

# Obsessive-Compulsive Disorder: A General Overview

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## ABSTRACT

This article is an overview of obsessive-compulsive disorder (OCD). This review aims to discuss OCD through present and past research. The methods of this review will involve the reviewing of pertinent and credible literature based on the database of Google Scholar and APA PsycINFO. In the results and discussion sections, the etiology of obsessive-compulsive disorder from biological and environmental lenses. Also, the symptoms, impact on society and prognosis and treatment of OCD were discussed. Additionally, the comorbidity, prevalence, and gender differences regarding the disorder, with limitations and recommendations for future research were discussed.

**Keywords:** Mental illness, Obsessive-compulsive disorder, Obsessions, Compulsions, Anxiety, Repetitive behaviors

## 1. INTRODUCTION

Obsessive-compulsive disorder (OCD) is characterized by unwanted thoughts and ideas that drive people to complete tasks repetitively. Repetitive behaviors, such as cleaning and hand washing, can greatly interfere with individuals' daily lives. According to the Diagnostic and Statistical Manual of Mental Disorders 5 (DSM-5) [1], OCD is categorized as Obsessive-Compulsive and related disorders. The diagnostic criteria for OCD include the presence of obsessions, compulsions, or both that are time-consuming (more than one hour a day) or cause clinically significant distress in social, occupational, or other areas of functioning.

The two major symptoms of OCD are obsessions and compulsions. According to DSM-5, obsessions have two definitions: (1) Recurrent and persistent thoughts, urges, or images experienced during the disturbance are intrusive and cause marked anxiety or distress in most individuals. (2) The individual attempts to ignore or suppress such thoughts, urges, or images or neutralize them with thought or action. Similarly, compulsions are defined in two ways: (1) Repetitive behaviors or mental acts that the person feels driven to perform in response to an obsession. (2) The behaviors or mental acts aim to prevent or reduce distress or prevent some dreaded event or situation. Many obsessions and compulsions have been identified, such as "sexual, religious, somatic, and musical symptoms" but the most prevalent symptoms are "contamination concerns with consequent washing"

[2]. OCD was the "fourth most prevalent psychiatric disorder," characterized with "a lifetime prevalence of 2.5%" [3]. The gender difference in OCD is not significant, as "the male to female ratio OCD is the same" [2]. OCD has high comorbidity with other anxiety disorders. According to Hollander et al. [4], individuals suffering from OCD tend to display childhood conduct disorder symptoms alongside increased suicide attempts likely associated with an antisocial personality disorder.

Although obsessive-compulsive disorder has been heavily studied, there remain to be controversial areas regarding this disorder that have not been addressed. In terms of etiology, the primary controversy surrounding OCD is the number of genetic contributions to the disorder. Replication failures have prevented researchers from localizing specific genes contributing to OCD. While some believe that the serotonin receptor 5-HT serves a role in OCD, other receptors such as the glutamate receptor ionotropic-N-methyl-D-aspartate-subunit 2B, the GABA type B receptor, and the glutamate transporter SLC1A1 have been identified as a candidate gene [5]. As a result, no established genetic variants have been identified for OCD. In terms of concepts surrounding OCD, one controversy is whether or not OCD should be categorized as an anxiety disorder. The issue surrounding OCD's categorization began during the review of the DSM-5 psychiatric classifications, as professionals argued that the impulsivity nature of OCD, alongside phenotypical similarities (comorbidity, family loading, and age of onset), make it more on the spectrum of other disorders [5]. While this resulted in the change

in the categorization of OCD in DSM-5, the controversy remains.

In essence, this paper aims to educate the general public on the etiology, symptoms, treatments, and individual/social impact of obsessive-compulsive disorder so that individuals can recognize and assist those who are suffering from the disorder.

## 2. METHODOLOGY

This paper is a review of pertinent literature acquired through Google Scholar and APA PsycINFO. The field of studies used in this paper is an obsessive-compulsive disorder.

Rudimentary information regarding OCD was collected from the Diagnostic and Statistical Manual of Mental Disorders: 5th Edition. The major source for the etiology section is Controversies in pediatric obsessive-compulsive disorder by Lack [5]. In terms of the impact section, the primary source is Quality of life in obsessive-compulsive disorder: impact of the disorder and of treatment by Subramaniam et al. [6]. Lastly, the primary source for the prognosis and treatment section is Clinical treatment of obsessive-compulsive disorder by Pittenger et al. [7].

## 3. RESULTS AND DISCUSSION

### 3.1. Etiology

OCD is a “moderately heritable” disorder, “with approximately 40% of the phenotypic variance explained by genetic factors” [8]. Recent twin studies of OCD provided convincing information regarding genetic contributions to the disorder. The results of the studies showed that “monozygotic twins have the highest concordance rates between 80-87%” and “dizygotic twins” have concordance rates between “47-50%” [5]. OCD has a complex genetic architecture, with “multiple genetic variants of small effect size contributing to its etiology” [8]. This complex genetic structure has led to difficulties in the identification process of OCD’s genetic factors. As mentioned previously, various genes have been identified as candidates contributing to OCD’s etiology: serotonergic, catecholaminergic, glutamatergic, and neurotrophic genes. Among these candidates, it is believed that “the serotonin system likely facilitates the expression of symptoms in OCD,” as findings suggest that SSRIs are effective in treating OC symptoms [5].

Obsessive-compulsive symptoms (OCS) play an essential role in OCD’s etiology because genetics that contributes to these symptoms undoubtedly impact the brain structure and function that leads to the development of OCD. The primary pathway responsible for obsessive-compulsive behavior is the cortico-striatal-thalamic

circuit (CSTC), which links the following brain regions of the orbital frontal cortex, the caudate nucleus, and the thalamus [5]. This neural feedback loop facilitates repetitive thoughts and behaviors through “a series of dysfunctions within the circuits at both the cortical and subcortical levels” [5]. Additionally, the basal ganglia are also implicated to be responsible for OCS. The basal ganglia are a group of nuclei that connect the cerebral cortex, thalamus, and brainstem. According to Mercadante et al. [9], the basal ganglia of those suffering from OCD do not filter cortical impulses properly; thus, the excitatory impulses prohibit the individual from removing worries.

In terms of environmental factors that contribute to the etiology of OCD, one should consider various risk factors. Although not enough research has been done on environmental triggers for OCD, it is evident that several environmental risk factors interact with genes to cause OCD. The first environmental factor is “streptococcus infection” which is any type of infection caused by the spherical bacteria of streptococcus [10]. This type of infection varies in severity, from mild throat infections to pneumonia. According to Swedo (2002), streptococcal infections led to the onset of OCD symptoms in children because their abnormal response to the infection led to self-antibodies and inflammatory changes in the basal ganglia, an area associated with them with OCS (as mentioned previously). The second environmental factor contributing to OCD is “stressful and traumatic life events” [10]. In a study conducted to investigate the comorbidity of anxiety and mood disorders, researchers discovered a strong lifetime association between PTSD and OCD, suggesting the possibility that PTSD may contribute as a causal factor to OCD [11]. Furthermore, according to Gothelf et al. (2004), children with OCD had significantly more negative life events in the year before onset than normal children.

### 3.2. Impact

OCD’s intrusive and compulsive nature greatly compromises the daily functioning and well-being of those suffering from the disorder. These influences can therefore impact the lives of both the patients and their families. One of the major impacts of OCD is Quality of life (QoL), a multidimensional concept generally acknowledged as “the subjective satisfaction from life” [6]. Healthy QoL is imperative because “decreased QoL is often an important cause or consequence of psychopathology.” Additionally, healthy QoL correlates to excellent levels of “mental, physical, role, and social functioning”, all factors that contribute to healthy well-being [6].

Various studies have examined the QoL in individuals with OCD, and the overall consensus is that OCD has considerable negative effects on the QoL of individuals. In Masellis et al. [12], individuals diagnosed

with OCD completed measures of QoL, and results showed that obsession severity alongside comorbid depression significantly predicted poor QoL. Furthermore, Eisen et al. [13] assessed 197 OCD adults on their QoL and psychosocial functions. The results of this study indicated that “all aspects of QoL are affected in individuals with OCD and are associated with OCD severity and depression severity” [13].

OCD can also greatly impact patients' relationships and families. According to a recent survey by the Obsessive-Compulsive Foundation, “73% of OCD patients reported that the illness interfered with their family relationships”. Additionally, in another survey by the OC foundation, “85% of family members were bothered by their relatives' rituals” and “75% were disturbed by their relatives' self-involvement”. More importantly, according to a study at Brown University, “more than 50% of OCD families had scores in the ‘unhealthy’ range for communication, affective responsiveness, and general functioning” [14]. This impact on patients' families can negatively influence the patients' well-being. It can also affect the outcome of the disorder, as patients with dysfunctional family lives tend to respond less well to treatment [14].

### **3.3. Prognosis and Treatment**

The onset age of OCD varies from preschool to elderly years, “with two peaks occurring between 9-11 and 20-23”. The prognosis of OCD has two types of courses: “chronic and episodic”. A chronic course involves the “persistent presence of symptoms”. The severity of these symptoms “wax and wane” over time, and there are “incomplete remissions”. An episodic course, on the other hand, involves the presence of symptoms only during episodes. For the remaining time, symptoms remit “remit with or without treatment”. OCD also has two types of outcomes: “symptomatic and functional”. A symptomatic outcome is the most common type, and it involves reducing the severity of symptoms. This outcome, however, does not always translate to improved Quality of life, an aspect that comes with functional outcomes [15].

Treatment involves cognitive behavioral therapy (CBT) and medication [7]. There remains to be controversy surrounding the most effective combination of treatments for OCD. Although some clinicians believe that the combination of CBT and medication is more effective than just one treatment alone, there is a lack of literature that supports this combination.

Cognitive-behavioral therapy (CBT) is a type of psychological treatment that implements strategies to change the patients' thinking patterns. These strategies may include learning to recognize that one's thinking is creating problems and reevaluating them. The most effective behavioral strategy for OCD is Exposure and

response prevention therapy (ERP). ERP is carried out in a controlled environment where “anxiety and obsession-inducing stimuli are systematically presented”. The clinicians then prevent the patients from engaging in their compulsions [7].

In terms of pharmacotherapy, defined as treating a disorder with medication, Selective Serotonin Reuptake Inhibitor (SSRI) antidepressants are efficacious in treating obsessive-compulsive symptoms. SSRI antidepressants work by increasing serotonin levels within the patients' brain, thereby improving the patients' obsessive-compulsive symptoms. Another widely used medication is clomipramine, a tricyclic antidepressant that also works by increasing levels of serotonin. The use of these antidepressants, however, differs from depression and other anxiety disorder treatments. For OCD patients, “higher doses of SRI medications are required before clinical improvement is seen”. Additionally, “improvement in OCD tends to be gradual” with “an adequate medication trial considered to be at least 10 to 12 weeks in duration” [7].

## **4. FUTURE DIRECTIONS**

Although recent studies have been instrumental in advancing our knowledge regarding etiology and treatment for OCD, researchers can improve several aspects of these studies in the future. To start, the samples used in the majority of the OCD studies are not representative of the population. An ideal representative sample is similar to the population, and this similarity involves characteristics such as gender, culture, and socioeconomic status. Having a representative sample is therefore imperative as it increases the study's external validity, which is the extent to which the results of the study can be generalized to other situations. The majority of the literature referenced in this paper conducted studies on adult participants from the United States. To start, the age of the participants is not representative of the general population of OCD patients, as the onset age of OCD is generally in adolescence and early adulthood [7]. Additionally, these American participants are not representative of OCD patients from other countries. The U.S.A. is a first-world country with a robust economy; its citizens are generally in healthy socioeconomic status and can obtain healthcare. These conditions do not reflect those OCD patients in countries worldwide, making these samples not representative. Future research could improve the sample's representativeness by adopting longitudinal designs that can identify developmental trends and avoid age representative issues. Additionally, more research needs to be conducted in different areas of the world. This may entail studying OCD patients in third-world countries or studying OCD patients with poor socioeconomic status. These recommendations could address the limitations of present studies and provide a

clear direction for further knowledge and development in OCD.

## 5. CONCLUSION

In conclusion, the primary elements that contribute to the etiology of OCD are biological and environmental factors. In terms of biological factors, although more research is needed to finalize the genetic contributions to OCD, serotonergic, catecholaminergic, glutamatergic, and neurotrophic genes are suggested to be candidates of OCD's genetic makeup. The cortico-striatal-thalamic circuit (CSTC) alongside the basal ganglia have been shown to facilitate repetitive thoughts and impulses, therefore contributing to OCD's complex genetic architecture. In terms of environmental factors, streptococcus infections and traumatic life events are causal factors to the onset of obsessive-compulsive symptoms. OCD harms the lives of patients and their families. Obsessive-compulsive symptoms can greatly worsen the patients' Quality of life; furthermore, these symptoms can jeopardize familial connections and relationships. Patients must, therefore, seek effective treatment to avoid these negative impacts. Cognitive-behavioral therapy (CBT) and proper medication (SSRI antidepressants) are effective in treating OCD.

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