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# Association of Anxiety and Depression with Expressed Emotion in Caregivers of Patients Having Obsessive Compulsive Disorder

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**ABSTRACT**

Obsessive Compulsive Disorder (OCD) is chronic psychiatric disorder and patients with OCD suffer disability and poor quality of life. Caregivers of OCD patients shows high level of expressed emotion (EE) compared to general population. study the frequency of anxiety, depression and EE in caregivers of OCD patients and to find out association of anxiety and Depression with EE in them. Also to find out association of severity of OCD in patients with anxiety, Depression and EE in caregivers. This was an observational, cross sectional, single-centered, interview-based study of 100 patients having OCD and their caregivers in Psychiatry Department, Sir. T. Hospital, Bhavnagar, Gujarat from September 2019 to May 2020. Every patient and their caregiver's responses were recorded in a proforma containing details of demographic variables. Details regarding duration of illness, religion, residence, social class of patient and number of family members in patient's family was taken. Details regarding caregiver's relation with patient and living with patient since how many years was also taken. Interview of every patient was taken to assess severity of OCD using Yale Brown Obsessive Compulsive Scale and to assess expressed emotion by using Family Emotional Involvement and Criticism Scale. Caregiver's interview was taken in isolation to diagnose anxiety and depression in them by using Hospital Anxiety and Depression scale (HADS). Frequency of anxiety and depression among caregiver was 5% and 3%respectively. Frequency of patients having Y-BOCS score <16 was 22% and score ≥16 was 78%. There was no association between anxiety and depression with expressed emotion seen in caregivers. There was no association between severity of OCD in patients with expressed emotion, anxiety and depression seen in caregivers. Caregivers of OCD patients had high level of expressed emotion. There was no association between anxiety and depression with EE in caregivers of OCD patients and no correlation between severity of OCD in patients with EE, anxiety and depression in caregivers.

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**Key Words**
Obsessive compulsive disorder, anxiety, depression, expressed emotion

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## INTRODUCTION

Obsessive compulsive disorder (OCD) is chronic psychiatric disorder and it is one of the 10 most disabling medical condition worldwide[1].The lifetime prevalence of OCD is estimated to be 2-3%[2].These figures make OCD the fourth most common psychiatric disorder. These figure shows that prevalence of OCD is twice as that of the bipolar disorder and schizophrenia. Because of such high rates in epidemiological studies, it is labeled as "hidden epidemic"[5]. Even then this disorder has not received much attention as it is a non-psychotic illness.

OCD is defined by presence of obsessions and/or compulsions. Obsessions are repeated and persistent urges, images, or thoughts which are intrusive and undesirable. Compulsions are recurrent behaviors or mental acts in response to obsessions which reduce or prevent distress or anxiety caused by obsessions. Both obsessions and compulsions are very time consuming and leads to clinically significant impairment in occupational, social and other important areas of functioning. Impairment can be due to time consumption, avoiding situations that can develop obsessions and compulsions. Most individuals with OCD have both obsessions and compulsionsv[6].

Various studies have shown that patients with OCD suffer from disability and poor quality of life[7-8]. Other studies have shown that OCD is associated with disability in several areas, particularly in marital, occupational, emotional and social functioning, increase in use of health care services and financial difficulties[9-12].

After the deinstitutionalization of the mentally ill patient there has been increasing awareness among the mental health professionals regarding the impact of the various mental illnesses on the families of the mentally ill patient. There has been growing interest in the study of expressed emotion (EE) among the caregivers of OCD patients. Various studies in past shows that caregivers of OCD patients shows high level of EE[13-15] Family members often modify the family functioning and routines to accommodate their relatives rituals[16-17]. This family accommodation is linked to global family dysfunction and distress.

The components of expressed emotion are critical comments, hostility, emotional overinvolvement, positive remarks and warmth. Hostility and criticism are very much high in caregivers showing high EE. These caregivers feel that the patient can able to control the illness and it is internal. Those caregivers who express low expressed emotion are differs from high expressed emotion caregivers in that they are more conservative with their criticism. They feel that illness is out of control of patient, so they sympathize with the patient. The reason behind is that now a days more information available about the illness and caregivers have more understanding and knowledge about the illness which makes them less hostile and critical towards patient[18]. Caregivers require support, and may be considered to be consumers of mental health services themselves. There were scales developed to assess expressed emotion in caregivers., Family emotional involvement and criticism scale(FEICS), Perceived criticism scale(PCS), Family attitude scale(FAS), Brief dyadic scale of expressed emotion-expanded(BDSEE), Family environment scale(FES) are notable examples[19].

Some studies in past shows that caregivers of OCD patients are suffering from anxiety and depression while other studies shows that caregivers develops hope and coping strategies. These strategies may be the reason for not developing depression and anxiety in caregivers[20-23]. Also there were studies which shows that there was no significant association between severity of OCD and expressed emotion[24-25]. There have been very few studies which are carried out using standardized tool to measure expressed emotion in OCD and comparing with its severity. So in this study we tried to find out whether there is any association between expressed emotion with anxiety and depression in caregivers and association of severity of OCD in patients with expressed emotion, anxiety and depression in caregivers.

## MATERIALS AND METHODS

We carried out a cross sectional, observational, single center, interview-based study of total 100 patients having OCD and their caregivers in psychiatry department, Sir. T. Hospital, Bhavnagar, Gujarat from September 2019 to May 2020. Prior approval from local ethics committee (Institutional Review Board) was taken. Written informed consent from every participant was taken after explaining the purpose of the study. Anonymity and confidentiality of participants were maintained. Interview was taken in participant's vernacular language (Gujarati) or Hindi or English. Patient was diagnosed with OCD from DSM-5 diagnostic criteria[6].

Every patient and their caregiver's responses were recorded in a proforma containing details of demographic variables such as patient's initials and patient's and caregiver's age, gender, occupation, marital status and education. Details regarding duration of illness, religion, residence, social class of patient and number of family members in patient's family was taken. Details regarding caregiver's relation with patient and living with patient since how many years was also taken. Interview of every patient was

taken to assess severity of OCD using Yale brown obsessive-compulsive scale(Y-BOCS) and to assess expressed emotion by using Family emotional involvement and criticism scale (FEICS). Caregiver's interview was taken in isolation to diagnose anxiety and depression in them using Hospital anxiety and depression scale (HADS)[26-29].

Qualitative data was expressed as percentage and quantitative as mean±standard deviations. Statistical analysis was done with graph pad in stat version 3.06(San Diego, California US). Proportion of participant was compared by using chi-square test, while scores of Y-BOCS, FEICS, HADS were compared by using Mann Whitney test. A p value of <0.05 was considered statistically significant.

## RESULTS AND DISCUSSIONS

The study was carried out at Psychiatry department, Sir. T. Hospital, Bhavnagar to find out association of anxiety and depression with expressed emotion in caregivers of patients having OCD. Total 100 patients and their caregivers are included in the study.

*Represents assessment of anxiety, depression and expressed emotion by HADS scale and FEICS scale.

Data is represented in numbers and groups were compared by chi- square test and Mann Whitney test, p<0.05 is considered to be statistically significant.

Assessment of emotional overinvolvement was done by FEICS scale.

*Represent Educated patients and caregivers (primary secondary, graduate and post graduate).

In Table 2 shows that education of patient was significantly associated with severe emotional overinvolvement(p=0.02). Other demographic variables were not significantly associated with emotional overinvolvement.

Data is represented in numbers and mean±S.D, groups were compared by chi- square test and Mann Whitney test, p<0.05 is considered to be statistically significant.

Assessment of perceived criticism was done by FEICS scale.

*Represent educated patients and caregivers (primary, secondary, graduate and post graduate).

In Table 3 shows that demographic variables such as male patient, more number of family members, mother and wife as a caregiver and married caregiver were significantly associated with moderate level of perceived criticism with p value of 0.002, 0.01, 0.001, 0.0008. Other demographic variables were not significantly associated with perceived criticism.

Data is represented in numbers and mean±S.D, groups were compared by chi-square test and Mann Whitney test, p<0.05 is considered to be statistically significant.

Assessment of severity of OCD was done by Y-BOCS

*Represent educated patients and caregivers (primary, secondary, graduate and post graduate).

In Table 4 shows that demographic variables such as female gender of patient, more number of family members, mother as a caregiver and educated caregiver were significantly associated with high Y-BOCS score with p value of 0.03, 0.01, 0.005, Other demographic variables were not significantly associated with Y-BOCS score.

Data is represented in Mean±S.D, comparison of emotional overinvolvement with anxiety and depression in caregivers of OCD patients were done by Mann Whitney test, p<0.05 is considered to be statistically significant.

Emotional overinvolvement, anxiety and depression were assessed by FEICS and HADS scale. In Table 5 shows that there were no significant association found between emotional overinvolvement with anxiety and depression in caregivers.

Data is represented in Mean±S.D, comparison of perceived criticism with anxiety and depression in caregivers of OCD patients were done by Mann Whitney test, p<0.05 is considered to be statistically significant.

Perceived criticism, anxiety and depression were assessed by FEICS and HADS scale. In Table 6 shows that there were no significant association found between perceived criticism with anxiety and depression in caregivers.

Data is represented in mean±S.D, comparison of severity of OCD with expressed emotion, anxiety and depression in caregivers of OCD patients were done by Mann Whitney test, p<0.05 is considered to be statistically significant.

Severity of OCD, expressed emotion, anxiety and depression were assessed by Y-BOCS, FEICS and HADS scale. EOI=Emotional overinvolvement PC=Perceived criticism In Table 7 shows that there were no significant association found between severity of OCD with expressed emotion, anxiety and depression in caregivers.

We conducted a study to find out association of anxiety and depression with expressed emotion in caregivers of patients having OCD. We also assess severity of OCD in patients and its association with expressed emotion, anxiety and depression in their caregivers.

Our study shows that caregivers of OCD patients had high level of expressed emotions in both the subscales of FEICS. It is consistent with the previous studies were caregivers of OCD patients had been found to have high level of EE[13-15].

**Table 1: Frequency of Expressed Emotion, Anxiety and Depression in Caregivers of OCD Patients. (n=100) ***

| Variables | | Frequency (%) | |
|---|---|---|---|
| Emotional overinvolvement | Mild | Moderate | Severe |
| | 1% | 33% | 66% |
| Perceived criticism | Mild | Moderate | Severe |
| | - | 92% | 8% |
| Anxiety | | 5% | |
| Depression | | 3% | |

**Table 2: Comparison of Demographic Variables and Other Factors Related to Emotional Overinvolvement**

| Demographic variables | | Emotional overinvolvement | | | |
|---|---|---|---|---|---|
| | | Mild (n=1) | Moderate (n=33) | Severe (n=66) | p-value |
| Age of patient 24±0.0 | | 32.21±9.3 | 38.19±14.0 | 0.07 | |
| Gender of patient | Male | 1 | 23 | 39 | 0.43 |
| | Female | 0 | 10 | 27 | |
| Duration of illness | | 1±0.0 | 7.57±5.3 | 38.19±14.0 | 0.29 |
| Occupation Of patient | Unemployed | 0 | 15 | 31 | 0.25 |
| | Laborer | 0 | 9 | 23 | |
| | Semiprofessional | 1 | 5 | 8 | |
| | Professional | 0 | 4 | 4 | |
| Marital status of patient | Unmarried | 0 | 15 | 27 | 0.77 |
| | Married | 1 | 16 | 31 | |
| | Divorced | 0 | 2 | 4 | |
| | Widow | 0 | 0 | 4 | |
| | Widower | 0 | 0 | 0 | |
| | Separated | 0 | 0 | 0 | |
| Education of patient | Illiterate | 0 | 2 | 13 | 0.02 |
| | Educated* | 1 | 31 | 53 | |
| Religion of patient | Hindu | 1 | 26 | 46 | 0.53 |
| | Muslim | 0 | 7 | 20 | |
| | Other | 0 | 0 | 0 | |
| Residence of patient | Rural | 0 | 3 | 18 | 0.23 |
| | Town | 0 | 5 | 5 | |
| | Urban | 1 | 25 | 43 | |
| Social class | Upper | 0 | 0 | 0 | 0.64 |
| | Middle | 0 | 8 | 11 | |
| | Lower | 1 | 26 | 54 | |
| No. of family member | | 4±0.0 | 5.42±2.35 | 5.80±2.43 | 0.49 |
| Age of caregiver | | 21±0.0 | 38.36±13.4 | 40.12±14.3 | 0.38 |
| Gender of caregiver | Male | 0 | 9 | 16 | 0.80 |
| | Female | 1 | 24 | 50 | |
| Caregiver's relation with patient | Father | 0 | 2 | 4 | 0.66 |
| | Mother | 0 | 10 | 16 | |
| | Husband | 0 | 3 | 9 | |
| | Wife | 1 | 11 | 14 | |
| | Brother | 0 | 1 | 3 | |
| | Sister | 0 | 3 | 2 | |
| | Son | 0 | 2 | 2 | |
| | Daughter | 0 | 0 | 8 | |
| | Other | 0 | 1 | 8 | |
| Living with patient since how many years | | 4±0.0 | 20.54±8.6 | 21.84±9.6 | 0.22 |
| Occupation of caregiver | Unemployed | 1 | 22 | 31 | 0.14 |
| | Laborer | 0 | 6 | 29 | |
| | Semiprofessional | 0 | 5 | 4 | |
| | Professional | 0 | 0 | 2 | |
| Marital status of caregiver | Unmarried | 0 | 7 | 15 | 0.67 |
| | Married | 1 | 25 | 51 | |
| | Divorced | 0 | 0 | 0 | |
| | Widow | 0 | 1 | 0 | |
| | Widower | 0 | 0 | 0 | |
| | Separated | 0 | 0 | 0 | |
| Education of caregiver | Illiterate | 0 | 5 | 14 | 0.62 |
| | Educated* | 1 | 28 | 52 | |

**Table 3: Comparison of Demographic Variables and other Factors Related to Perceived Criticism.**

| Demographic variables | | Perceived criticism | | | |
|---|---|---|---|---|---|
| | | Mild (n=0) | Moderate (n=92) | Severe (n=8) | p-value |
| Age of patient | | 0 | 36.13±13.1 | 35.50±11.4 | 0.92 |
| Gender of patient | Male | 0 | 62 | 1 | 0.002 |
| | Female | 0 | 30 | 7 | |
| Duration of illness | | 0 | 7.75±5.7 | 7.25±5.8 | 0.81 |
| Occupation of patient | Unemployed | 0 | 39 | 7 | 0.08 |
| | Laborer | 0 | 32 | 0 | |
| | Semiprofessional | 0 | 13 | 1 | |
| | Professional | 0 | 8 | 0 | |
| Marital status of patient | Unmarried | 0 | 39 | 3 | 0.73 |
| | Married | 0 | 43 | 5 | |
| | Divorced | 0 | 6 | 0 | |
| | Widow | 0 | 4 | 0 | |
| | Widower | 0 | 0 | 0 | |
| | Separated | 0 | 0 | 0 | |
| Education of patient | Illiterate | 0 | 14 | 1 | 0.28 |
| | Educated* | 0 | 72 | 7 | |
| Religion of patient | Hindu | 0 | 67 | 6 | 0.89 |
| | Muslim | 0 | 25 | 2 | |
| | other | 0 | 0 | 0 | |
| Residence of patient | Rural | 0 | 18 | 3 | 0.35 |

| | | | | | |
|---|---|---|---|---|---|
| | Town | 0 | 10 | 0 | |
| | Urban | 0 | 64 | 5 | |
| Social class | Upper | 0 | 0 | 0 | 0.15 |
| | Middle | 0 | 19 | 0 | |
| | Lower | 0 | 73 | 8 | |
| No. of family member | 5.67±2.4 | 5.50±1.9 | 0.01 | | |
| Gender of caregiver | Male | 0 | 71 | 4 | 0.08 |
| | Female | 0 | 21 | 4 | |
| Caregiver"s relation with patient | Father | 0 | 5 | 1 | 0.001 |
| | Mother | 0 | 26 | 0 | |
| | Husband | 0 | 11 | 1 | |
| | Wife | 0 | 26 | 0 | |
| | Brother | 0 | 4 | 0 | |
| | Sister | 0 | 3 | 2 | |
| | Son | 0 | 2 | 2 | |
| | Daughter | 0 | 6 | 2 | |
| | Other | 0 | 9 | 0 | |
| Living with patient science how many years | - | 21.39±9.7 | 19.50±2.8 | 0.39 | |
| Occupation of caregiver | Unemployed | 0 | 50 | 4 | 0.79 |
| | Laborer | 0 | 31 | 4 | |
| | Semiprofessional | 0 | 4 | 0 | |
| | Professional | 0 | 2 | 0 | |
| Marital status of caregiver | Unmarried | 0 | 16 | 6 | 0.0008 |
| | Married | 0 | 75 | 2 | |
| | Divorced | 0 | 0 | 0 | |
| | Widow | 0 | 1 | 0 | |
| | Widower | 0 | 0 | 0 | |
| | Separated | 0 | 0 | 0 | |
| Education of caregiver | Illiterate | 0 | 18 | 1 | 0.38 |
| | Educated* | 0 | 74 | 7 | |

**Table 4: Comparison of Demographic Variables and other Factors Related to Severity of OCD.**

| | | Y-BOCS | | |
|---|---|---|---|---|
| **Demographic variable** | | **<16 (n=22)** | **>16 (n=78)** | **p-value** |
| Age of patient | | 37.04±11.5 | 35.80±13.3 | 0.60 |
| Gender of patient | Male | 18 | 45 | 0.03 |
| | Female | 4 | 33 | |
| Total duration of illness | | 7.22±4.2 | 7.84±6.0 | 0.98 |
| Occupation of patient | Unemployed | 8 | 38 | 0.54 |
| | Laborer | 7 | 25 | |
| | Semi- professional | 5 | 9 | |
| | Professional | 2 | 6 | |
| Marital Status of patient | Married | 7 | 35 | 0.11 |
| | Unmarried | 15 | 33 | |
| | Divorced | 0 | 6 | |
| | Widow | 0 | 4 | |
| | Widower | 0 | 0 | |
| | Separated | 0 | 0 | |
| Education of patient | Illiterate | 2 | 13 | 0.24 |
| | Educated* | 55 | 20 | |
| Religion of | Hindu | 18 | 65 | 0.43 |
| | Muslim | 4 | 23 | |
| patient | Other | 0 | 0 | |
| Residence of patient | Rural | 6 | 15 | 0.52 |
| | Town | 3 | 7 | |
| | Urban | 13 | 56 | |
| Social class | Upper | 0 | 0 | 0.91 |
| | Middle | 4 | 15 | |
| | Lower | 18 | 63 | |
| No. of family members | | 4.45±1.4 | 6.00±2.5 | 0.01 |
| Age of caregiver | | 43.18±12.4 | 38.26±14.3 | 0.19 |
| Gender of caregiver | Male | 8 | 17 | 0.16 |
| | Female | 14 | 61 | |
| Caregiver's relationship with patient | Father | 2 | 4 | 0.005 |
| | Mother | 2 | 24 | |
| | Husband | 5 | 7 | |
| | Wife | 11 | 15 | |
| | Brother | 2 | 2 | |
| | Sister | 0 | 5 | |
| | Son | 0 | 4 | |
| | Daughter | 0 | 8 | |
| | Other | 0 | 9 | |
| Living with patient since how many years | | 20.9±11.6 | 21.33±8.7 | 0.89 |
| Occupation of caregiver | Unemployed | 11 | 43 | 0.81 |
| | Laborer | 9 | 26 | |
| | Semi- professional | 2 | 7 | |
| Marital status of caregiver | Professional | 0 | 2 | |
| | Unmarried | 0 | 22 | 0.14 |
| | Married | 22 | 55 | |
| | Divorced | 0 | 0 | |
| | Widow | 0 | 1 | |
| | Widower | 0 | 0 | |
| | Separated | 0 | 0 | |
| Education of caregiver | Illiterate | 8 | 11 | 0.02 |
| | Educated* | 14 | 77 | |

**Table 5: Association of Emotional Overinvolvement with Anxiety and Depression in Caregivers.**

| | Emotional overinvolvement | | | |
|---|---|---|---|---|
| **Variables** | **Mild (n=1)** | **Moderate (n=33)** | **Severe (n=66)** | **p-value** |
| Anxiety (Mean±SD) | 1±0.0 | 3.15±3.8 | 2.92±2.3 | 0.44 |
| Depression (Mean±SD) | - | 2.18±4.1 | 2.10±2.3 | 0.17 |

**Table 6: Association of Perceived Criticism with Anxiety and Depression in Caregivers.**

| | Perceived criticism | | | |
|---|---|---|---|---|
| **Variables** | **Mild (n=0)** | **Moderate (n=92)** | **Severe (n=8)** | **p-value** |
| Anxiety (Mean±SD) | - | 3.04±3.0 | 2.25±1.2 | 0.63 |
| Depression (Mean±SD) | - | 2.15±3.1 | 1.62±1.4 | 0.89 |

**Table 7: Association of Severity of OCD with Expressed Emotion, Anxiety and Depression in Caregivers.**

| | Y-BOCS | | |
|---|---|---|---|
| **Variables** | **<16 (n=22)** | **≥16 (n=78)** | **p-value** |
| EOI (Mean±SD) | 25.09±5.2 | 24.19±4.7 | 0.35 |
| PC (Mean±SD) | 18.95±2.7 | 19.06±2.6 | 0.64 |
| Anxiety (Mean±SD) | 2.40±2.0 | 3.14±3.1 | 0.51 |
| Depression (Mean±SD) | 1.31±1.6 | 2.33±3.3 | 0.18 |

We found that prevalence of mild emotional over involvement was 1% while that of moderate and severe were 33% and 66% respectively. Also in perceived criticism subscale no caregiver was in mild category. 92% were in moderate and 8% were in severe category. One of the previous studies shows that 82% of caregivers of OCD patients had high EE[30]. One of the reasons behind high EE is caregivers thinks that patient is able to control the symptoms and through criticism patient would recover from symptoms, but it leads to relapse of symptoms. These caregivers thinks that symptoms are not attributable to the psychiatric illness, but to the patient. One study in past shows that level of EE perceived by the patients is higher in patients with poor insight. So poor insight may be one of the reason for high EE in caregivers of OCD patients[31-32]. Our study had 90 patients out of 100 patients whose duration of illness was >1 year, which shows that majority of the patients are non remitters. One study in past shows that caregivers of non-remitters exhibit higher levels of EE[33].

Study in past shows that caregivers who thinks psychiatric symptoms as patient's own and controllable (controllable attributions) would be more critical towards patients. In contrast caregivers who have overly strong conviction that a patient is psychiatrically ill (illness attributions) may be more likely to be high in emotional overinvolvement[34-35]. Patients has high rate of treatment dropout when caregivers shows high EE. Worse response on target ratings seen when caregivers express high perceived criticism[36].

We found that frequency of anxiety and depressive disorder was 5% and 3% only in caregivers of OCD patients. So our study shows that significant proportion of caregivers doesn't develop anxiety and depression despite high levels of expressed emotion and Y-BOCS score in patients.

Previously one study shows that presence of hope in caregivers was negatively related to depressive symptoms. It also positively related to social support coping strategies and active reframing[3]. So hope and coping strategies in family members may be the reason for not seeing significant depression in them. Different coping strategies are spouses focus on resources of the patient, family members try to support patients in dealing with the illness, parents are often try to educate their ill children, Children seem to take a parent-role in interaction with the ill father or mother[4]. However other study in past shows that the diagnosis of major depressive disorder in relatives of OCD patients was significantly higher than control relatives which is inconsistent with finding of our study, but the diagnosis of any anxiety disorder did not differ among relatives of patients and control[25]. Another study shows that rates of major depressive disorder and anxiety disorders are higher among caregivers of OCD patients, which is also inconsistent with finding of our study[21]. We found that 22% of patients had Y-BOCS score <16, while 78% had Y-BOCS score of 16 or >16 which is cut off used in previous studies for lower and higher Y-BOCS score[29-37]. We observed that there was no association between anxiety and depression with expressed emotion in caregivers of OCD patients. We found that there was no association between severity of OCD with anxiety, depression and expressed emotion in caregivers, which is consistent with the previous studies[13-24-25] who found no significant association between EE and OCD severity. One study[25] shows that criticism lost its value when family started to accommodate patient's behavior. Another study[24] also indicate a positive correlation between accommodation from relatives and symptom severity. So, accommodation is directly proportional to OCD severity. Caregivers started to

accommodate patient's behavior in different ways like taking over patient duties, active participation in rituals and/or avoidance at patient"s request, modifying family activities and routines and providing reassurance[16-17].

Our study found that caregivers of educated patients show high level of emotional overinvolvement than illiterate patients. We also found that male patients were suffer more for moderate levels of perceived Criticism from their caregivers than female patients. We found that when there were a greater number of family members than there was moderate level of perceived criticism. We also observed that those OCD patients whose caregivers were mothers and wives were suffering more from moderate level perceived criticism. It is consistent with previous study which shows that 76% of mothers of 49 children with OCD symptoms exhibit high levels of EE[30].

We find out that those caregivers who were married were show moderate level of perceived criticism. We observed that female patients had high Y-BOCS score as compared to male patients which is inconsistent with previous study who shows male patients with OCD were characterized by an earlier age of onset and greater global severity[38]. Another study shows that there was absence of gender differences in severity of OCD. However male subjects have greater impairment in psychosocial functioning than female subjects. This is because of pathological features of cluster A Personality disorders, which is more frequently diagnosed in males[39]. We observed that if patient's family had a greater number of family members than patient had high Y-BOCS score. We found that if caregiver was mother than patient had high Y-BOCS score. Caregiver started to feel insecure when they see suffering of patient by OCD symptoms. Caregiver confuse about how to act and regarding setting limits for patient's safety seeking behaviours. These insecurity feelings develop ambivalent nature in caregiver regarding patient"s illness and leads to increase in OCD severity and aggravation of symptoms. Previous study shows that Insecurity feelings were more likely to occur among female caregivers[40].

We observed that if caregiver was educated than Patient had high Y-BOCS score.One of the reason is that educated caregivers gather information about OCD from different sources and learn that OCD is not under voluntarily control of patients. They learn that it is a psychological disorder and shows high level of emotional overinvolvement and accommodation behaviour. Accommodation behaviour of caregivers responsible for increase severity of OCD[24-25].

We studied association of anxiety and depression with expressed emotion in caregivers of patients having an OCD by an interview-based study, interviews had been taken by clinician for diagnosis of OCD by using 5th Edition of Diagnostic and Statistical Manual of Mental Disorders[6].

Anxiety and depression were assessed by Hospital anxiety and depression scale (HADS), Expressed emotion were assessed by Family emotional involvement and criticism scale (FEICS) and severity of OCD were assessed by Yale brown obsessive-compulsive scale (Y-BOCS).

**Our Study has Several Limitations:** Being a cross sectional study, cause-effect relationship can't be established with this study, small sample size and recruiting participants from single center i.e. Sir.T.Hospital, Bhavnagar.

## CONCLUSION

Frequency of anxiety and depression among Caregivers was 5% and 3% respectively. Caregivers of OCD patients had high level of expressed emotion. Frequency of mild, moderate and sever emotional overinvolvement was 1%, 33% and 66% respectively. Frequency of mild, moderate and severe perceived criticism was 0%, 92% and 8% respectively. Frequency of patients having Y-BOCS score <16 was 22% and score $\geq$16 was 78%. There was no association between anxiety and depression with expressed emotion seen in caregivers. There was no association between severity of OCD in patients with expressed emotion, anxiety and depression seen in caregivers. Further large sample sized and multi-centric cohort studies are recommended to have further insight in this subject.

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