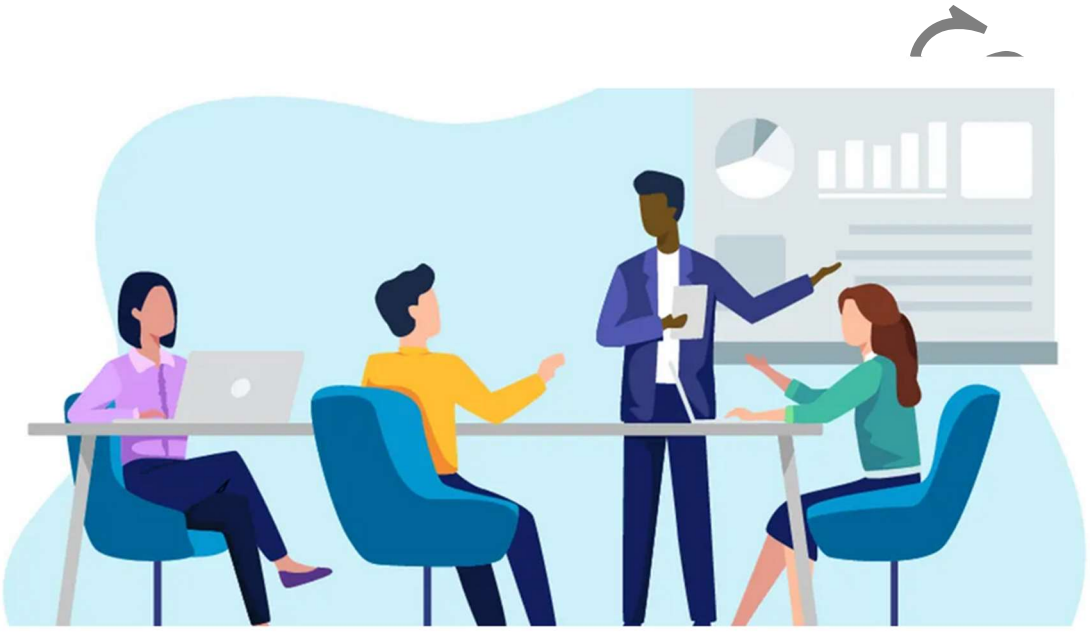
# [This is a rough draft of the thesis. Please note that this is a sample]

# CONTENTS



# INTRODUCTION

# INTRODUCTION

Schizophrenia often occurs alongside various other psychiatric disorders, which intensifies its severity and creates further challenges in treatment. Studies have reported that approximately 12% of patients with schizophrenia experience obsessive-compulsive symptoms (OCS), while around 30% are diagnosed with obsessive-compulsive disorder (OCD). Numerous recent research have examined the influence of OCD on the clinical characteristics of schizophrenia, with results that are not entirely conclusive.[1] In addition to causing significant clinical impairment and poor social functioning, OCD in schizophrenia has been shown to potentially worsen cognitive deficits. However, attempts to differentiate schizophrenia patients with and without co-occurring OCD regarding cognitive deficits have yielded conflicting results.

Studies have compared schizophrenia patients with co-morbid OCS or co-morbid OCD[7] to those without these co-morbid conditions. Generally, evidence suggests that patients with co-morbid OCS or OCD exhibit greater deficits in executive functioning, cognitive flexibility, and visual memory.[8] In addition, certain research have discovered a connection between the intensity of OCD symptoms and an increased occurrence of delayed visual memory impairments, abnormalities in executive functioning, and less cognitive flexibility. However, certain studies have yielded inconclusive results on the disparity between patients with and without OCS/OCD. Conversely, other studies propose that the existence of OCD may be linked to enhanced performance in certain cognitive areas.[10] The variations in the findings of these research can be ascribed to the diversity within the clinical samples, the specific neuropsychological tests employed for evaluation, and the limited size of the samples. Therefore, it is necessary to further assess this domain. Currently, the connection between OCS/OCD and schizophrenia is

comprehended in various manners. OCD in schizophrenia is recognized to have four distinct associations with symptoms of schizophrenia. These include OCS/OCD happening during the prodromal phase of schizophrenia, OCS/OCD happening simultaneously with symptoms of schizophrenia, OCS/OCD happening during the residual phase of schizophrenia, and OCS/OCD that is associated with antipsychotic medication or newly developed OCD.

However, previous studies assessing neurocognition have not attempted to distinguish between individuals with comorbid obsessive-compulsive disorder (OCD) who have OCD as a component of schizophrenia and those who have developed OCD as a result of taking antipsychotic medicines.

We determined that there would be no differences between patients with comorbid OCD and those with schizophrenia on the different neurocognitive domains due to the contradictions in the literature, supporting the null hypothesis. Furthermore, it was predicted that patients with OCD as a result of their illness and OCD brought on by antipsychotic drugs would not significantly differ in their neurocognitive abilities. In light of this, the current study sought to examine the neurocognitive abilities of schizophrenia patients with and without co-morbid OCD. An assessment of the connection between neurocognitive processes and OCD severity was conducted. Furthermore, a comparison of the neurocognitive profiles of patients with antipsychotic-induced OCD and concomitant OCD was attempted.

Although schizophrenia and obsessive-compulsive disorder (OCD) are separate conditions, OCD often occurs alongside schizophrenia in many patients. Previous studies have found that between 10% and 64% of people with schizophrenia have obsessive-compulsive symptoms (OCS), and between 5% and 50% have OCD.[11] Various hypotheses have been put out for the high occurrence of comorbidity, but the etiology of OCD comorbidity in

schizophrenia remains incompletely understood. Many research publications have used the term "schizo-obsessive disorder" to describe the many clinical aspects of OCD patients with schizophrenia. Although the rate of OCD in schizophrenia patients is higher than in the general population (1%–2%), it is still uncertain whether OCD comorbidity represents a distinct subgroup within schizophrenia.[12]

Previous research on the relationship between OCD and schizophrenia has shown mixed results, ranging from minor to severe positive and negative symptoms to improved or poorer functioning.[16-18] According to certain research, having an OCD diagnosis when dealing with schizophrenia is linked to a worsening of social impairment, a poorer clinical outcome, and more psychotic symptoms.[19-21] But certain researches failed to discover any variations in these parameters concerning OCD comorbidity.[16,22] While some research revealed a favorable correlation between severe OCD symptoms and negative symptoms of schizophrenia, others identified more severe negative symptoms in patients with OCD comorbidity.[23]

Many studies have found that patients with OCD have lower functionality, but some studies have shown no difference in functionality between those with and without OCD.[25,26] Unlike many studies, some research, like the studies by Tonna et al., found that having OCD might actually improve social functioning. They suggested that people with mild OCD, after accounting for the effects of psychotic symptoms, might function better socially.[27,28] The results of studies on OCD comorbidity in schizophrenia patients vary widely. These differences are due to varying methods, different scales used, and the characteristics of the patients in each study.

Some patients with schizophrenia show OCD symptoms before their first psychotic episode or at the same time as their initial psychotic symptoms.

# AIMS & OBJECTIVES

# AIM AND OBJECTIVES

## AIM

- To examine the clinical characteristics of Obsessive-Compulsive Disorder in individuals with Schizophrenia.

## OBJECTIVES

- To compare the Positive and negative symptoms in patients of schizophrenia with and without OCS
- To compare cognitive functioning among patients with schizophrenia with and without OCS

# REVIEW OF LITERATURE

# REVIEW OF LITERATURE

## History of schizophrenia

The term "schizophrenia" was first used by Swiss psychiatrist Eugen Bleuler in 1908. He created the term to describe the separation between different mental functions like personality, thinking, memory, and perception. Bleuler introduced the term on April 24, 1908, during a lecture at a psychiatric conference in Berlin and also published it that same year. Later, in 1911, Bleuler developed his novel illness notion into a monograph, which was eventually translated into English in 1950.

Some scholars believe that schizophrenia has always existed but was only identified and named in the early 20th century. Whether this claim is true depends on how well earlier cases of mental illness can be retrospectively diagnosed as schizophrenia. Others argue that schizophrenia is a culturally defined grouping of mental symptoms. What is certain is that by the early 20th century, the old concept of insanity had been divided into specific disorders, or psychoses, such as paranoia, dementia praecox, manic-depressive illness, and epilepsy, according to Emil Kraepelin's classification.[35] Dementia praecox was renamed schizophrenia, paranoia became known as delusional disorder, and manic-depressive illness was changed to bipolar disorder (epilepsy was moved from psychiatry to neurology). The mental symptoms grouped under schizophrenia are real, affect people, and will always need to be understood and treated. However, there is ongoing debate about whether the label "schizophrenia" is necessary to achieve effective treatment.

## Diagnoses in ancient times

Before the 19th century, records of conditions similar to schizophrenia are considered rare, although there were many reports of irrational, confusing, or uncontrolled behavior.[38] Although other reviews have not found a connection, there has been an opinion that some brief notes in the Ancient Egyptian Ebers papyrus may indicate schizophrenia.[40] A review of ancient Greek and Roman literature found descriptions of psychosis, but there were no accounts of a condition that met the criteria for schizophrenia.[41]

In Middle Eastern medical and psychological literature from the Middle Ages, there were reports of unusual psychotic beliefs and behaviors similar to those seen in schizophrenia. For instance, Avicenna's "The Canon of Medicine" described a condition similar to schizophrenia, which he called Junun Mufrit (severe madness). He distinguished this from other types of madness, such as mania, rabies, and manic-depressive psychosis.[42] However, Şerafeddin Sabuncuoğlu's "Imperial Surgery," a major Ottoman medical textbook from the 15th century, does not report any condition similar to schizophrenia.[43] There has been speculation that Joan of Arc's visions resulted from schizophrenia.[44] With such little historical data, schizophrenia (as common as it is now) might be a new occurrence, or it might have been misrepresented in ancient accounts as mania or melancholia.[38]

## First-rank symptoms

In the early 20th century, psychiatrist Kurt Schneider identified specific symptoms he believed set schizophrenia apart from other psychotic disorders. He called these "first-rank symptoms." They include feeling controlled by an outside force, believing that thoughts are being put into or taken out of one's mind, thinking that one's thoughts are being broadcast to others, and hearing

voices that comment on one's thoughts or actions or talk to each other.[45] Although first-rank symptoms have greatly influenced current diagnostic criteria, their uniqueness has been questioned. A review of diagnostic studies from 1970 to 2005 found that these symptoms neither confirm nor disprove Schneider's claims. The review suggested that first-rank symptoms should be given less importance in future updates to diagnostic systems.

**Development of treatments in the 20th century**

In the 1920s, Harry Stack Sullivan used Interpersonal psychotherapy to treat schizophrenia. He saw early schizophrenia as an effort to solve problems and integrate life experiences. Sullivan believed that patients who recovered from a psychotic episode became more competent than they had been before the episode.[48]

In the early 1930s, insulin coma therapy was tried as a treatment for schizophrenia.[51] However, its use declined in the 1960s with the introduction of antipsychotic medications. By 1938, electroconvulsive therapy (ECT), which uses electricity to induce seizures, had been developed and was being used as a treatment.[52]

Frontal lobotomies, a type of brain surgery, were performed from the 1930s to the 1970s in the United States and until the 1980s in France. This surgery involved either removing brain tissue from different areas or cutting brain pathways.[53] It is now seen as a serious violation of human rights.[53,54] Stereotactic surgery evolved in the 1940s.[52]

Antipsychotic drugs started being used in US hospitals in the 1950s after chlorpromazine was discovered in 1952 and tested in French hospitals. The Smith, Kline & French company promoted the drug, which was marketed as Thorazine, after getting approval to advertise it in 1954. Within eight months,

over 2 million people had taken the drug. In the first US report on chlorpromazine, John Vernon Kinross-Wright suggested that it could be used alongside psychotherapy to make the therapy more effective.

By the 1960s, advertisements began to claim that antipsychotics targeted the root causes of psychosis, using terms like "psychocorrective." A 1973 textbook, "The Companion to Psychiatric Studies," stated that antipsychotics had a specific therapeutic effect on schizophrenia and that calling them "tranquilizers" was incorrect. The book used the term "anti-schizophrenic" and discussed the dopamine hypothesis. By 1975, advertisements claimed that these drugs worked against psychosis by acting on dopamine receptors.[55]

## Criticism of mainstream psychiatry

### Anti-psychiatry

Anti-psychiatry is a collection of ideas and thinkers that question the medical view of schizophrenia. This perspective focuses on the social context of mental illness and sees the diagnosis of schizophrenia as labeling deviant behavior. Some psychiatrists within their own field have also questioned the traditional understanding of schizophrenia. Key figures in this movement include R. D. Laing and David Cooper. Philosophers like Michel Foucault, Jacques Lacan, Gilles Deleuze, Thomas Szasz, and Félix Guattari also criticized psychiatry.

Anti-psychiatrists agree that 'schizophrenia' indicates a problem and that many people struggle to live in modern society. However, they reject the idea that schizophrenia is a disease and that those who have it are ill. Instead, they suggest that people with schizophrenia seem crazy because they are intelligent and sensitive individuals facing a crazy world. While a sane patient can choose to ignore medical advice, an insane patient typically cannot. Anti-psychiatry

often views the institutional world as pathological and insane because it prioritizes bureaucracy, protocol, and labels over human beings.[50]

### R. D. Laing

In his 1960 book, "The Divided Self," R. D. Laing suggested a psychodynamic model of schizophrenia based on the idea of ontological security. He proposed that schizophrenia is the mind's way of trying to escape from the world's experiences. Laing argued that understanding and connecting with others can feel like an attack or overwhelming, even though it's also desired. He believed that in this state, the self can become angry, hateful, and divided. The unusual metaphoric language in schizophrenia is both an attempt to avoid being understood and a way to be partially understood or to test others in conversation. Laing supported his ideas with quotes from people diagnosed with schizophrenia and stated that truly understanding the self can resolve schizophrenia.[58]

### Controversies over validity in the 1970s

In 1970, psychiatrists Robins and Guze came up with new criteria for evaluating whether a diagnosis was valid. They suggested that cases of schizophrenia where people recovered well might not actually be schizophrenia but a different condition.

In the early 1970s, there were many debates about how to diagnose schizophrenia, which eventually led to the criteria we use today. The 1971 US-UK Diagnostic Study showed that schizophrenia was diagnosed much more often in the United States than in Europe.[61] This difference was partly because the US used the DSM-II manual with looser diagnostic criteria, while Europe used the ICD-9. David Rosenhan’s 1972 study, published in the journal

**Science** as "On Being Sane in Insane Places," found that diagnosing schizophrenia in the US was often subjective and unreliable.[62]

### DSM-III (1980) and DSM-IV (1994)

The debates in the 1970s not only changed how schizophrenia was diagnosed but also led to a complete update of the DSM manual, which resulted in the publication of the DSM-III in 1980.[63] The update was based on the Feighner Criteria and Research Diagnostic Criteria, which were developed from Robins's and Guze's criteria, and aimed to make diagnoses more consistent. Since the 1970s, over 40 different diagnostic criteria for schizophrenia have been suggested and reviewed.[64]

The DSM-IV, published in 1994, placed more emphasis on an evidence-based medical model. It slightly changed the diagnostic criteria for schizophrenia to require one month of positive symptoms instead of just one week.[65]

### 21st century

In 2002, Japan changed the name to "integration disorder," and in 2012, South Korea changed it to "attunement disorder."[66-68]

Subtypes of schizophrenia are no longer recognized as separate conditions from schizophrenia by DSM-5[69] or ICD-11.[70] Before 2013, the subtypes of schizophrenia were classified as paranoid, disorganized, catatonic, undifferentiated, and residual type.[71] The subtypes of schizophrenia were removed because there was not a clear difference between them and the classification was not very reliable.[70,72]

**The history of Obsessive-Compulsive Disorder (OCD)[73]**

Obsessive-Compulsive Disorder (OCD), previously known as Obsessive Compulsive Neurosis, is a fairly common condition. It has been found throughout history, across different cultures, and among various social groups, without being limited to any particular type of person. In fact, many historical figures have shown symptoms of OCD.

People with issues related to obsessions and compulsions (now known as OCD) have likely existed for as long as humans have. There are early historical accounts of OCD, with some detailed cases from the 14th century that we will discuss below.

The term OCD wasn't used until the 20th century, but before that, symptoms we now recognize as Obsessive-Compulsive Disorder were often referred to as scrupulosity.

Earlier descriptions of OCD are mostly found in religious rather than medical texts. From the 14th to the 18th century, fears related to religion were common, and the term "scrupulosity" was used for these obsessions and compulsions. By the 17th century, such symptoms were also referred to as part of "melancholy."

**REVIEW**

**Tibbo P et al (2000)**: In conclusion, using standardized diagnostic criteria and rating scales allows for the diagnosis of OCD in people with schizophrenia. Those with both conditions seem different from those with schizophrenia alone based on several clinical factors. People with both disorders often show higher levels of functioning but may also have more movement issues. [75]

**Kim M.-S et al (2003):** In conclusion, schizophrenia and OCD patients demonstrated lower P300 amplitudes and poorer neuropsychological performance than controls. In schizophrenia patients, P300 amplitude was associated with verbal memory and learning, but in OCD patients, it was associated with regulated attention or the ability to change attention. The current findings show that P300 anomalies reported in schizophrenia and OCD patients may reflect temporal and frontal lobe dysfunction, respectively.[76]

**Kayahan b et al (2005):** Nevertheless, we may conclude that OCS coexistence is a rather common observation in schizophrenia. We discovered that the prevalence of OCS/OCD in schizophrenia patients was comparable to those identified in prior research. Clinicians should be aware of the potential co-occurrence of schizophrenia and OCD. The identification of this unique subtype of schizophrenia has crucial implications for the implementation of effective therapeutic interventions.[79]

**Sevincok L et al (2006):** In conclusion, the relatively lower incidence of compulsive symptoms in OCD-schizophrenics, the lack of a significant difference in most domains of NES between OCD-schizophrenics and OCD patients, and the discovery that OC symptoms in patients with schizophrenia are not associated with NSS may not imply that the comorbidity of OC symptoms in schizophrenic patients represents a more severe form of OCD-spectrum disorder. The lack of association between OC symptoms and positive and negative symptoms of schizophrenia may indicate that a subset of OCD schizophrenia exists outside from the known core symptoms of schizophrenia, increasing the possibility of a unique subtype of schizophrenia. More study is needed in schizophrenic patients with OCD to investigate the links between NSS and either the OC symptomatology, neuroimaging, or neuropsychological findings, constituting a subgroup within the schizophrenia or OCD spectrum.[80]

**Rajkumar R. P et al (2008):** In conclusion, our study supports the idea that schizo-obsessive schizophrenia could be a distinct subtype with its own unique features, highlighting the need for more research. It also suggests that comorbid OCD might not necessarily worsen schizophrenia, contrary to previous beliefs.[81]

**Francois Guillem et al (2009):** In conclusion, this type of study is valuable as it provides a different perspective on understanding schizophrenia, helping to reveal the underlying mechanisms behind symptoms. For example, we found specific links between schizophrenia symptoms and obsessive-compulsive symptoms (OCSs), such as delusions and obsessions both involving over-valued ideas, or hallucinations and compulsions both related to disinhibition. This suggests that OCSs might be a core part of schizophrenia rather than just a separate issue. More research is needed to confirm these findings and check their consistency over time. It's also important to explore how factors like insight, anxiety, and depression might affect the severity of OCSs in schizophrenia. [85]

# MATERIALS & METHODS

## MATERIALS AND METHODS

**SUBJECTS:** 200 Patients of schizophrenia who did not have an OCD diagnosis for a lifetime and 100 Patients of schizophrenia with an existing OCD comorbidity.

**DURATION:** 2 year

**STUDY DESIGN:** COMPARATIVE STUDY, CROSS SECTIONAL

### INCLUSION CRITERIA

- Patients attending outpatient and inpatient in department of psychiatry with diagnosis of schizophrenia who did not have an OCD diagnosis for a lifetime was included in one group.
- Patients attending outpatient and inpatient in department of psychiatry with diagnosis of schizophrenia an existing OCD comorbidity was included in another group.
- Men and women above 18 years of age

### EXCLUSION CRITERIA

- Patients with intellectual disabilities
- Patients with hearing and visual disabilities
- Patients of substance abuse
- Patients aged more than 60
- Patients of dementia

## DATA COLLECTION AND METHODS

Patients attending outpatient and inpatient department of psychiatry with symptoms of Psychosis was assessed and details history of illness will be taken and diagnosis of Schizophrenia and OCD was made according to ICD-10 and DSM-5 and informed consent was taken from all participants.

### ICD-10

The International Classification of Diseases, 10th Revision (ICD-10) is a system created by the World Health Organization (WHO) to help doctors and healthcare workers diagnose and code diseases and health conditions. It provides a standardized way to document and organize a wide range of medical issues, from infections to chronic illnesses. ICD-10 has two main parts: ICD-10-CM for diagnostic coding in the United States, and ICD-10-PCS for coding medical procedures. With over 14,000 different codes, it allows for precise and detailed record-keeping of diagnoses. ICD-10 helps maintain consistency in healthcare reporting, supports statistical analysis, and improves communication across different healthcare settings. It is used globally for clinical, research, and administrative purposes. Although it is complex and challenging to switch from older systems, ICD-10 is essential for healthcare documentation and global health statistics.

### DSM-5

The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), was created by the American Psychiatric Association (APA) to help diagnose and classify mental health disorders. Published in 2013, it provides standardized guidelines for assessing many mental health conditions like mood disorders, anxiety disorders, psychotic disorders, and personality disorders. The DSM-5 includes detailed descriptions of each disorder, covering

symptoms, diagnostic criteria, and related features. It also adds new diagnoses and updates some existing ones based on recent research and clinical practices. Mental health professionals use the DSM-5 widely for diagnosing, planning treatments, and conducting research. While praised for its comprehensive and current guidelines, it has faced criticism for its categorical approach and the potential for over-diagnosis. Despite this, the DSM-5 remains an essential tool for mental health diagnosis and treatment in clinical and research settings.

The patients were then given several evaluation scales and tests to determine how the two groups' cognitive and functional domains compared and differed. These Scales and tests were used:

**1. Brief psychiatry rating scale (BPRS)**

A lot of psychiatric tests use the Brief Psychiatric Rating Scale (BPRS) to rate symptoms like sadness, anxiety, hallucinations, and strange behavior. John Overall and Donald Gorham made the BPRS in the 1960s. It has 18 to 24 items, and each one is rated on a range from 0 (not present) to 7 (extremely severe). In clinical situations, this tool is especially useful for figuring out how well a treatment is working, keeping track of how symptoms change over time, and doing psychiatric research. When trained therapists use a structured interview method to give the BPRS, it makes sure that measurements of psychiatric conditions are accurate and consistent. It is an important tool for evaluating people with a wide range of mental health problems because it covers so much.

**2. Clinical global impression severity scale (CGI-S)**

In psychiatric evaluations, the Clinical Global Impression-Severity (CGI-S) measure is often used to find out how bad a patient's mental

illness is. The CGI-S was made by the National Institute of Mental Health. It is a simple, one-item test that rates a patient's state from 1 (normal) to 7 (incredibly sick). Clinicians can quickly figure out how bad a condition is with this tool because it is simple and easy to use. The CGI-S is often used in both clinical practice and study to track patients' progress, look at how well treatments are working, and see how different interventions compare in terms of how well they work. Its clear and consistent approach makes it easier for healthcare providers to talk to each other and makes sure that there is a standard way to judge the severity of mental health problems in all places.

### 3. Calgary depression scale for schizophrenia (CDSS)

The Calgary sadness Scale for Schizophrenia (CDSS) is a special tool that was created in the early 1990s to measure sadness in people who have schizophrenia. It talks about how depressed symptoms show up differently in this group of people, which can make them hard to tell apart from other schizophrenia symptoms. The CDSS has nine items, each scored on a scale from 0 to 3, that measure mood, hopelessness, self-deprecation, and suicidal thoughts. The CDSS is used a lot in both clinical and research situations because it is known to be reliable and valid. Its focused method helps doctors accurately find and measure depressive symptoms, which is important for planning effective treatment. The CDSS improves the overall care of people with this dual diagnosis by separating depressive symptoms from other problems linked to schizophrenia.

## 4. Yale-brown obsessive compulsive scale (YBOCS)

The Yale-Brown Obsessive-Compulsive Scale (Y-BOCS) is a well-known and respected way to measure the intensity and types of symptoms in people who have obsessive-compulsive disorder (OCD). The Y-BOCS was created by Dr. Wayne Goodman and his team in the late 1980s. It has a 10-item scale that measures the severity of both obsessive and compulsive symptoms individually. Each item is given a score between 0 (no symptoms) and 4 (extreme symptoms), which gives a full picture of how bad OCD is. The scale also has a list of symptoms that can help you figure out exactly what cravings and compulsions a person is experiencing. The Y-BOCS is useful in both clinical practice and study because it is known to be reliable, valid, and sensitive to changes in treatment. It helps doctors make more effective treatment plans and keep track of their patients' progress, which makes managing OCD better.

## 5. Global assessment of functioning scale (GAFS)

People often use the Global Assessment of Functioning (GAF) Scale to find out how well they are doing in their general psychological, social, and occupational functioning. The GAF gives a single number from 0 to 100 and is in both the DSM-IV and the DSM-5. Higher scores mean better functioning, with 91–100 indicating exceptional functioning across a range of areas. A score between 1 and 10 shows a persistent risk of seriously hurting oneself or others. The GAF measure helps doctors decide what kind of treatment to give, keep track of progress, and guess what will happen. People have said it is biased and does not give enough details, even though it is useful. Because of this, the World Health Organization Disability Assessment Schedule (WHODAS) was added as

an option in the DSM-5. Still, the GAF is still useful in many clinical situations because it is easy to use and can be used in many situations.

### 6. Positive and negative syndrome scale (PANSS)

A popular way to check for schizophrenia symptoms is with the Positive and Negative Syndrome Scale (PANSS). It was made in the 1980s and looks at both good and bad signs, like hallucinations and delusions. The PANSS has 30 items, and each one is scored on a 7-point scale that goes from 1 (not present) to 7 (extreme). There are three parts to it: general psychopathology, positive signs, and negative symptoms. This tool helps doctors figure out how bad a patient's symptoms are, decide what kind of treatment to use, and keep track of changes over time. The PANSS is praised for being thorough and giving a full assessment of symptoms, but it has also been criticized for being hard to understand and open to different interpretations. Even with these problems, it is still an important tool for studying and treating schizophrenia in both clinical settings and studies.

### 7. Trail making test (TMT)

The Trail Making Test is a neuropsychological test that checks cognitive processes like executive skills, attention, and visual-motor coordination. Part A and Part B are the two parts that make it up. Part A has people quickly connect numbered circles in order. This tests how fast they can scan and understand visual information. Part B tests cognitive flexibility and the ability to switch tasks by having people switch between numbers and letters (for example, 1-A-2-B-3-C). The time it takes to finish each part is often used to measure performance. In hospitals and clinics, this test is often used to find memory problems linked to dementia, brain

injuries, and other neurological conditions. People like how easy it is to use and how well it finds problems with brain function.

**Statistical Analysis:**

All the data were analyzed using SPSS package (Stata, version 26.0 SPSS INC, Chicago, IL, USA) for windows. The data were presented as descriptive statistics for continuous variables and percentage for categorical variables and was subjected Chi-square test, t test &Anova test. Other values were represented in number, proportions (%) and mean ± SD.

**Statistical formulae used were as follows:**

1. Mean: -

   The operation of adding together or summation is denoted by the sign Σ. The individual observation is denoted by the sign X, number of observation denoted by n, and the mean by $\bar{x}$.

$$X^2 = \frac{\Sigma(O-E)^2}{E}$$

2. Standard Deviation: -It is denoted by Greek letter σ. For sample size more than 30,

$$\sigma = \sqrt{\frac{\Sigma(X-\overline{X})^2}{n}}$$

3. Level of significance: - "p" is level of significance.

P> 0.05 No significant

P< 0.05 Significant

P< 0.001 Highly significant

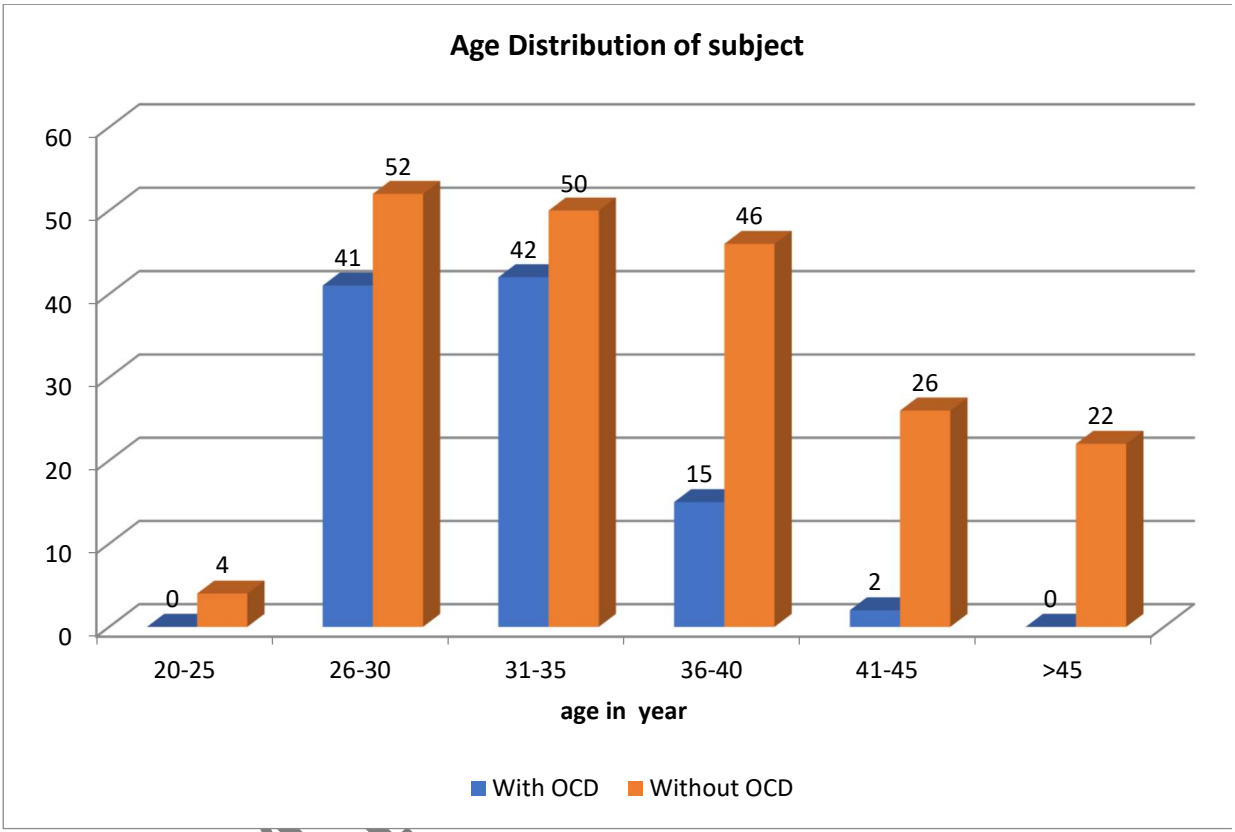
# OBSERVATIONS & RESULTS

## OBSERVATION AND RESULTS

**Table 1: Age Distribution of subject**

| Age | With OCD | | Without OCD | | P Value |
|---|---|---|---|---|---|
| | Number | % | Number | % | |
| 20-25 | 0 | 0% | 4 | 2% | <0.001 |
| 26-30 | 41 | 41% | 52 | 26% | |
| 31-35 | 42 | 42% | 50 | 25% | |
| 36-40 | 15 | 15% | 46 | 23% | |
| 41-45 | 2 | 2% | 26 | 13% | |
| >45 | 0 | 0% | 22 | 11% | |
| Total | 100 | 100% | 200 | 100% | |
| Mean±SD | 31.98±3.86 | | 35.93±8.07 | | |

The table shows the age distribution of patients with and without Obsessive-Compulsive Disorder (OCD). It shows a higher prevalence of OCD in the 26-30 and 31-35 age groups, with 41% and 42% of OCD subjects falling into these categories, respectively, compared to 26% and 25% of non-OCD subjects. The prevalence decreases in older age groups, with only 2% of those with OCD in the 41-45 age group and none over 45, contrasting with 13% and 11% of non-OCD subjects in the same age ranges. The mean age of patients with OCD is lower (31.98 years) than those without OCD (35.93 years), and the p-value of <0.001 indicates a statistically significant difference in age distribution between the two groups.

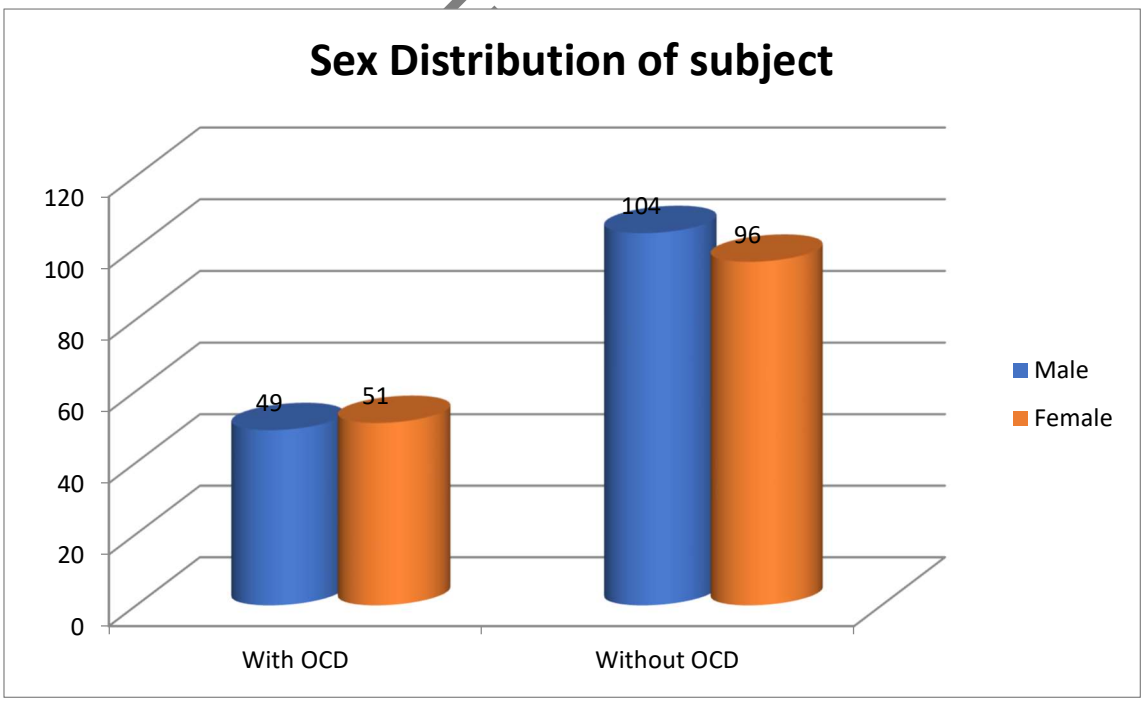



**Graph 1: Age Distribution of subject**

**Table 2 : Sex Distribution of subject**

| Sex | With OCD | | Without OCD | |
|---|---|---|---|---|
| | Number | % | Number | % |
| Male | 49 | 49% | 104 | 52% |
| Female | 51 | 51% | 96 | 48% |
| Total | 100 | 100% | 200 | 100% |

The table shows the sex distribution of patients with and without Obsessive-Compulsive Disorder (OCD). Among those with OCD, 49% are male and 51% are female. In contrast, among those without OCD, 52% are male and 48% are female. The distribution of sex between the two groups is quite similar, with no substantial difference in the proportion of males and females across the groups. This shows that the prevalence of OCD does not show a significant sex-based disparity in this sample.



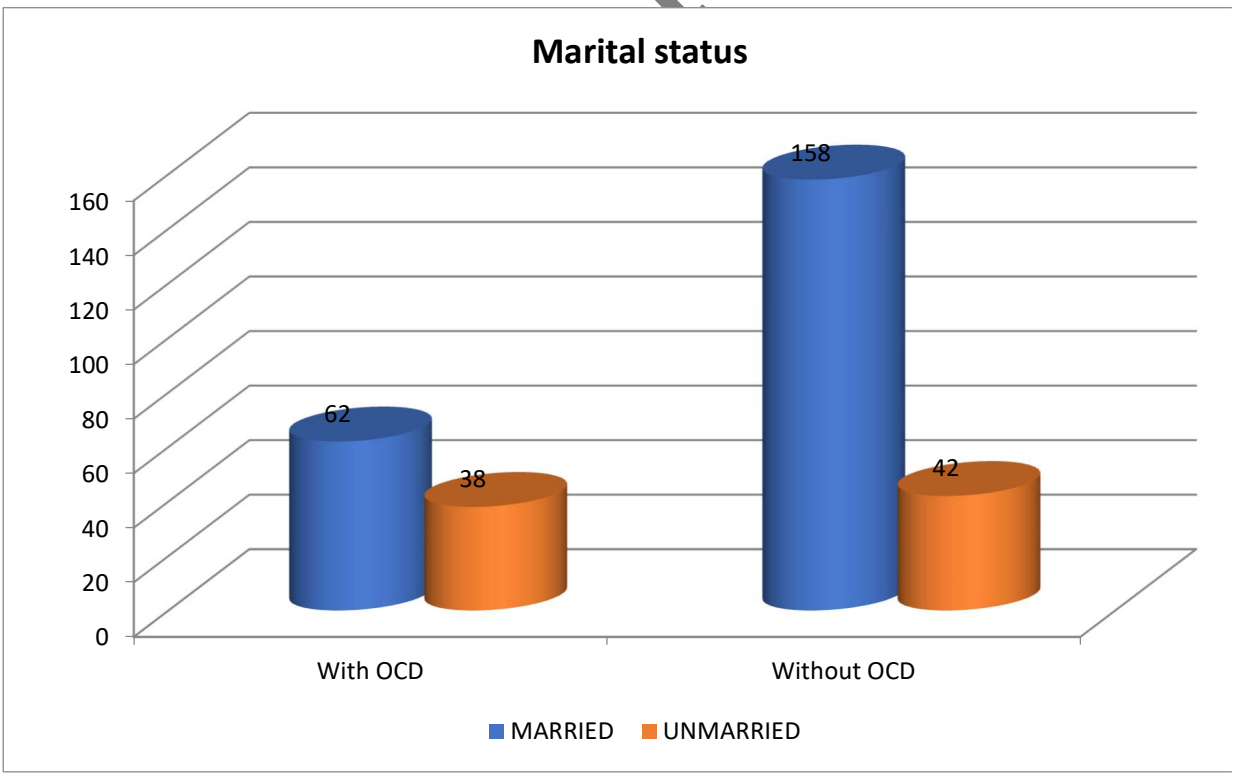

**Graph 2 : Sex Distribution of subject**

**Table 3 : Distribution of Marital status**

| Marital status | With OCD | | Without OCD | | P Value |
|---|---|---|---|---|---|
| | Number | % | Number | % | |
| MARRIED | 62 | 62% | 158 | 79% | 0.473 |
| UNMARRIED | 38 | 38% | 42 | 21% | |
| Total | 100 | 100% | 200 | 100% | |

The table shows the marital status distribution for patients with and without Obsessive-Compulsive Disorder (OCD). Among those with OCD, 62% are married and 38% are unmarried. In contrast, 79% of those without OCD are married, while only 21% are unmarried. This indicates a higher proportion of unmarried patients with OCD compared to those without, suggesting a potential association between OCD and a higher likelihood of being unmarried.





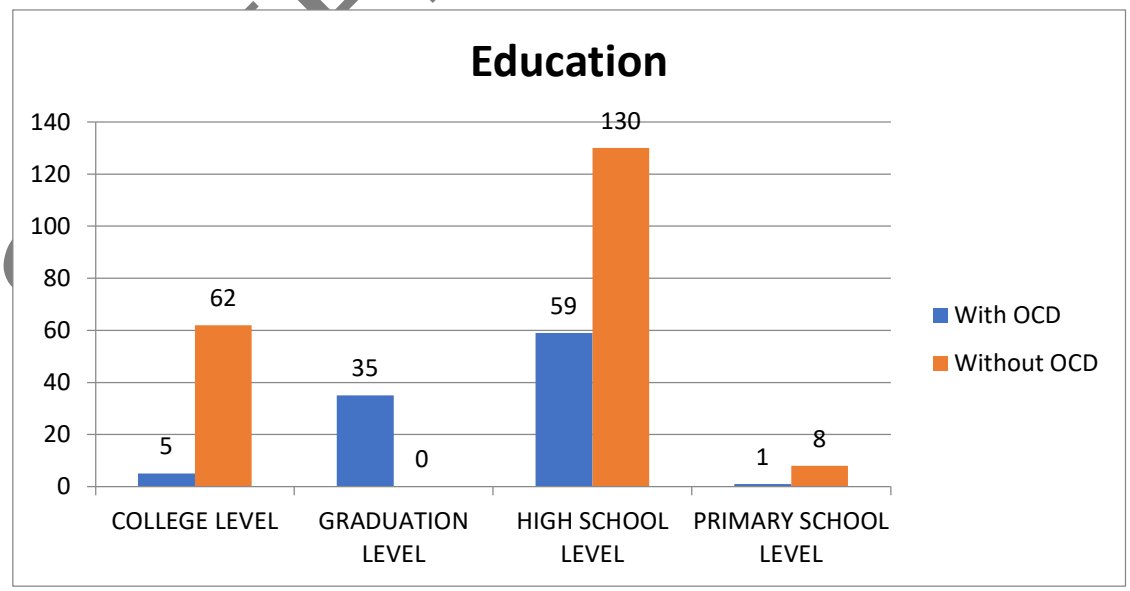

**Graph 3 : Distribution of Marital status**

**Table 4: Distribution of Educational Status**

| Education | With OCD | | Without OCD | | P Value |
|---|---|---|---|---|---|
| | Number | % | Number | % | |
| COLLEGE LEVEL | 5 | 5% | 62 | 31% | 0.379 |
| GRADUATION LEVEL | 35 | 35% | 0 | 0% | |
| HIGH SCHOOL LEVEL | 59 | 59% | 130 | 65% | |
| PRIMARY SCHOOL LEVEL | 1 | 1% | 8 | 4% | |
| Total | 100 | 100% | 200 | 100% | |

The table shows the educational levels of patients with and without Obsessive-Compulsive Disorder (OCD). It shows that among those with OCD, 59% have a high school education, 35% have graduated, 5% have attended college, and only 1% have completed primary school. Conversely, patients without OCD are more likely to have college-level education (31%) and high school education (65%), with none at the graduation level. This indicates that patients with OCD generally have lower educational attainment compared to those without OCD.



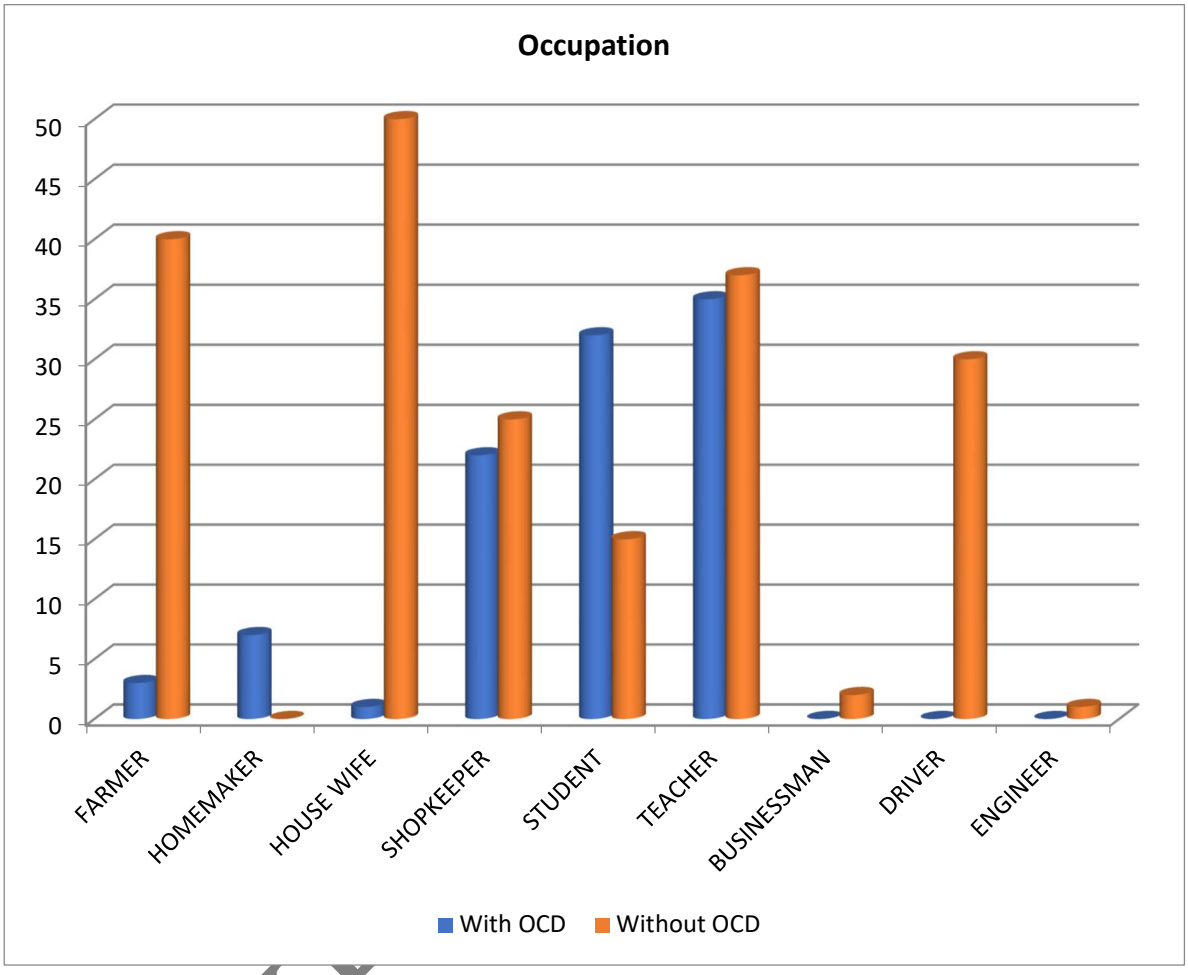



**Graph 4 : Distribution of Educational Status**

**Table 5 : Distribution of Occupation**

| Occupation | With OCD | | Without OCD | | P Value |
|---|---|---|---|---|---|
| | Number | % | Number | % | |
| FARMER | 3 | 1.5% | 40 | 20% | 0.170 |
| HOMEMAKER | 7 | 3.5% | 0 | 0% | |
| HOUSE WIFE | 1 | 0.50% | 50 | 25% | |
| SHOPKEEPER | 22 | 11% | 25 | 12.5% | |
| STUDENT | 32 | 16% | 15 | 7.5% | |
| TEACHER | 35 | 17.5% | 37 | 18.5% | |
| BUSINESSMAN | 0 | 0% | 2 | 1% | |
| DRIVER | 0 | 0% | 30 | 15% | |
| ENGINEER | 0 | 0% | 1 | 0.50% | |
| Total | 100 | 100% | 200 | 100% | |

The table shows the occupational distribution of patients with and without Obsessive-Compulsive Disorder (OCD). Among those with OCD, the most common occupations are students (16%) and teachers (17.5%), with a notable absence in roles such as businessman, driver, or engineer. In contrast, patients without OCD have a broader occupational spread, including farmers (20%), housewives (25%), drivers (15%), and engineers (0.5%). This shows that patients with OCD are more concentrated in specific roles, particularly as students and teachers, whereas those without OCD have a more diverse range of occupations.

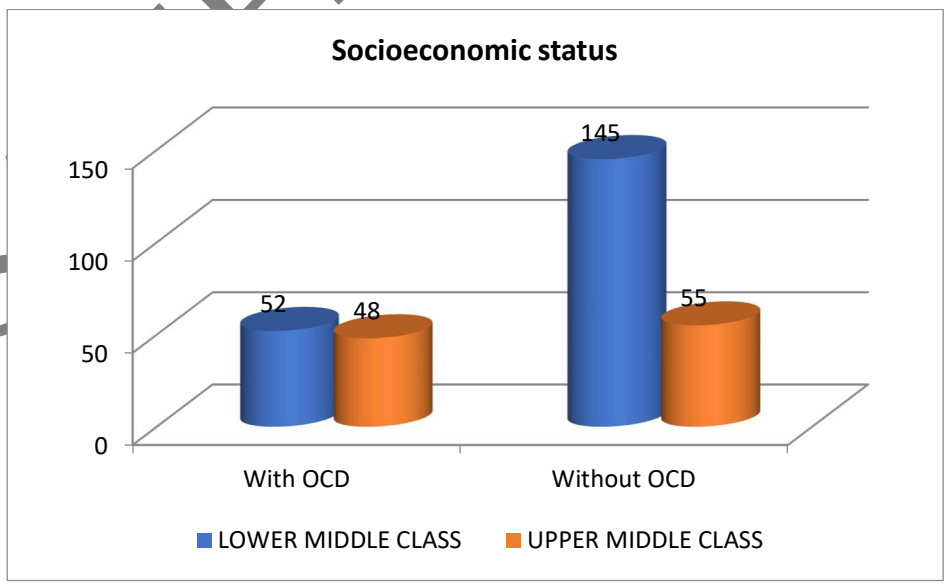



**Graph 5 : : Distribution of Occupation**

**Table 7 : Distribution of Socioeconomical status**

| Socioeconomic status | With OCD | | Without OCD | | P Value |
|---|---|---|---|---|---|
| | Number | % | Number | % | |
| LOWER MIDDLE CLASS | 52 | 52% | 145 | 77.5% | 0.452 |
| UPPER MIDDLE CLASS | 48 | 48% | 55 | 27.5% | |
| Total | 100 | 100% | 200 | 100% | |

The table shows the socioeconomic status of patients with and without Obsessive-Compulsive Disorder (OCD). Among those with OCD, 52% are categorized as lower middle class and 48% as upper middle class. In contrast, patients without OCD predominantly fall into the lower middle class (77.5%), with only 27.5% in the upper middle class. This shows that patients with OCD have a more balanced distribution between lower and upper middle class compared to those without OCD, who are more heavily represented in the lower middle class.

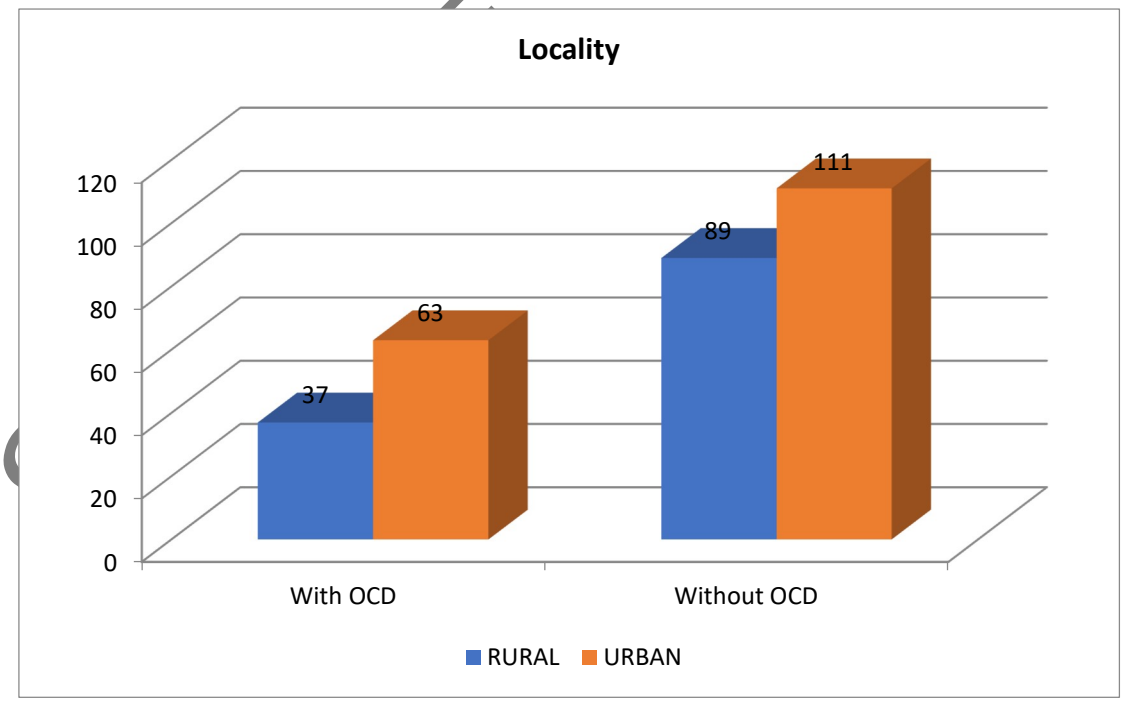



**Graph 7 : Distribution of Socioeconomical status**

**Table 8 : Distribution of Locality**

| Locality | With OCD | | Without OCD | | P Value |
|---|---|---|---|---|---|
| | Number | % | Number | % | |
| RURAL | 37 | 37% | 89 | 44.5% | 0.025 |
| URBAN | 63 | 63% | 111 | 55.5% | |
| Total | 100 | 100% | 200 | 100% | |

The table shows the distribution of patients with and without Obsessive-Compulsive Disorder (OCD) based on locality. Among those with OCD, 63% live in urban areas and 37% in rural areas. In contrast, patients without OCD are more evenly split, with 55.5% residing in urban areas and 44.5% in rural areas. This indicates a higher proportion of patients with OCD living in urban areas compared to those without OCD, suggesting a potential urban-rural difference in the prevalence or reporting of OCD.




**Graph 8 : Distribution of Locality**

# DISCUSSION

## DISCUSSION

This cross-sectional study evaluated the clinical correlates of OCD comorbidity in patients with schizophrenia. Previous studies suggest an increased OCD prevalence among patients with schizophrenia compared to the general population. Similar neural pathways are impacted in the etiology of both disorders and that seemed the cause of the high overlap between those disorders. However, patients with and without OCD differed clinically according to past studies. In this study, there were no significant differences in age, gender, and duration of illness between those with and without OCD. Thus, there was no major diversity in the group characteristics causing a clinical bias on the results.

Our study shows a significant difference between subjects with and without OCD ($p < 0.001$). The majority of OCD subjects are aged 26-35 years (83%), whereas subjects without OCD are more evenly spread across age groups, with a higher mean age of 35.93 ± 8.07 years compared to 31.98 ± 3.86 years for OCD subjects.

Our study the sex distribution among subjects with and without OCD is fairly balanced, with 49% males and 51% females in the OCD group. In the non-OCD group, 52% are males and 48% are females. The distribution shows no significant gender difference between the two groups.

Our study the marital status distribution shows that 62% of subjects with OCD are married, compared to 79% in the non-OCD group, with no statistically significant difference ($p = 0.473$). A larger percentage of OCD subjects are unmarried (38%) compared to those without OCD (21%). Overall, the non-OCD group has a higher proportion of married individuals.

Our study the educational status distribution shows that the majority of both OCD and non-OCD subjects have a high school education, with 59% and 65%, respectively. Notably, 35% of OCD subjects have a graduation-level education, while none of the non-OCD subjects have reached this level. College-level education is more common in the non-OCD group (31%) compared to only 5% in the OCD group, with no statistically significant difference between the groups ($p = 0.379$).

According to the current literature, there is a lack of consensus on the relationship between sociodemographic characteristics and OCD in schizophrenia. [108] There was no significant relationship between OCD comorbidity and age or gender in previous studies, similar with our study. Some studies reported that schizophrenia patients with OCD had higher education; however, education level was not related with OCD comorbidity in this study. [109] In addition, marital status and socioeconomic status did not show a significant difference between the groups. Contrary to that finding, Owashi *et al*. found that OCD comorbidity rate was related with lower socioeconomic status in patients with schizophrenia. [110] As a result, it can be concluded that there is no causal relationship between the OCD presence and sociodemographic features of the patients.

Our study the locality distribution indicates that 63% of OCD subjects live in urban areas, compared to 55.5% of non-OCD subjects. Meanwhile, 37% of OCD subjects are from rural areas, versus 44.5% of those without OCD. The difference in locality distribution between the two groups is statistically significant ($p = 0.025$).

Our study shows the majority of both OCD and non-OCD subjects are Hindu, with 86% and 98%, respectively. Muslims make up 14% of the OCD

group and only 1.5% of the non-OCD group, but this difference is not statistically significant ($p = 0.478$).

Our study the distribution of schizophrenia types shows that 64% of OCD subjects have paranoid schizophrenia, compared to 52% of those without OCD. Undifferentiated schizophrenia is more common in the non-OCD group (48%) than in the OCD group (36%), though the difference is not statistically significant ($p = 0.126$).

This finding was reported in many previous studies, and earlier onset of psychotic symptoms was related with more severe clinical symptoms and poorer prognosis in schizophrenia according to the current literature. Although it is unclear if OCD presence poses a risk for initiation of psychosis, primary OCD at younger ages may exert an influence on the emergence of schizophrenia[110-112] Future studies should be made to provide a better understanding of the impact of OCD on the onset of schizophrenia.

Our study the mean age of onset for OCD is $27.48 \pm 3.54$ years, significantly earlier than $30.86 \pm 6.75$ years in the non-OCD group ($p < 0.001$). This indicates a statistically significant difference in the age of onset between the two groups.

Our study shows that hospitalization frequencies for individuals with and without Obsessive-Compulsive Disorder (OCD). It reveals that 91% of those with OCD had 5-8 hospitalizations, while only 7.5% of those without OCD experienced this range. The mean number of hospitalizations for people with OCD (6.03) is significantly higher than for those without OCD (2.92), with a p-value indicating a statistically significant difference (<0.001).

Our study shows the distribution of total treatment duration between individuals with and without Obsessive-Compulsive Disorder (OCD). It

indicates that a higher percentage of those with OCD (53%) received treatment for 12-20 months compared to those without OCD (45.5%). The mean treatment duration for individuals with OCD is slightly lower (21.45 months) than for those without OCD (23.70 months), with a p-value suggesting a statistically significant difference (0.018).

Our study shows that the duration of current treatment for individuals with and without Obsessive-Compulsive Disorder (OCD). It shows that 42% of those with OCD are treated for 3-7 months, compared to only 8.5% of those without OCD. The mean duration of current treatment for individuals with OCD (7.80 months) is significantly shorter than for those without OCD (10.77 months), with a p-value indicating a statistically significant difference (<0.001).

Our study shows that the frequency of treatment discontinuation for individuals with and without Obsessive-Compulsive Disorder (OCD). It shows that 76% of those with OCD left treatment 5-8 times, while only 3% of those without OCD did so. The mean number of times treatment was left for individuals with OCD (7.08) is significantly higher than for those without OCD (2.08), with a p-value indicating a statistically significant difference (<0.001).

Our study shows that the frequency of symptom relapses during treatment for individuals with and without Obsessive-Compulsive Disorder (OCD). It reveals that all individuals with OCD experienced 4-9 relapses, whereas 97.5% of those without OCD had only 1-3 relapses. The mean number of relapses is significantly higher for those with OCD (7.08) compared to those without OCD (2.34), with a p-value showing a statistically significant difference (<0.001).


# SUMMARY & CONCLUSION

## SUMMARY

The study aims to explore the clinical correlates of Obsessive-Compulsive Disorder (OCD) in patients with schizophrenia. This investigation focuses on understanding how OCD influences the clinical presentation and treatment outcomes of schizophrenia, highlighting the differences between patients with schizophrenia who have OCD and those who do not. By examining various aspects such as symptom severity, cognitive functioning, and treatment adherence, the study seeks to provide a comprehensive view of how OCD interacts with schizophrenia and affects patient management.

The study assesses the severity of positive and negative symptoms in schizophrenia patients with and without OCD. It aims to identify whether the presence of OCD influences the intensity or type of symptoms experienced. Initial findings suggest that patients with schizophrenia and OCD may exhibit different symptom profiles compared to those without OCD. For example, the Positive and Negative Syndrome Scale (PANSS) results indicate that individuals with OCD tend to have higher scores in certain symptom domains, which could reflect the additional burden of OCD on top of schizophrenia.

Another objective is to compare cognitive functioning between schizophrenia patients with and without OCD. This involves evaluating performance on cognitive tests such as the Trail Making Test (TMT) and the Stroop Test. The data reveal that patients with schizophrenia and OCD often show more significant impairments in cognitive tasks compared to those without OCD. This suggests that OCD may exacerbate cognitive deficits commonly associated with schizophrenia, affecting overall cognitive performance and daily functioning.

# CONCLUSION

The study aimed to elucidate the clinical correlates of Obsessive-Compulsive Disorder (OCD) in patients with schizophrenia by focusing on symptom profiles, cognitive functioning, and treatment adherence. The findings reveal that schizophrenia patients with OCD tend to exhibit more severe positive and negative symptoms compared to those without OCD. This suggests that the presence of OCD may exacerbate the symptom burden in schizophrenia, leading to a more complex clinical presentation and potentially affecting overall treatment outcomes.

In terms of cognitive functioning, patients with schizophrenia and OCD demonstrate significant impairments relative to those without OCD. Performance on cognitive tests, such as the Trail Making Test and Stroop Test, highlights that the cognitive deficits in schizophrenia are further intensified by the additional challenge of OCD. This underscores the need for comprehensive cognitive assessments and tailored interventions that address both OCD and schizophrenia to improve cognitive functioning and daily functioning in these patients.

The study also highlights differences in treatment and compliance between the two groups. Patients with schizophrenia and OCD often face greater challenges with treatment adherence, which can impact their overall therapeutic outcomes. These findings emphasize the importance of developing integrated treatment strategies that address the complexities of managing both OCD and schizophrenia. Improved understanding of these clinical correlates can guide more effective treatment approaches and enhance patient care and quality of life.