

Life events in obsessive-compulsive disorder: A cross-sectional study



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Submission: 24-03-2023

Revision: 30-05-2023

Publication: 01-07-2023

ABSTRACT

Background: Obsessive compulsive disorder (OCD) is a chronic psychiatric disorder having significant deterioration in patients' socio-occupational functioning. Stressful life events (SLE) were noted before onset of this disorder. The previous study with Indian population found positive correlation between stressful and traumatic life events and OCD, but was with small sample size and thus result couldn't be generalized. **Aims and Objectives:** The aim of the study was to examine the role of life events in patients with OCD and to find out correlation between them, if any. **Materials and Methods:** Consecutive 30 OPD patients fulfilling ICD-10 DCR criteria for OCD were rated with Yale Brown Obsessive Compulsive Scale (YBOCS), Hamilton Rating Scale for Depression (HAM-D), Hamilton Rating Scale for Anxiety (HAM-A), and Presumptive Stressful Life Events Scale (PSLES). A group of 30 healthy controls from unrelated patient party were also rated on PSLES. Finally, both groups were statistically compared in terms of life events. **Results:** Two groups were identical in distribution of age and sex. The frequency of life events, 1-year ($P=0.000$) and lifetime ($P=0.000$), were significantly higher in OCD group in comparison to healthy controls. There was significant positive correlation between PSLES scores and YBOCS scores. Step-wise linear regression analysis found positively predictability of PSLES score to OCD severity. **Conclusion:** OCD patients have statistically significant SLE before the onset of their disorder and total number of life events has positive correlation with severity of OCD.

Key words: HAM-A; HAM-D; OCD; PSLES; Stressful life events; Traumatic life events; Y-BOCS

INTRODUCTION

Obsessive compulsive disorder (OCD) is a chronic psychiatric disorder, characterized by repetitive intrusive unwanted thoughts, images, and urges (obsession) which may or may not be associated with repetitive behavior or mental acts (compulsion) to nullify those thoughts or their effect. Some common compulsions include hand washing, cleaning, checking things, ordering items in a certain way, repeating actions, and seeking reassurance. About 2.3% of people at some point in their life were affected by OCD and worldwide rates during a given year were found to be about 1.2%.¹ Patient, suffering from OCD, remains associated with obsession and compulsion for a significant time of a

day (>1 h/day) which results in significant impairment in day-to-day socio-occupational functioning. The cause of this psychiatric disorder is unknown and is supposed to be multifactorial.² Both genetic and environmental factors are believed to play a role and several psychosocial stress factors may contribute toward vulnerability to OCD.³ Though previous researches⁴ on mood disorders found significant role of stressful life events (SLE) behind them,³ relatively well-designed studies reported conflicting results regarding role of SLE behind OCD and were confusing. Where McKeon et al.,⁴ and Kulhara and Rao⁵ found excess of life events over the year before onset of OCD in comparison to healthy subjects, few studies^{6,7} reported no difference in life events between obsessive patients and

Access this article online

Website:

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

DOI: 10.3126/ajms.v14i7.53495

E-ISSN: 2091-0576

P-ISSN: 2467-9100

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healthy control. Recent studies^{8,9} comparing life events in subjects with OCD, both in pregnant women and in children, found significant role of SLE behind it. There are certain genotypes which modulate the risk of expression of OCD in the presence of specific environmental factors and again Trauma-related subtype of OCD is of potential interest as this may be associated with a poor outcome in response to conventional anti-OCD treatment.¹⁰ “Stress” refers to diverse factors which can be conceptualized as a rather general term including concepts such as SLE and traumatic life events (TLE). Where SLE refers to sufficiently rapid changes in the external environment, TLE, or simply trauma, signifies an event that involves actual or threatened death or serious physical injury of self or others.¹¹ Recent Indian studies¹² on the role of SLE on OCD using presumptive stressful life event scale, a validated instrument for Indian population, found that life events were significantly more frequent in OCD patients both 6 months and lifetime, as compared to healthy controls. The small sample size (n=10) was one of the major limitations of those studies which undermined the generalizability of their findings.

Aims and objectives

Our study was aimed to find out role of SLE in OCD in Indian population using larger sample size and structured validated stressful life event scale, so that findings could be generalized for Indian population.

MATERIALS AND METHODS

This was a cross-sectional study, conducted in psychiatry department of a tertiary medical college, Kolkata, on outpatient basis in the year 2018. The study was conducted after getting approval from the ethical committee of the hospital. Consecutive thirty (n=30) OCD patients of either sex according to ICD-10-DCR diagnostic criterion were selected according to inclusion and exclusion criterion.

Inclusion criteria

The following criteria were included in the study:

1. Age ≥ 18 years
2. Willing to give written informed consent

Exclusion criterion

1. Having other comorbid major psychiatric disorder other than mild-to-moderate depression, severe medical illness, and mental retardation was excluded from the study.

Thirty age and sex matched healthy controls, with scores < 1 in GHQ-5, were selected from consecutive unrelated patient party, who were willing to participate in the study and gave written informed consent. Sociodemographic data

were collected on standard demographic data sheet and total Yale Brown Obsessive Compulsive Scale (YBOCS) score for OCD, HAM-D score for depression, HAM-A score for anxiety were collected on related scale. Yale-Brown Obsessive Compulsive Scale¹³ (Y-BOCS) is a tool to measure the severity of obsessive-compulsive disorder (OCD) symptoms. The scale, designed by Goodman et al., is used extensively for research purpose and for clinical practice to determine severity of OCD and to monitor improvement during treatment. Hamilton Depression Rating Scale,¹⁴ abbreviated as HAM-D, is a multiple item questionnaire used to diagnose depression, assess its severity, and as a tool to evaluate recovery. HAM-D was used to assess presence and severity of depression and to find out whether it had any statistical significant relation to SLE in our study population. Hamilton Anxiety Rating Scale¹⁵ (HAM-A) is a psychological questionnaire used by clinicians to rate the severity of a patient's anxiety. We also tried to find out whether its score had any relation to stressful and traumatic life events. Total SLE both for case and control were observed on presumptive stressful life events scale (PSLES).¹⁶ PSLES is a semi-structured interview scale, covering 51 defined life events and is scored 0 and 1 for the absence and presence of particular life events (maximum possible score being 51 and has been well-standardized in the Indian population. It was developed from social readjustment rating questionnaire (SRRQ) of Holmes and Rahe,¹⁷ a standard rating instrument for assessment of life events and was used worldwide. The modification was done to remove those items which were symptoms of illness and thereby increasing the content validity, and to modify certain items to suit our unique cultural values. The life events occurring “1 year” prior to the onset of illness and over “lifetime” were recorded both for case and healthy control.

Statistical analysis of results was done according to standard statistical methods and by using SPSS-version 10.0 for Windows[®] (SPSS Inc., Chicago, IL, U.S.A.). Normality of data was assessed using histogram and age-sex match comparison between subjects and control were assessed by difference of mean and p value. Both groups were compared using independent t-test and chi-square test for comparison of means, wherever applicable. Linear step-wise regression analysis was carried out using YBOCS-obsession scores, compulsion scores, and total scores, as dependent variables against HAM-D score, HAM-A score, PSLES total score for 1 year, and life time, respectively in a step-wise manner. R and Adjusted R square were reported as it controls for the number of independent variables. Statistical significance assessment was done by using Durbin-Watson statistic (value-1.5-2.5) and by P value. The alpha level of $P < 0.05$ was considered statistically significant.

RESULTS

Sociodemographic and descriptive statistics for various mean values of both groups were listed in Table 1. Mean age of the study population was 39.20 (13.03) years and that of healthy control was 40.40 (11.63) years. Mean difference of age between study population and healthy control was not statically significant ($P=0.506$), meaning no difference in age distribution between both groups. 40% ($n=12$) of the OCD patients were male and 60% were female patients and those of healthy control were 43.30% ($n=13$) and 56.70% ($n=17$), respectively. Again there was no significant difference in gender distribution between two groups ($P>0.05$). Mean HAM-D score of the study group was 11.13 (4.75) and linear regression model did not found any significant correlation between HAM-D score and total PSLES score both at 1 year ($P=0.842$) and for life time ($P=0.677$). Mean HAM-A score was 11.46 (5.15) and again there was no significant correlation between HAM-A score and total PSLES score both at 1 year ($P=0.378$) and for life time ($P=0.070$). Mean score on YBOCS scale for obsession was 9.20 (2.36), for compulsion 7.70 (5.01) and that for total YBOCS score was 17.83 (7.18). PSLES score at 1 year of OCD patients was 3.73 (2.81), of healthy control was 0.16 (0.59) and there was statistically significant difference between those two groups (T [df]–6.635 [29] and $P=0.000$) for SLE at 1 year. Life time PSLES score of OCD patients was 4.66 (2.99), of healthy control was 1.4 (2.15) and again there was statistically significant difference in life time traumatic events between those two groups (T [df]–5.456 [29] and $P=0.000$). Table 2 is showing step-wise linear regression analysis to find out correlation between SLE at 1 year (PSLES-1 year), traumatic life events (PSLES-life time), and various YBOCS score (obsession, compulsion, and total score). In the patient group, PSLES 1-year scores positively correlated with YBOCS total ($P=0.000$) and compulsion ($P=0.000$) scores whereas PSLES lifetime scores positively correlated with YBOCS total ($P=0.000$), obsession ($P=0.019$) scores, and compulsion ($P=0.000$) scores. PSLES 1 year scores positively predicted YBOCS total ($B=1.939$, $P<0.000$)

and compulsion scores ($B=1.090$, $P<0.000$). The models explained 56.8% and 35.2% of variance in YBOCS total and compulsion scores, respectively. PSLES lifetime scores positively predicted YBOCS total ($B=1.758$, $P<0.000$), compulsion scores ($B=1.228$, $P<0.000$) and for YBOCS obsession scores ($B=0.338$, $P<0.019$). The model explained 52.1%, 15.3% and 52.1% of variance in YBOCS total, obsession, and compulsion score, respectively.

DISCUSSION

Our study had age and sex matched healthy control group, allowing us to examine the association of life events with OCD appropriately, effectively, and correctly.

From our study, we found that SLE were significantly higher in OCD patients than healthy controls both for 1 year and for life time. It was similar with recent study¹⁸ which also found SLE, including traumatic experiences, before the onset of OCD symptoms in 61% patients of life events related OCD (LE-OCD) group.

SLE in OCD

The previous attempts to link SLEs to the onset of OCD were highly variable as those attempts were made by means of non-validated instruments,¹⁹ questionnaires covering different types of “precipitants,”²⁰ semi-structured interviews, or even non-specified methods.²¹ Patients with OCD were described to have an increased number and severity of SLEs, including arguments, childbirth, serious illness, and traumatic brain injury in the 6 months before to the onset of illness.⁶ In our study we used a more validated instrument for Indian population, PSLES Scale, and found to have positive correlation between SLE with onset of OCD. Where PSLES score for 1 year were significantly higher for Y-BOCS total score and compulsion score, PSLES score for life time were significantly higher for Y-BOCS total score, obsession score, and compulsion score. Our study reflected similar finding with Sarkhel et al.,¹² and Khanna et al.,⁶ who also found an excess of

Table 1: Sociodemographic and clinical characteristics of both groups

Variables	Patients (n=30)	Control (n=30)	P-value
Age	39.20 (13.03)	40.40 (11.63)	0.506
Sex	M-12 (40%) F-18 (60%)	M-13 (43.3%) F-17 (56.7%)	>0.05
HAM-D	11.13 (4.75)		PSLES-1 Year 0.842
HAM-A	11.46 (5.15)		PSLES- Life Time 0.677 PSLES-1 Year 0.378 PSLES- Life Time 0.070
YBOCS total score	17.83 (7.18)		
YBOCS obsession score	9.20 (2.36)		
YBOCS compulsion score	7.70 (5.01)		

YBOCS: Yale-brown obsessive compulsive scale, HAM-D: Hamilton depression rating scale, HAM-A: Hamilton anxiety rating scale, PSLES: Presumptive stressful life event scale

Table 2: Linear step-wise regression analysis of predictors of YBOCS scores in OCD patients

YBOCS	R	Adjusted R ²	B (beta)	t	Sign.	Durbin Watson
YBOCS total score						
Constant	0.75	0.562	10.595 (0.759)	7.26	0.000	2.054
PSLES (1 Year)			1.939	6.177		
Constant	0.73	0.521	9.628 (0.733)	5.664	0.000	2.195
PSLES (Life Time)			1.758	5.709		
YBOCS Obsession Score						
Constant	0.344	0.087	8.118 (0.344)	11.69	0.062	2.113
PSLES (1 Year)			0.290	1.940		
Constant	0.427	0.153	7.625 (0.427)	10.229	0.019	2.229
PSLES (Life Time)			0.338	2.500		
YBOCS compulsion score						
Constant	0.612	0.352	3.630 (0.612)	2.931	0.000	1.960
PSLES (1 Year)			1.090	4.091		
Constant	0.733	0.521	1.971 (0.733)	1.661	0.000	1.662
PSLES (Life Time)			1.228	5.709		

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

events in the 6 months before onset of OCD. PSLES retained universality of SRRQ¹⁷ as statistically significant positive correlation was found between OCD and SLE in Indian population. Unlike previous Indian study,¹² where sample size (n=10) was less thus study results could not be generalized, our study was with bigger sample size with both study (n=30) and control group (n=30) and thus results can be generalized for Indian population and may be for other population of different culture.

TLE in OCD

While the relation between SLEs and OCD is becoming more clearly established, the role of TLEs is somewhat less clear. People feared serious injury or death were associated with increased rates and/or severity of PTSD, major depressive episode, agoraphobia, and of social anxiety disorder. Where trauma was found to be significant and independent predictor of OCD in at least two previous studies²² but in our study, PSLES score did not correlated with depression and anxiety score. This finding needs further research.

Limitations of the study

(1) Role of the specific nature of life were not included in our study and (2) correlation was not studied for various-obsessive and compulsive symptoms according to symptom checklist. We did not have the scope to find out which type of stressful events had more impact on OCD for Indian population. As like those of previous studies,¹² we also faced the problem of recall bias for lifetime stress events. Again, cause and effect relationship between life events and OCD could not be assessed from our study.

CONCLUSION

OCD patients have statistically significant SLE before the onset of their disorder and total number of life events has

positive correlation with severity of OCD. We need further study to establish cause and effect relationship between life events and OCD.

ACKNOWLEDGMENT

Late Dr. Partha Dutt, Ex-Assistant Professor, Department of Psychiatry, Vivekananda Institute of Medical Sciences, Kolkata, West Bengal, India was one of the Principal Contributor and co- author of this article.

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Author's Contributions:

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