Obsessive-compulsive disorder (OCD) is an anxiety disorder, characterized by the presence of obsessions (unwanted thoughts, images or impulses) and/or compulsions (repetitive behaviors). Substantial progress has been made in the last two decades in understanding the different aspects of the disorder that include its prevalence, clinical presentation, comorbidity, etiology, and treatment. This study explores the treatment aspects of OCD. Objective of the present study was to examine the effectiveness of three treatment combinations made by Fluoxetine; a Selective Serotonin Reuptake Inhibitor, Cognitive behaviour therapy, and Counseling of family member in treatment of Obsessive-Compulsive Disorder patients.

This thesis comprises four chapters; Introduction, Method, Result, and Discussion. Chapter I, Introduction presents the important information regarding the illness OCD. Obsession can be explained as a persistent ideas, thoughts, impulses or images that are experienced as intrusive and inappropriate. Individual suffering with OCD is able to recognize that the obsessions are the product of his or her mind. Therefore it usually leads to discomfort, anxiety and distress. To decrease this feeling obsession leads to an urge to engage in certain compulsive behavior and rituals. Compulsions are recurring behavior (example hand washing, ordering, checking) or mental act (example praying, counting, repeating words silently) whose goal is to prevent or decrease anxiety or distress and not to provide enjoyment or gratification. As these rituals help to reduce anxiety, hence, the tendency to perform them grows stronger and such kind of repetitive thought and recurrent behaviour is recognized as OCD.

The prevalence of obsessive-compulsive disorder among children and adolescents is found in the range of 1% to 3% (Flament et al., 1998; Valleni et al., 1994). According to the US National Comorbidity Survey Replication (NCS-R) about 20% of all affected persons in the USA suffer from manifestations of the disorder at the age of
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10yrs or even earlier (Kessler et al., 2005). In India, according to WHO (2000) ‘Age-std. incidence/100,000’ of OCD for male is 36 and female 74. ‘Age-std. prevalence/100,000’ of OCD is male 313 and female 475 (Ayuso-Mateos & Jose Luis, 2013).

The Diagnostic and statistical manual of mental disorders, Fourth Edition- Text Revision, (DSM-IV-TR) (2000), and International classification of diseases, Tenth Edition (ICD-10) (1993) have given criteria to diagnose OCD. According to the ICD-10, F42 Diagnostic guidelines, for a definite diagnosis of OCD obsessional symptoms or compulsive acts or both must be present on most days for at least two successive weeks and be a source of distress or interference with activities. The obsessional symptoms should have the following characteristics:

1) They must be recognized as the individual’s own thoughts or impulses;

2) There must be at least one thought or act that is still resisted unsuccessfully, even though others may be present which the sufferer no longer resists;

3) The thought of carrying out of the act must not in itself be pleasurable (Simple relief of tension or anxiety is not regarded as pleasure in this sense;

4) The thoughts, images or impulses must be unpleasantly repetitive.

Because of its high comorbidity with depression and other anxiety disorders, and the guarded nature of the patients, the disorder often gets misdiagnosed as depression and anxiety. Therefore, it is important to correctly diagnose and treat OCD. Few mental disorders as depression, schizophrenia, phobia, Eating disorder, Post-traumatic stress disorder, Gilles de la tourette syndrome, Body dysmorphic disorder, Brain damage and Obsessive-compulsive personality disorder also manifest few symptoms like OCD and may resembles. Therefore for differential diagnosis of OCD Comorbid and related conditions are important to consider.
Since its introduction in first version of DSM in 1952 Obsessive-compulsive disorder has been regarded as a unitary disorder, its clinical features are nevertheless, overtly heterogeneous. Currently either four or five primary dimensions found which seem to emerge in OCD. These are Symmetry and ordering, Hording, Contamination and cleaning, Aggressive and checking obsession, Sexual/religious obsessions. Study conducted in India found these symptoms in following percentage-

Obsessions of Fear of contamination 61%, Aggressive thoughts, images & impulses 43%, Need for symmetry 35%, Sexual 31%, Religion 30%, Pathological doubt 21% and Miscellaneous 40%. Compulsions of Cleaning & washing 50%, Ordering 41%, Repeating 38%, Checking 18%, Hoarding 7% and Miscellaneous 41% (Jaisoorya et al. 2003). Some major features of OCD found in the patients are avoidance, fear of disaster, resistance, reassurance seeking, disruption and Ruminations.

Several researches have been conducted to know the cause of OCD. While explaining the cause of OCD Cognitive model of OCD proposes that patient with this disorder evaluate intrusive thoughts in a unique way. Rather than being able to dismiss them, individuals with OCD appraise intrusive thoughts as highly important as well as threatening, and thus make efforts to control their occurrence. This is known as “Matacognitive strategy”: a mere act of appraising one's thoughts. Thought–action fusion, over importance of thoughts and need for control over thoughts are such typical dysfunctional assumptions or beliefs that give rise to obsessional anxiety. Briefly said, Cognitive behavioural viewpoints states that ‘it is not the intrusive thought itself that is the problem in OCD, but the problem fabricates in the way the thought is appraised’ (Salkovskis, 1985).

Significant progress has been made in understanding the pathophysiology of OCD although the exact cause of the disorder is still unknown. Most notable are the
neuroimaging studies that have implicated the frontal-basal ganglia thalamo-cortical circuit in the pathogenesis of the disorder. The role of two neurotransmitters “Serotonin” and “Dopamine” are found in developing symptoms and signs of OCD. Efficacy of the serotonin reuptake inhibitors in treatment of OCD have contributed to the popular serotonergic hypothesis of OCD.

There are several scale available for assessing the symptoms of obsessive-compulsive disorder, namely, rater administered scale and self administered scale. Among all of them Yale-Brown Obsessive Compulsive Scale (Y-BOCS) (Goodman et al., 1989) is the most widely used instrument for assessing OCD.

Despite the progress made in the understanding and treatment of OCD. Several studies have clearly demonstrated the efficacy of serotonin reuptake inhibitors in the treatment of OCD. SSRI acts by enhancing serotonergic neurotransmission through potent and selective inhibition of neuronal reuptake of serotonin in the brain, which reduced the symptoms of OCD.

Four selective serotonin-reuptake inhibitors (SSRI) Fluoxetine, Fluvoxamine, Sertraline, and Paroxetine, are currently approved by U.S. Food and Drug Administration (FDA) for the treatment of OCD in adults. Since its introduction in the market Fluoxetine (SSRI) has extensively been used in treating OCD. As mentioned above it acts by enhancing serotonergic neurotransmission through potent and selective inhibition of neuronal reuptake of serotonin. Early open trials suggested efficacy of Fluoxetine in OCD (Jenike et al.1989; Liebowitz MR et al. 1989). In the multicenter study, which led to FDA approval, three doses of Fluoxetine 20 mg per day, 40 mg per day, and 60 mg per day are approved (Tollefson et al, 1994). Some of the common CNS side effects of Fluoxetine are headache, nervousness, insomnia, drowsiness, anxiety, tremor and dizziness. Its gastrointestinal side effects are nausea,
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dry mouth and anorexia. Other side effects are excessive sweating, weight loss and very rarely suicidal ideation and violent behaviour. OCD patients are relatively resistant to the side effects of Fluoxetine.

Although pharmacotherapy is found very helpful in treatment of OCD, some OCD patient shows little therapeutic response to medications (Stein et al., 1997). It is also found that therapeutic effects obtained from drug treatment do not persist beyond the drug use (Cottraux et al., 1993). Therefore, Expert Consensus guideline recommended treatment with adjoining psychotherapy (March et al, 1997).

Several studies have demonstrated the efficacy of Exposure / Response prevention as a technique of behavior therapy and cognitive behavior therapy in OCD. Medical model of CBT hypothesis that OCD is a medical brain disorder associated with neurochemical and neuroanatomical dysfunction (Schwartz, 1998; Schwartz & Beyette, 1997) and therapy progress through Therapy proceeds through four steps: Relabel obsessions as symptoms of medical illness, Reattribute obsessions as false brain messages, reduce personal responsibility, encourage patient to act as an impartial spectator, Refocus on working around the illness and Revalue symptom vs. patient as a whole.

The classic model of CBT deals with correction of mistaken beliefs and cognitive distortions by cognitive restructuring (Salkovskis, 1998). In this model the main focus is on belief modification through actively challenging and confronting distorted thinking and belief that drives and maintains the obsession and compulsion. To achieve this goal Cognitive behaviour therapy is conducted as a part of a process of guided discovery. It involves the interweaving of discussion and behavioral experiment and helping the person to consider and evaluate an alternative view to their situation, sometimes referred to as theory A/ theory B. Discussion helps the
patient and therapist to achieve a better understanding of the trouble, considering related evidences of past and present, for the patient’s key beliefs and interpretations. Ultimate goal of this discussion is to plan behavioural experiments. Behavioural experiments help the patients by giving them a chance to disconfirm their feared consequences.

Several studies conducted to know the effect of OCD on patient’s family and found that OCD have a significant effect on the family members of the patient also, because OCD patient may insist others in the family to follow certain rules of behaviour, and to carry-out some compulsive rituals on his or her behalf. Family accommodation is the term used to indicate the process whereby family members of patients with obsessive-compulsive disorder (OCD) assist or participate in the patients’ rituals. Studies suggested that Psychoeducation regarding potential harmful effects of accommodation should be given to the family in management of this illness. Role of expressed emotion (EE) is also found correlated with symptom severity of OCD. Therefore need of involvement of family in treatment for OCD was identified. Yet very few studies are conducted to examined the role of family in treatment of OCD and found that involving family may affect the treatment out-come by changing family members attitude about patient’s illness and provide assistance to EX/RP at home (Piacentini et al. 2011).

As Y. C. Janardhan Reddy et al. (2010) concluded that Indian researches on different aspects of OCD has shown big similarities with researches from the other parts of the world and clinical profile of OCD seems to be alike as it is described in the literature. Comorbid patterns of OCD also appear to be similar across the cultures. Biological researches conducted on OCD in India have paralleled the interests in this area with other parts of the world. But, Limited amount of data from India on treatment aspects...
of OCD indicate towards the need to conduct the studies related to the treatment aspects of OCD. Therefore present study was designed to complete the following objective:

To assess the effectiveness of Fluoxetine in treatment of OCD, to assess that effectiveness of combination of Fluoxetine and CBT in treatment of OCD, to assess the effectiveness of combination of Fluoxetine, CBT and counseling significant of family member in treatment of OCD, and Comparison of effectiveness of above mentioned three ‘treatment combinations’ in treatment of OCD symptoms.

Chapter II Method explains the method and procedure followed to complete the study. As random assignment of treatment combinations to the patients was not possible for the study, Quasi- experimental designs was followed to complete the study. 45 Patients diagnosed with Obsessive Compulsive disorder were selected through the method of purposive sampling from the outpatient department of psychiatry unit of Jawaharlal Nehru Medical College and Hospital, Aligarh. Inclusion Criteria was Patients above the age of 14 year, Patients diagnosed with Obsessive-Compulsive Disorder according to ICD-10. Exclusion criteria were Patients with psychotic symptoms and serious physiological illness and Patients who were uninterested in participation in study.

The sample of OCD patients consisted- 28 male and 17 female. Age profile of sample was- 8 adolescent, 30 early adult and 7middle age. As far as educational profile was concerned- 3 were illiterate, 9 primary, 7 H.sc. 7 S.sc. 14 graduates, and 5 were post graduates. Marital status was unmarried 21, committed 5, and married 19. Socio economic status found as 8 poor and 37 from middle class.
According to their own interest to undergo in a specific treatment combination, these 45 patients were assigned to the three different groups MRC for the study. Group M, R, and C. Group M, was on medication. Patients of this group were treated with Fluoxetine. Group R patients were interested to undergo for CBT along with Fluoxetine for the treatment of their OCD symptoms. Group C was treated with combination of Fluoxetine, CBT and counseling of family member. All three groups MRC were assessed twice, i.e., pre intervention assessment and post intervention assessment. The duration between pre intervention assessment and post-intervention assessment was 12 weeks. Yale-Brown Obsessive compulsive scale was administered on all three groups to measure the severity of OCD symptoms.

Yale-Brown Obsessive Compulsive Scale (Y-BOCS) is developed by Goodman et al. (1989). In this study it is used to measure the symptom severity of OCD. This scale has a comprehensive checklist of OC symptoms and a severity scale. The Y-BOCS symptom checklist includes over 60 different types of obsessions and compulsions divided into 15 larger categories according to the behavioral expression. The Y-BOCS severity scale is a 10-item clinician-rating scale, each item rated from 0 (no symptoms) to 4 (extreme symptoms) for all items, a higher numerical score corresponds to greater illness severity. Severity of obsessive symptom is assessed through mentioned core items 1-5 i.e., Time spent on obsession in a day, Interference from obsessions, Distress of obsessions, Resistance to obsessions and Control over obsessions. Severity of compulsion symptom is assessed through mentioned core items 6-10 that is Time spent on compulsion in a day, Interference from compulsions, Distress from compulsions, and Resistance to compulsions and Control over compulsions. Study was conducted by Goodman et al. (1989) to examine the
psychometric properties of the core Y-BOCS 10 items. Study shows that the ‘10-item Y-BOCS’ is a reliable instrument for assessing the severity of obsessive-compulsive disorder symptoms in OCD patients.

Case history is recorded according to the scheme for case taking provided by NIMHANS, which is based on the analysis of available texts for history taking (Hamilton, H. 1974, Jaspers, K. 1963, and Strub, R.L. & Black, F.W. 1977).

Information about Obsessive-compulsive Disorder was provided to the patients and his caregivers, in the form of a booklet in familiar language. After giving the psychoeducation about OCD specific therapy combination were offered. These combinations were Fluoxetine only, Fluoxetine and Cognitive behaviour therapy only, and Fluoxetine, cognitive behaviour therapy and counseling of significant family members only. Duration of therapeutic program was 3 month, Total number of sessions was 12, and Duration of each session was 60 - 90 minutes. Dosage of medicine was tailored by the psychiatrists of JNMCH for each patient according to his symptoms. Fluoxetine 40 mg to 60 mg is given to the patients. In CBT ‘Exposure and response prevention’ and ‘relaxation response’ is used as an important behavioural technique.

Chapter III and IV are presenting result of the study and discussion of the findings of the study. Result contains the data analysis of the study. It covers quantitative as well as qualitative aspects of the study. Statistical package for social sciences (SPSS -20) was used for the analysis of quantitative data. Component analyses technique was employed in the qualitative analysis of the data. Homogeneity of socio-demographical variable age, sex, marital status, Socio-economic status and education is investigated by using Chi-square. Group MRC are found homogeneous on age, sex, Socio-economic status, and Education. Group was not homogenous on marital status. To
ascertain the pre-treatment homogeneity of OCD symptom severity, all three groups M, R and C are compared on pre-intervention assessment score of baseline measure ‘Yale –Brown obsessive compulsive scale’ using ANOVA and found homogeneous on OCD symptom severity at pre-intervention level.

Effectiveness of all three treatment combinations in reducing OCD symptom severity of group MRC is analyzed by using Paired $t$ test. To measure the effectiveness of Fluoxetine on group M Pre- post mean score of each item and total Y-BOCS score was analyzed by paired $t$ test. It was found that Fluoxetine significantly reduced the symptom severity of OCD.

To measure the effectiveness of Fluoxetine and CBT on symptom severity of OCD while pre-post mean score of each item as well as total Y-BOCS is analyzed by paired $t$ test, result indicated that combination of Fluoxetine and CBT significantly reduced the symptom severity of OCD. A similar result is found for combination of Fluoxetine, CBT and counseling of family members in reducing symptom severity of OCD. While these treatment combinations are compared by ‘Multiple analysis of variance’ it revealed that there are significant differences in pre-post intervention mean score of all treatment combinations.

To know whether all three treatment combinations have produced similar reduction in symptom severity of OCD, a separate analysis of variance (ANOVA) is calculated to know post treatment mean difference between the groups MRC. It revealed that there is significant difference between the post treatment mean scores of OCD patients treated by Fluoxetine only, patients treated with combination of Fluoxetine and Cognitive behavior therapy only and patients treated with combination of Fluoxetine, Cognitive behavior therapy and counseling of significant family member only.
Finding of this study indicates toward the effectiveness of pharmacotherapy, CBT and family counseling in treatment of OCD. This finding favors the hypothesis of involvement of serotonin Neurotransmitter in the Obsessive-Compulsive disorder and effectiveness of SSRI (Fluoxetine) in treating OCD symptoms. Furthermore this study found that individual with OCD holds a number of typical dysfunctional beliefs that give rise to their obsessional anxiety and treatment with CBT in conjunction with SSRI is beneficial in treating OCD. Treatment combination of SSRI, CBT and Counseling of family member which is designed to reduce family accommodation to OCD symptoms and training family in assisting EX/RP in natural setting is also found highly effective in treatment of OCD. Comparison of these three combination revealed that SSRI, CBT and family counseling is best Combination for treatment of OCD.

In this study profile of obsessive compulsive disorder is also scrutinized to know the symptom sub-types of OCD. Symptom percentage found in the sample is showing that occurrence of obsession of contamination is high in the sample which is followed by aggressive obsession religious obsession, symmetry obsession, somatic obsession and sexual obsession (Table24). Miscellaneous kind of obsessions was also reported in the sample. In compulsion symptoms ‘cleaning compulsion’ was found in majority of the patients, followed by ‘repeating compulsion’, ‘checking compulsion’, ‘ordering compulsion’, ‘counting compulsion’ and few miscellaneous kind of compulsions. Common cognitive distortions found in the patients are also scrutinized. Frequently asked questions by patients during therapy were also reported.