

The role of life events in obsessive-compulsive disorders



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Submission: 25-08-2023

Revision: 02-01-2024

Publication: 01-02-2024

ABSTRACT

Background: A small number of studies are available to assess the role of stressful life events (SLEs) in obsessive-compulsive disorder (OCD). The previous studies have reported contradictory results and they have methodological limitations. **Aims and Objectives:** The objectives of our study are (i) to find out the frequency of life events in patients with OCD in comparison to their matched healthy controls and (ii) to find out the impact of life events on the severity of the disorder. **Materials and Methods:** Sixty patients fulfilling Diagnostic and Statistical Manual of Mental Disorder, 5th edition (DSM-V) criteria of OCD were rated with Yale-Brown Obsessive Compulsive Scale (Y-BOCS), Hamilton Rating Scale for Anxiety (HAM-A), Hamilton Rating Scale for Depression (HAM-D), and Presumptive Stressful Life Events Scale (PSLES). A group of 60 normal controls were also rated on PSLES. Finally, both groups were compared in terms of life events. **Results:** The frequency of life events, past 1 year ($t = 5.307$, $P = 0.006$) and lifetime ($t = 11.527$, $P < 0.001$), were significantly higher in the patient group in comparison to controls. PSLES scores showed a significant correlation with Y-BOCS total scores, Y-BOCS obsession scores, and HAM-A scores. There was a positive correlation between past 1 year PSLES score and HAM-D scores. Step-wise linear regression analysis showed PSLES scores significantly positively predicted Y-BOCS total score, Y-BOCS obsession score, and Y-BOCS compulsion score. **Conclusion:** Life events were significantly more frequent in OCD patients both past 1 year and lifetime, as compared to healthy controls. The severity of obsessive compulsive symptoms was found to be directly proportional to the number of SLEs experienced in the past 1 year and lifetime.

Key words: Stressful life events; Traumatic life events; Obsessive-compulsive disorders

INTRODUCTION

Obsessive-compulsive disorder (OCD) is a debilitating neuropsychiatric condition characterized by recurrent intrusive unwanted thoughts (obsessions) and/or repetitive, compulsive behaviors, or mental rituals (compulsions). OCD affects 1–3% of the population and is considered to be one of the most disabling anxiety disorders.^{1,2}

The disorder has a multifactorial mode of inheritance where genetic and biological risk factors interact with the environmental stressors.³ Among the environmental

factors, stressful life events (SLEs) have been implicated in the development of the disorder.⁴ A life event is indicative of or requires a significant change in the ongoing life patterns of the individual. According to Settersten and Mayer, “a life event is a significant occurrence involving a relatively abrupt change that may produce serious and long-lasting effects.”⁵

Conflicting results have been reported on the possible role of life events in triggering OCD. Although some studies report a significant higher number of negative life events

Access this article online

Website:

<http://nepjol.info/index.php/AJMS>

DOI: 10.3126/ajms.v15i2.57961

E-ISSN: 2091-0576

P-ISSN: 2467-9100

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with OCD patients compared to a non-clinical group other studies fail to show these relations.^{6,7} According to McKeon et al., Kulhara and Rao, OCD patients reported a significant excess of events over the year before onset of illness in comparison to healthy subjects.^{6,8} Similarly, Gothelf et al., found significantly more life events in the year preceding onset of OCD in comparison to normal controls in children.⁹ Gershuny et al., investigated the role of trauma in treatment outcome of OCD and found that 82% of patients with treatment-resistant OCD reported a history of trauma.¹⁰ On the contrary, few studies reported no difference in life events between obsessive patients and healthy subjects over 1 year before the onset of OCD, although Khanna et al., found an excess of life events in the 6 months before the onset of the disorder.^{11,12} A recent study comparing life events in subjects with OCD, Tourette syndrome, and healthy controls reported significantly more SLEs in OCD patients as compared to others.¹³ In a recent study on women subjects, pregnancy and childbirth were found to be frequently associated with the onset of OCD or worsening of symptoms in those with pre-existing disorder.¹⁴

The majority of studies that have investigated the association between SLEs and OCD have been limited by (1) small sample sizes, (2) the difficulty of establishing retrospectively the temporal relationship between onset and SLEs (e.g., definition of premorbid period), and (3) a limited scope with regard to the effect of SLEs on OCD (most investigations have concentrated on symptom severity only). For definitive conclusions to be drawn, it will be necessary to address some of these limitations.

Aims and objectives

To fill in these gaps, the present study is conducted with the aims (i) to find out the frequency of life events in patients with OCD in comparison to their matched controls and (ii) to find out the impact of life events on the severity of the disease.

MATERIALS AND METHODS

Ethics

The protocol of the study was submitted to and approved by the Institutional Ethics Committee. Informed consent was taken from each patient and control subjects participating in the study.

Study setting

This study was conducted by psychiatry out-patient department (OPD) of a tertiary care hospital.

Sampling

This was a consecutive sampling.

Study population

Patients were OPD and controls from non-blood-related attendants of the patients.

Inclusion criteria

The following criteria were included in the study:

- (A) For patients:
- (i) Subjects between 18 and 60 years of age.
 - (ii) Consecutive subjects diagnosed as OCD according to the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM -V).¹⁵
- (B) For controls:
- (i) From accompanying persons of patients without any psychiatric disorder at psychiatry outdoors between 18 and 60 years of age.
 - (ii) Age (± 5 years) and sex-matched.
 - (iii) No current psychiatric syndrome as score ≤ 1 using General Health Questionnaire-5 (GHQ-5).¹⁶

Exclusion criteria

The following criteria were included in the study:

- (A) For patients:
- Psychiatric comorbidity as follows
1. Substance dependence
 2. Psychosis
 3. Mental retardation
 4. Bipolar disorder
 5. Subjects suffering from any comorbid medical illness such as dementia, seizures, stroke, and neurodegenerative disease like Parkinson's disease.
 6. Head injury sufficient to cause unconsciousness.
- B. For controls:
1. The presence of any past psychiatric syndrome.
 2. Family h/o psychiatric illness in 1st degree relative.
 3. History of substance abuse.

Sample size

The sample size was 60 patients and 60 controls fulfilling the above-mentioned inclusion and exclusion criteria were taken.

Study design

A hospital-based, cross-sectional, and case-control study based on the assessment of patients suffering from OCD using tools for assessment of OCD, depression, anxiety, and life events and assessment in demographically matched controls using tools for assessment of life events.

Study tools

1. Semi-structured proforma for sociodemographic and clinical variables.
2. Yale-Brown Obsessive Compulsive Scale (Y-BOCS): This rating scale is designed to rate the severity and type of symptoms in patients with OCD.¹⁷

3. Hamilton Rating Scale for Anxiety (HAM-A)- (Hamilton, 1959); a 14-item scale to assess the severity of a patient's anxiety.¹⁸
4. Hamilton Rating Scale for Depression (HAM-D): 17 items to assess the presence and severity of depressive states in patients diagnosed with depression.¹⁹
5. GHQ-5, for screening of controls.¹⁶
6. Presumptive Stressful Life Events Scale (PSLES) a suitable scale for SLEs experienced by the Indian population and standardized for 2 time spaces, that is, past 1 year and lifetime.²⁰

Study technique

Subjects were selected by consecutive sampling from patients coming to OPD, diagnosed by a consultant psychiatrist as having OCD as per DSM-V criteria. Then sociodemographic and clinical variables were collected from the selected patients, who met the criteria and gave consent. Y-BOCS, HAM-A, and HAM-D were applied to assess the severity of obsessive and compulsive symptoms, anxiety, and depression, respectively. Then they were assessed for the presence of significant life events using PSLES in the form of semi-structured interview. The life events occurring 1 year before the onset of illness and over lifetime were recorded. Age and Sex matched controls were selected from the healthy attendants of the patients who are not related to the patients. Then, they were screened with GHQ-5 and PSLES applied for life events.

The data obtained were analyzed with Statistical Package for the Social Sciences (SPSS)-version 15.0 for Windows® (SPSS Inc., Chicago, IL, U.S.A.). Normality of data was assessed using histogram and Shapiro–Wilk test. Both groups were compared using an independent t-test and Chi-square test, wherever applicable. Pearson's correlation was done between PSLES scores with continuous and categorical sociodemographic and clinical variables respectively. Linear step-wise regression analysis was carried out using Y-BOCS total score, obsession, and compulsion scores as dependent variables. PSLES last 1 year and lifetime scores were entered in the model in a stepwise manner. Adjusted R square was reported as it controls for the number of independent variables.

RESULTS

Tables 1 and 2 show the comparison of sociodemographic variables between cases and controls. Both groups were

comparable and matched, apart from family history of psychiatric disorders.

As seen in Table 3, significant differences were found in total PSLES scores between the cases and controls in both lifetime and 1-year duration.

Total PSLES score for lifetime in the case group (20.40 ± 5.06 standard deviation [SD]) was more than the control group (12.07 ± 2.41 [SD]). A significant difference was found between these two groups ($t=11.527$; $P<0.001$)

Similarly for the Total PSLES score in past 1 year, the case group score (8.62 ± 2.58 [SD]) was more than the control group score (6.50 ± 1.70 [SD]). The difference was found to be statistically significant ($t=5.307$; $P=0.006$).

As seen in Table 4, among the case group, the mean age of onset 26.41 ± 9.29 (SD) years. Total duration of OCD was 6.54 ± 4.60 (SD) years. The mean Y-BOCS total score was 26.83 ± 3.02 (SD), mean Y-BOCS Obsession score was 13.17 ± 1.63 (SD), and mean Y-BOCS Compulsion score was 13.62 ± 1.75 (SD). The mean Hamilton depression rating scale (HDRS) and Hamilton anxiety rating scale score were 19.12 ± 3.33 (SD) and 18.53 ± 4.61 (SD), respectively. The mean total PSLES score for a lifetime was 20.40 ± 5.06 (SD) and for past 1 year was 8.62 ± 2.58 (SD).

In the patient group (Table 5), PSLES Lifetime scores positively correlated with Y-BOCS total ($r=0.461$, $P<0.001$), obsession ($r=0.360$, $P=0.005$), and compulsion ($r=0.332$, $P=0.010$) scores whereas PSLES past 1-year scores positively correlated with Y-BOCS total ($r=0.382$, $P=0.003$) and obsession ($r=0.325$, $P=0.011$) scores. There was positive correlation between HAM-D scores with both lifetime total PSLES scores ($r=0.305$, $P=0.018$) and past 1-year PSLES scores ($r=0.304$, $P=0.018$). Positive correlation between HDRS scores and past 1-year PSLES score was found ($r=0.310$, $P=0.016$) but not with lifetime PSLES scores.

To probe further whether there was any predictive value of PSLES score in terms of OCD severity (Y-BOCS scores), we carried out a simple regression analysis, using PSLES scores as the predictor variable and Y-BOCS total score, obsession score, and compulsion score as outcome variable (Table 6). PSLES lifetime scores positively predicted Y-BOCS total ($B=0.275$, $P<0.001$), Y-BOCS

Table 1: Comparison of sociodemographic variables (continuous) between cases and controls

Variables	Cases (OCD) (n=60)	Control (n=60)	t	df	P
Age in years	33.05±11.17	33.67±11.22	0.30	118	0.76
Total years of formal education	10.13±4.02	10.57±3.68	0.62	118	0.54

**Significant at the 0.01 level (2-tailed) *Significant at the 0.05 level (2-tailed). OCD: Obsessive-compulsive disorder

Table 2: Comparison of sociodemographic variables (categorical) between cases and controls

Variables	Case n (%)	Control n (%)	χ^2	df	P
Gender					
Male	23 (38.3)	23 (38.3)	0.000	1	1.00
Female	37 (61.7)	37 (61.7)			
Religion					
Hindu	45 (75)	41 (68.3)	0.657	1	0.418
Muslim	15 (25)	19 (31.7)			
Monthly family income					
Rs. 10,000 or Below	35 (58.3)	26 (43.3)	2.701	1	0.100
Above Rs. 10,000	25 (41.7)	34 (56.7)			
Residence					
Urban	25 (41.7)	30 (50)	0.839	1	0.360
Rural	35 (58.3)	30 (50)			
Marital status					
Unmarried	15 (25)	13 (21.7)	0.186	1	0.666
Married	45 (75)	47 (78.3)			
Occupation					
Employed	19 (31.7)	23 (38.3)	0.586	1	0.444
Unemployed	41 (68.3)	37 (61.7)			
Family type					
Nuclear	36 (60)	35 (58.3)	0.034	1	0.853
Joint	24 (24)	25 (41.7)			
Family history of OCD					
Present	18 (30)	0 (0)	21.176	1	<0.001
Absent	42 (70%)	60 (100)			
Family history of other mental disorders					
Present	13 (21.7)	0 (0)	14.579	1	<0.001
Absent	47 (78.3)	60 (100)			

**Significant at the 0.01 level (2-tailed), *Significant at the 0.05 level (2-tailed). OCD: Obsessive compulsive disorder

Table 3: Comparison of total scores of presumptive stressful life event scale scores between cases and controls

Variables	Cases	Controls	t	df	P
Total PSLES score lifetime	20.40±5.06	12.07±2.41	11.527	118	<0.001*
Total PSLES score in last 1 year	8.62±2.58	6.50±1.70	5.307	118	0.006**

**Significant at the 0.01 level (2-tailed), *Significant at the 0.05 level (2-tailed). PSLES: presumptive stressful life event scale

Table 4: The characteristics of clinical variables in cases (OCD patients)

Variables	Mean±Standard deviation
Age of onset in years	26.41±9.29
Total duration of OCD in years	6.54±4.60
Y-BOCS total score	26.83±3.02
Y-BOCS obsession score	13.17±1.63
Y-BOCS compulsion score	13.62±1.75
HDRS score	19.12±3.33
HARS score	18.53±4.61
Total PSLES score in lifetime	20.40±5.06
Total PSLES score in last 1 year	8.62±2.58

OCD: Obsessive-compulsive disorder, PSLES: Presumptive stressful life events scale, Y-BOCS: Yale brown obsessive compulsive scale, HARS: Hamilton anxiety rating scale, and HDRS: Hamilton depression rating scale

obsession ($B=0.116$, $P=0.005$), and Y-BOCS compulsion scores ($B=0.115$, $P=0.010$). PSLES lifetime score predicted 21.3%, 13%, and 11% of variance in Y-BOCS total, obsession, and compulsion scores, respectively. PSLES past 1 year scores positively predicted Y-BOCS total scores ($B=0.450$, $P=0.003$) and Y-BOCS obsession

scores ($B=0.207$, $P=0.011$). PSLES past 1 year score predicted 14.6% and 10.6% of variance in Y-BOCS total and obsession scores.

Table 7 shows the correlation between different sociodemographic parameters (continuous) and PSLES scores. Positive correlation was found between total PSLES scores in lifetime with age of the patient ($r=0.567$, $P<0.001$), total duration of OCD in years ($r=0.471$, $P<0.001$), and with age of onset of OCD symptoms ($r=0.457$, $P<0.001$). No significant correlation was found between total years of education and PSLES scores at lifetime and past 1 year.

Table 8 shows correlation between OCD severity with depression and anxiety severity. A positive correlation between HAM-A scores and Y-BOCS total score ($r=0.411$, $P=0.001$), Y-BOCS Obsession score ($r=0.274$, $P=0.034$) and Y-BOCS Compulsion score ($r=0.369$, $P=0.004$) was found. However, no correlation was found between

Table 5: Pearson correlation between different clinical parameters and PSLES scores both at lifetime and past 1 year in cases

Variables	Y-BOCS total score	Y-BOCS obsession score	Y-BOCS compulsion score	HARS score	HDRS score
Total PSLES score in lifetime					
r	0.461(**)	0.360(**)	0.332(**)	0.305(*)	0.213
P	0.000	0.005	0.010	0.018	0.102
Total PSLES score in last 1 year					
r	0.382(**)	0.325(*)	0.243	0.304(*)	0.310(*)
P	0.003	0.011	0.062	0.018	0.016

**Significant at the 0.01 level (2-tailed), *Significant at the 0.05 level (2-tailed). Y-BOCS: Yale brown obsessive compulsive scale, PSLES: Presumptive stressful life events scale, HARS: Hamilton anxiety rating scale, and HDRS: Hamilton depression rating scale

Table 6: Predictors of Y-BOCS scores using simple linear regression analysis

Outcomes	Variables	R square	beta	Standard error	b	t	P-value
Y-BOCS total score	Constant	0.213	21.221	1.459		14.542	<0.001
	Total PSLES score in lifetime		0.275	0.069	0.461	3.961	<0.001
	Constant		0.146	22.918	1.295		17.693
Y-BOCS obsession score	Total PSLES score in the past 1 year	0.130	0.450	0.143	0.382	3.149	0.003
	Constant		10.800	0.828		13.038	<0.001
	Total PSLES score in lifetime		0.116	0.039	0.360	2.942	0.005
Y-BOCS compulsion score	Constant	0.106	11.366	0.716		15.885	0.000
	Total PSLES score in the past 1 year		0.207	0.079	0.325	2.621	0.011
	Constant		0.110	11.274	0.899		12.538
Y-BOCS compulsion score	Total PSLES score in lifetime	0.059	0.115	0.043	0.332	2.683	0.010
	Constant		12.174	0.788		15.448	0.000
	Total PSLES score in the past 1 year		0.166	0.087	0.243	1.907	0.062

Y-BOCS: Yale brown obsessive compulsive scale, PSLES: Presumptive stressful life events scale

Table 7: Correlation between different sociodemographic parameters (continuous) and PSLES scores

Variables	Total years of education	Age in years	Total duration of OCD (in years)	Age of onset (in years)
Total PSLES score in lifetime				
Pearson correlation	-0.193	0.567 (**)	0.471 (**)	0.457 (**)
Sig. (2 tailed)	-0.140	<0.001	<0.001	<0.001
Total PSLES score in the past 1 year				
Pearson correlation	-0.067	0.127	0.064	0.129
Sig. (2 tailed)	0.612	0.332	0.628	0.325

**Correlation is significant at the 0.01 level (2-tailed), *Correlation is significant at the 0.05 level (2-tailed). PSLES: Presumptive stressful life events scale, OCD: Obsessive-compulsive disorder

Table 8: Correlation between OCD severity with depression and anxiety severity

Variables	HDRS score	HARS score
Y-BOCS total score		
Pearson Correlation	0.132	0.411 (**)
Sig. (2-tailed)	0.316	0.001
Y-BOCS obsession score		
Pearson Correlation	0.029	0.274
Sig. (2-tailed)	0.828	0.034
Y-BOCS compulsion score		
Pearson Correlation	0.139	0.369 (**)
Sig. (2-tailed)	0.291	0.004

**Correlation is significant at the 0.01 level (2-tailed) *Correlation is significant at the 0.05 level (2-tailed). HDRS: Hamilton depression rating scale, HARS: Hamilton anxiety rating scale, OCD: Obsessive-compulsive disorder, Y-BOCS: Yale brown obsessive compulsive scale

Y-BOCS total scores, obsession score, and compulsion score with HAM-D scores.

DISCUSSION

This study was a hospital-based, cross-sectional, and case-control study, undertaken with the aim of probing into the frequency of life events in patients with OCD. The study also intended to search for the impact of life events on the severity of the OCD. Very few studies have tried to find the frequency of life events in OCD patients and the results are also contradictory.²¹

Since other anxiety disorders and depression are the most common comorbidities associated with OCD and are also known to be associated with life events, the present study has attempted to explore the role of life events on comorbid depression and anxiety in OCD patients.

The PSLES scale used in this study has covered a wide domain of life events, a total of 51 in number covering domains of family and social life, work, financial, marital and sexual, health, bereavement, education, legal issues, and finally courtship and cohabitation. It has been well standardized in the Indian population. PSLES was developed from Social Readjustment Rating Questionnaire of Holmes and Rahe which is a standard rating instrument for the assessment of life events and used worldwide.²² The modification was meant to serve two purposes: first, to remove those items which were symptoms of illness and thereby increasing the content validity, and secondly, to modify certain items to suit our unique cultural values. The life events occurring “1 year” before the onset of illness and over “lifetime” were recorded. Khanna *et al.*, had used Paykel’s Life Events Schedule, which has not been validated in our population. Hence, our study was superior in this aspect.¹²

Inclusion of a normal healthy comparison group allowed us to examine the association of life events with OCD. In comparison to the study by Khanna *et al.*, which assessed life events only in the year before the onset of illness, we assessed life events in the past 1 year as well as the entire lifetime. This gave us a broader picture of the cumulative role of life events in the onset of OCD.

Total PSLES score for lifetime in the case group (20.40 ± 5.06 [SD]) was more than the control group (12.07 ± 2.41 [SD]). A significant difference was found between these two groups ($t=11.527$; $P<0.001$). Similarly for the total PSLES score in the past 1 year, the case group score (8.62 ± 2.58 [SD]) was more than the control group score (6.50 ± 1.70 [SD]). The difference was found to be statistically significant ($t=5.307$; $P=0.006$) (Table 3). The effect size of the findings was large. This is in agreement with several previous studies.

Mckeon *et al.*, in their study with obsessive-compulsive patients, reported a mean of 1.60 events per person over 1 year before onset, and the matched comparison group a mean of 0.76 events for their period of enquiry; the differences were significant at $P<0.01$ (one-way analysis of variance).⁶ In a study by Sarkhel *et al.*, there were significantly higher life events, both 6 months ($t=3.95$, $P=0.001$, $r=0.681$) and lifetime ($t=5.53$, $P<0.001$, $r=0.793$), in the patient group as compared to controls.²³ In an older study by Kulhara and Rao using the same PSLES scale also

showed that patients had significantly higher scores on life events for a time span of 1 year before the onset of illness as compared to controls (4.62 ± 1.03 vs. 1.35 ± 0.57 , $P<0.001$).⁸ On the contrary, few studies reported no difference in life events between obsessive patients and healthy subjects over 1 year before onset of OCD, although Khanna *et al.*, found an excess of life events in the 6 months before onset of the disorder.^{11,12} Therefore, our study conforms to the finding that there is increased frequency of life events in OCD patients both at lifetime and in the year before onset than normal controls.

In the patient group, PSLES Lifetime scores positively correlated with Y-BOCS total ($r=0.461$, $P<0.001$), obsession ($r=0.360$, $P=0.005$), and compulsion ($r=0.332$, $P=0.010$) scores whereas PSLES past 1-year scores positively correlated with Y-BOCS total ($r=0.382$, $P=0.003$) and obsession ($r=0.325$, $P=0.011$) scores (Table 5).

To probe further whether there was any predictive value of PSLES score in terms of OCD severity (Y-BOCS scores), we carried out a simple regression analysis, using PSLES scores as predictor variable and Y-BOCS total score, obsession score, and compulsion score as outcome variable (Table 6). PSLES lifetime score predicted 21.3%, 13%, and 11% of variance in Y-BOCS total, obsession, and compulsion scores, respectively. PSLES last 1 year score predicted 14.6% and 10.6% of variance in Y-BOCS total and obsession scores. Similar results were found in recent studies by Sarkhel *et al.*, where in the patient group, PSLES 6-month scores positively correlated with Y-BOCS total ($r=0.82$, $P=0.004$), obsession ($r=0.70$, $P=0.025$) and compulsion ($r=0.81$, $P=0.004$) scores whereas PSLES lifetime scores positively correlated with Y-BOCS total ($r=0.68$, $P=0.03$) and obsession ($r=0.85$, $P=0.002$) scores.²³ In the study by Cromer *et al.*, traumatic life events (TLE) were associated with increased Y-BOCS total scores ($\beta=0.19$, $t(241)=3.06$, $P<0.001$), as well as increased Y-BOCS obsessions ($\beta=0.17$, $t(241)=2.6$, $P<0.001$) and compulsions ($\beta=0.17$, $t(241)=2.74$, $P<0.001$), considered separately.²¹ Hence, we conclude that there is initial support for a pathoplastic relationship between SLEs and OCD symptomatology.

With increasing age of onset, a positive correlation was found with lifetime total PLES scores ($r=0.457$, $P<0.001$). Similar finding was mentioned by Real *et al.*, where the SLE-preceded OCD group showed a later onset of the disorder (odds ratio=1.04, $P=0.015$).²⁴ Study by Frydman *et al.*, showed that late-onset OCD was more likely to occur in association with a major traumatic event occurring after age 40 and a history of recent pregnancy in self or in significant others.²⁵ It is in agreement with other family studies of OCD that have shown an inverse relationship

between age at onset and genetic loading.^{3,4} Indeed, both early onset and family history of OCD may be linked to a greater genetic predisposition, such that, in these subjects, the onset of the disorder is less likely to coincide with an SLE and may be more influenced by genetic loading.

There was a positive correlation between HAM-A scores with both lifetime total PSLES scores ($r=0.305$, $P=0.018$) and past 1-year PSLES scores ($r=0.304$, $P=0.018$). Positive correlation between HDRS scores and past 1-year PSLES score was found ($r=0.310$, $P=0.016$) but not with lifetime PSLES scores (Table 5). Positive correlation was found between Y-BOCS total score and HAM-A scores ($r=0.411$, $P=0.001$); however, no correlation was found between Y-BOCS total scores and HAM-D scores. This finding apparently supports existing literature on the role of life events in depression and anxiety disorders.²⁶ However, no correlation between HDRS scores with either lifetime or 6-month PSLES scores was found by Sarkhel *et al.*²³

That HAM-D scores correlated with past 1-year PSLES scores but not with the lifetime PSLES scores and lack of significant relationship between Y-BOCS score and HAM-D scores in our study could be explained by the inhomogeneity of our study samples, being mostly referred from other centers, suffering from OCD for a prolonged duration and having undergone multiple drug trials before first contact at our center and depression in our patient group probably developed as an independent comorbidity of OCD. Positive correlation between anxiety severity and Y-BOCS scores lends support to the earlier notion of including OCD in the anxiety spectrum disorder.

Limitations of the study

A clearer test of the pathoplastic vulnerability model would have been to only consider those SLEs that occurred following the onset of OCD. Unfortunately, the exact age at which each SLE took place was not adequately assessed in our sample, and given the archival nature of our study, we were therefore unable to focus solely on the events that took place post-onset. Future investigations should consider this approach when examining the pathoplastic relationship between SLEs and OCD. Finally, the possibility exists that individuals with greater OCD severity may be more sensitive to recalling SLEs. A prospective design would be necessary to test this possibility. Furthermore, the role of the specific nature of life events was not assessed in the current study.

CONCLUSION

The present study used PSLES, validated on Indian population, included healthy controls for comparison,

and revealed that there were significantly more life events in OCD patients compared to controls, both past 1 year ($P=0.006$) and lifetime ($P<0.001$). Furthermore, 1 year PSLES scores before OCD positively predicted severity of obsessive and compulsive symptoms as reflected in Y-BOCS total and obsession scores. From this study, the authors conclude that one putative vulnerability factor for OCD is SLEs including TLEs. The positive correlation between HAM-D and HAM-A scores and last 1 year PSLES scores, probably denotes comorbid depression and anxiety with OCD.

ACKNOWLEDGMENT

All the authors sincerely acknowledge the intellectual contribution and guidance of Dr. Sikha Mukhopadhyay, Retired Associate Professor, Department of Psychiatry, IPGMER and SSKM Hospital, Kolkata, to this study.

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USM- Definition of intellectual content and data collection; **SM**- Statistical analysis and interpretation of results; **SBK**- design of the study and review of manuscript; **AM**- data collection, literature search, preparation of manuscript, and corresponding author; **SKH**- data collection and review of literature.

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Source of Support: Nil, **Conflicts of Interest:** None declared.