEX and Changes in sexual functioning questionnaire (CSFQ) were used to collect data.Institutional Ethical Committee approval was obtained before the start of the study. Informed written consent was obtained from each participant.

STATISTICAL ANALYSIS

Numerical variables like age are represented in mean, median, mode and standard deviation Categorical variables like gender are represented in frequencies and percentages.When a Numerical variable is associated with the Numerical variables such as Pearson's correlation test is used. For test of significance, chi-square test is used. The independent-samples t-testcompares the means between two unrelated groups on the same continuous, dependent variable.. The ANOVA is used to determine whether there are any statistically significant differences between the means of three or more independent groups. P-values less than 0.05 were considered statistically significant.

RESULTS

In our study among the subjects, 50 (50%) were allotted to Cases group who were diagnosed to have schizophrenia in first episode psychosis based on ICD 10 criteria and 50 (50%) were allotted to Controls group who were diagnosed without any mental health disorders by MINI.

The mean Age (years) among Cases was 30.46 (±6.58) which is lower by 0.76 but not statistically significant compared to 31.22 (±7.57) in Controls. Comparing the Age group between Cases and Controls, Cases group had higher proportion of 21 - 30 years with 58% followed by 31 - 40 years with 28% and least in < 20 years with 4% compared to Controls group which had higher proportion of 31 - 40 years with 40% followed by 21 - 30 years with 36% and least in < 20 years with 10%. The difference in Age group distribution between Cases and Controls was not statistically significant ($p > 0.05$). The mean Age of onset of Illness (years) among the subjects was 27.68 (± 6.8) ranging from 17 to 42 years. The mean duration of Illness (years) among the subjects was 2.78 (± 1.31) ranging from 0.5 to 8 years.

Comparing the Gender between Cases and Controls, 60% of the Cases group were Males and 40% were Females compared to Controls group of whom 50% were Males and 50% were Females and the difference was not statistically significant ($p > 0.05$)

Comparing the Marital status between Cases and Controls, Cases group had higher proportion of Single with 50% followed by Married with 38% and least in separated with 12% compared to Controls group which had higher proportion of Married with 68% followed by Single with 26% and least in separated with 6%. The difference in marital status distribution between Cases and Controls was statistically significant ($p < 0.05$)

Comparing the Sexual activity between Cases and Controls, 76% of the Cases group had Sexual activity which is lower and statistically significant ($p < 0.05$) compared to Controls group of whom 94% had Sexual activity. Comparing the Masturbation between Cases and Controls, 72% of the Cases group had Masturbation which is higher but not statistically significant ($p > 0.05$) compared to Controls group of whom 66% had Masturbation

In our study among the subjects, 33 (33%) were diagnosed as F20, 8 (8%) as F22 and 6 (6%) as F29 according to ICD 10.The mean Positive Score among the subjects was 22.2 (± 4.35) ranging from 10 to 31. The mean Negative Score among the subjects was 18.34 (± 5.95) ranging from 9 to 35. The mean General Psychopathology Score among the subjects was 25.1 (± 5.52) ranging from 16 to 38.The mean Total PANSS Score among the subjects was 65.64 (± 9.68) ranging from 46 to 83.

Next we did ASEX score individually on different parameters, the mean score for strongness of Sex Drive among Cases was 4.04 (± 1.05) which is higher by 1.26 and statistically significant compared to 2.78 (± 0.74) in Controls. The mean score for Sexual Arousal among Cases was 3.94 (± 0.91) which is higher by 1.36 and statistically significant compared to 2.58 (± 0.78) in Controls. The mean score for Getting Erection & keeping easily among Cases was 3.58 (± 0.91) which is higher by 0.92 and statistically significant compared

The mean score for Reaching Orgasm easily among Cases was 3.58 (± 0.99) which is higher. The mean score for Satisfying Orgasms among Cases was 3.68 (± 1.15) which is higher by 0.88 and statistically significant compared to 2.8 (± 0.73) in Controls. The mean ASEX score among Cases was 18.82 (± 4.21) which is higher by 5.3 and statistically significant compared to 13.52 (± 3.37) in Controls

Table 1.ASEX score

	Group	N	Mean	SD	P value
ASEX score	Cases	50	18.82	4.21	0.001
	Controls	50	13.52	3.37	

Next we analyzed CSFQ domain, the mean Pleasure among Cases was 2.54 (± 0.89) which is lower by 0.96 and statistically significant compared to 3.5 (± 0.79) in Controls. The mean Frequency among Cases was 5.2 (± 2.08) which is lower by 2.2 and statistically significant compared to 7.4 (± 1.76) in Controls. The mean Interest among Cases was 5.98 (± 2.06) which is lower by 4.66 and statistically significant compared to 10.64 (± 2.06) in Controls. The mean Arousal among Cases was 8 (± 2.61) which is lower by 3.36 and statistically significant compared to 11.36 (± 1.8) in Controls. The mean Orgasm among Cases was 7.88 (± 2.67) which is lower by 2.66 and statistically significant compared to 10.54 (± 1.9) in Controls. The mean CSFQ score among Cases was 37.1 (± 10.18) which is lower by 14.84 and statistically significant compared to 51.94 (± 7.26) in Controls.

Table 2.CSFQ score

	Group	N	Mean	SD	P Value
CSFQ score	Cases	50	37.10	10.18	0.001
	Controls	50	51.94	7.26	

Comparing the Sexual Dysfunction between Cases and Controls, 84% of the Cases group had Sexual Dysfunction which is higher and statistically significant ($p < 0.05$) compared to Controls group of whom 12% had Sexual Dysfunction

Table 3.Sexual Dysfunction

Sexual Dysfunction	Group		Total	P value
	Cases	Controls		
Yes	42 (84%)	6 (12%)	48 (48%)	0.001
No	8 (16%)	44 (88%)	52 (52%)	

Total	50 (100%)	50 (100%)	100 (100%)	

The mean Positive Score among those with Sexual Dysfunction was 21.95 (± 4.47) which is lower by 1.55 but not statistically significant compared to 23.5 (± 3.63) in those without Sexual Dysfunction. The mean Negative Score among those with Sexual Dysfunction was 19.6 (± 5.43) which is higher by 7.85 and statistically significant compared to 11.75 (± 4.03) in those without Sexual Dysfunction. The mean General Psychopathology Score among those with Sexual Dysfunction was 26.14 (± 5.21) which is higher by 6.52 and statistically significant compared to 19.63 (± 3.62) in those without Sexual Dysfunction. The mean Total PANSS Score among those with Sexual Dysfunction was 67.69 (± 9.02) which is higher by 12.82 and statistically significant compared to 54.88 (± 4.58) in those without Sexual Dysfunction.

Table 4: PANSS Score with Sexual Dysfunction among Cases

	Sexual Dysfunction	N	Mean	Std. dev.	P value
Positive Score	Yes	42	21.95	4.47	0.361
	No	8	23.50	3.63	
Negative Score	Yes	42	19.60	5.43	0.001
	No	8	11.75	4.03	
General Psychopathology Score	Yes	42	26.14	5.21	0.001
	No	8	19.63	3.62	
Total PANSS Score	Yes	42	67.69	9.02	0.001
	No	8	54.88	4.58	

The mean Age of onset of Illness (years) among those with Sexual Dysfunction was 27.24 (± 6.82) which is lower by 2.76 but not statistically significant compared to 30 (± 6.61) in those without Sexual Dysfunction. The mean Duration of Illness (years) among those with Sexual Dysfunction was 2.98 (± 1.31) which is higher by 1.23 and statistically significant compared to 1.75 (± 0.71) in those without Sexual Dysfunction

Among the Cases, Education, occupation, marital status and residence of the subjects were found to have statistically significant difference ($p < 0.05$) with the distribution of sexual dysfunction. Subjects with rural residence had higher sexual dysfunction compared to urban residents. Single and separated individuals had higher sexual dysfunction compared to married individuals. There was no linear trend in education and occupation status of the individuals.

Comparing the Gender with Sexual Dysfunction distribution, 83.33% of the Males had Sexual Dysfunction which is lower compared to Females of whom 85% had Sexual Dysfunction and the difference was not statistically significant ($p > 0.05$)

The mean Duration of Illness (years) among those with Sexual Dysfunction was 3.16 (± 1.49) which is higher by 1.26 but not statistically significant compared to 1.9 (± 0.82) in those without Sexual Dysfunction. The mean Duration of Illness (years) among those with Sexual Dysfunction was 2.71 (± 0.97) which is higher by 1.21 but not statistically significant compared to 1.5 (± 0.5) in those without Sexual Dysfunction

Among the subjects, 50 (100%) had Low sexual pleasure, 45 (90%) had Low sexual frequency, 48 (96%) had Low sexual interest, 50 (100%) had Low sexual arousal and 48 (96%) had Low sexual orgasm

DISCUSSION

The study included 50 cases diagnosed as schizophrenia in first episode psychosis with matched 50 healthy controls in the age group of 18 to 45 years. The cases were initially assessed for disease severity with PANSS and once the acute phase settled, the cases were asked for sexual experience andsexual dysfunction questionnaire. Except for few male patients who had initial hesitance to open up for intimate questions and few with difficulty to interpret questions,patients have increased willingness to discuss their sexual problems. Most of the male patients who were married were interviewed along with their spouse with their consent.

Mean age among cases were 30.46 and controls were 31.22 with cases in higher percentage within 21-30 years. This is due to onset of illness mostly in younger age group similar to previous studies .[1] The education in both groups was mostly in high school.

Higher proportion of cases was unemployed 68%compared to controls due to illness related factors[6,7]. Both the groups had similar residence distribution, both from rural and urban side. Higher proportion of cases were single 50% followed by married 38% and separated 12% due to societal factors of illness [8,9].

Comparing the sexual activity , the cases had lower percentage of sexual activity 76 % when compared to controls 94%.But masturbation is higher in cases group 72% compared to controls group 66% and statistically not significant . This cannot be attributed to any deviant sexual activity in contrast to previous studies mostly in institutionalized patients .[10,11]

Mean age of onset of illness 27.68 +/- 6.8 with female's slightly later onset.[12]Mean duration of illness was 2.78±1.31 in our study. Most(33) of cases were diagnosed as Schizophrenia based on ICD 10 with 8

cases of delusional disorder and other psychotic disorders[10]. In severity rating by PANSS, the scores were in range of 46 to 83 in mild to moderate ill category.

The ASEX score was higher in cases group 18.82± 4.21 compared to control 13.52±3.37 indicating sexual difficulties in cases , but patients did not report significant distress due to it .It was similar to a study conducted in Hyderabad comparing female psychiatric OPD patients with controls (score 17.62 vs 16.70) with no significant correlation[13]. ASEX was used as a screening tool in Indian studies in general population, scores not mentioned [14]. But it was used in a study done in Thailand in patients with mental disorders with cutoff score of 17.[15]A prospective study done in Maharashtra in women with schizophrenia who were on medications ASEX scores was higher 21.19 vs 11.18 in controls which can be attributed to effects of drugs[16].The criterion for sexual dysfunction,according to the ASEX, was total ASEXscore >19 or any one ASEX item with an individualscore >5 or any three ASEX items with individualscores >4[17].

When comparing individual scores of strongness of sex drive,sexual arousal,getting erection or vaginal lubrication,reaching orgasm and satisfying orgasm, the cases group scored higher and statistically significant than control group indicating that cases group had significant reduction in sexual experience than controls.

A total of 742 patients with schizophrenia from a rural area were enrolled in the study done in China to evaluate SD with ASEX scores -the prevalence was 71.3% in the whole sample, 64.5% in males and 82.7% in females[18].They used it as a single self-reported validated tool to diagnose SD in Chinese version .But in Indian scenario, it is used only as a screening tool.[10]

On CSFQ [37], domains such as pleasure , desire , arousal and orgasm were studied , the results showed significant sexual dysfunction in cases compared with controls in all domains . The percentage of SD was 48% in which cases were 84% and controls were 12%similar to previous studies prevalence rate.[14]

The prevalence was slightly higher in females 85% than males 83.3%, which was in contrast to previous studies.[19]this is due to scarce literature in female schizophrenia patients, lack of comparative data with male patients and under reporting.[10]our findings suggests that SD in first-episode schizophrenia patients is a common problemas shown by its prevalence higher than control.[20]

On comparing the individual domains with sub domains of PANSS,the SD patients had significant correlations with negative and general psychopathology sub domains in contrast to previous studies which showed only significant correlation with negative sub domain.[21] This variation may be due to self-reportedquestionnaire in such studies,methodological variation and cultural differences in understanding sexual cycle.The other factors contributing to SD were rural residence,single and separated individuals with no linear trends in education and occupation in our study.

CONCLUSION

Based on our literature review, it was the first study done in FEP diagnosed as schizophreniato evaluate sexual dysfunction inIndian population. We need to screen every patient in psychiatric OPD in FEP for baseline sexual functioning and SD if any. This study adds to evidence sexual dysfunction is prevalent even before medications started. This helps the patient in follow up to report further sexual difficulties and other concerns which helps to improve treatment adherence and quality of life .Further longitudinal studies of schizophrenia patients from initial presentation needed to be taken up in future toexplore sexual difficulties in them.

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