ORIGINAL RESEARCH

Prevalence and Severity of Obsessive-Compulsive Disorder (OCD) in Urban vs. Rural Populations

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ABSTRACT

Aim: The study aimed to assess the prevalence and severity of obsessive-compulsive disorder (OCD) in urban versus rural populations, examining the differences in symptom intensity and associated factors between these demographic groups. **Materials and Methods:** A cross-sectional study was conducted with 100 participants, equally divided between urban and rural populations. Participants were recruited from community centers and healthcare providers. The Mini International Neuropsychiatric Interview (MINI) was utilized to confirm OCD diagnoses, and the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS) was used to evaluate symptom severity. **Results:** The study found that 36% of urban participants were diagnosed with OCD, compared to 22% in the rural group, indicating a significantly higher prevalence in urban areas ($p < 0.05$). Symptom severity, assessed through Y-BOCS, was also greater in urban participants, with higher mean scores for both obsession and compulsion severity. Factors such as chronic stress and family history were more commonly associated with OCD severity in urban populations. **Conclusion:** The findings reveal a higher prevalence and greater severity of OCD symptoms in urban populations compared to rural areas, highlighting the impact of environmental and lifestyle factors. These results suggest the need for targeted mental health interventions in urban settings to address the specific challenges posed by the urban environment. Further research is recommended to explore the underlying mechanisms driving these disparities in OCD prevalence and severity.

Keywords: Obsessive-Compulsive Disorder, Urban population, Rural population, Symptom severity, Mental health.

INTRODUCTION

Obsessive-Compulsive Disorder (OCD) is a mental health condition characterized by persistent, intrusive thoughts (obsessions) and repetitive behaviors or mental acts (compulsions) performed to alleviate the distress caused by these thoughts. OCD can significantly impair an individual's quality of life, affecting their daily functioning, relationships, and overall well-being. Despite advances in understanding and treating OCD, its exact prevalence and severity can vary greatly depending on various factors, including geographical and environmental influences. One of the areas of interest in psychiatric research is exploring the differences in the prevalence and severity of OCD between urban and rural populations. Understanding these differences is crucial as it helps tailor prevention strategies, mental health services, and treatment approaches to meet the specific needs of different communities.[1]The distinction between urban and rural living conditions has long been associated with variations in mental health outcomes. Urban environments are often characterized by higher population densities, greater social stressors, increased pollution levels, noise, fast-paced lifestyles, and a more competitive atmosphere. These factors can contribute to elevated stress levels, which are known to be significant risk factors for developing or exacerbating mental health disorders, including OCD. In contrast, rural areas tend to offer a more tranquil lifestyle with stronger community ties, less pollution, and reduced levels of social and environmental stressors. However, the social isolation, limited access to mental health care, and lack of anonymity in rural communities can also be challenging factors that might influence the severity and management of OCD.The prevalence of OCD in different geographical settings has been a subject of debate among researchers. Some studies suggest that OCD is more prevalent in urban populations, possibly due to higher levels of stress, increased awareness, and better access to mental health services that lead to more diagnoses. In urban areas, people might be more

likely to seek treatment due to the availability of specialized healthcare facilities and less stigma associated with mental health issues. On the other hand, rural areas might report lower prevalence rates not because OCD is less common, but because of underdiagnosis, lack of mental health resources, and a higher degree of stigma attached to seeking psychiatric help.[2]

Severity of OCD symptoms can also be influenced by the environment in which individuals live. Urban living often subjects individuals to a continuous influx of stressors, including economic pressures, traffic congestion, noise pollution, and social competition, all of which can aggravate OCD symptoms. People with OCD in urban areas may experience heightened anxiety due to the overwhelming demands of city life, which can trigger or worsen obsessive thoughts and compulsive behaviors. Conversely, rural settings, while offering a potentially less stressful environment, can present their own challenges. Individuals living in rural areas may experience social isolation, lack of support systems, and limited access to psychiatric care, which can impede the effective management of OCD and lead to increased symptom severity in untreated cases.[3]Another critical factor in examining OCD in urban and rural populations is the role of socio-economic status. Urban areas often have a diverse socio-economic landscape, with a significant portion of the population facing financial hardships, unemployment, or living in inadequate housing conditions. These socio-economic stressors can exacerbate mental health disorders, including OCD. Meanwhile, rural areas, while sometimes economically disadvantaged, may provide a more stable lifestyle with fewer stressors related to financial competition, which might act as a protective factor against the development or escalation of OCD.Access to mental health services is a decisive factor influencing both the prevalence and severity of OCD. Urban areas typically have a wider array of healthcare facilities, including specialized mental health professionals, support groups, and community-based interventions. This accessibility can lead to earlier detection and more effective management of OCD, which in turn may reduce the severity of the disorder over time. In contrast, rural areas often struggle with a scarcity of mental health services, longer wait times, fewer specialists, and a lack of psychiatric resources, which may lead to delays in diagnosis and treatment. The stigma associated with mental health in close-knit rural communities can also discourage individuals from seeking help, further contributing to the underreporting and undertreatment of OCD in these regions.[4]The cultural context also plays a significant role in how OCD is perceived and treated in urban versus rural settings. Urban populations, with their exposure to diverse cultures and ideas, might have a more progressive view on mental health, reducing the stigma and encouraging individuals to seek help. Rural communities, however, may be more traditional, with mental health often being a taboo subject. This cultural resistance to acknowledging mental health issues can result in individuals suffering in silence, exacerbating their symptoms due to lack of intervention and support.[5]Research has shown that certain triggers for OCD, such as trauma, anxiety, and stress, can be more pronounced in urban areas due to the fast-paced and unpredictable nature of city life. Factors like higher education and greater health awareness in urban settings can lead to more frequent self-reporting of OCD symptoms, thus inflating the prevalence statistics. On the other hand, rural areas might exhibit a tendency toward resilience, where close-knit communities provide emotional support that buffers against severe mental health deterioration, despite the challenges posed by limited healthcare infrastructure.

MATERIALS AND METHODS

This study employed a cross-sectional design to investigate the prevalence and severity of obsessive-compulsive disorder (OCD) in urban and rural populations. The study aimed to compare the occurrence and intensity of OCD symptoms between these two demographic groups using standardized assessment tools.A total of 100 participants were enrolled in the study, with 50 individuals from urban areas and 50 from rural areas. Participants were recruited through local health clinics, community centers, and online advertisements in both settings. Inclusion criteria included adults aged 18-65 years who provided informed consent and had no prior diagnosis of any severe psychiatric condition other than OCD. Individuals with a history of cognitive impairment or substance abuse were excluded to maintain the accuracy of the study results.This study was approved by the Institutional Review Board (IRB) of the participating institutions. All procedures were conducted in accordance with the ethical guidelines of the Declaration of Helsinki. Participants were assured of their right to withdraw from the study at any point without any consequence, and all data were treated with strict confidentiality.

Methodology

A purposive sampling technique was used to ensure that both urban and rural populations were equally represented in the study. The sample size of 50 participants per group was chosen to provide sufficient power for statistical comparison while remaining manageable for data collection.

Data were collected using the following tools:

1. **Demographic Questionnaire:** This self-administered form collected information on participants' age, gender, educational background, occupation, marital status, and location of residence (urban or rural).
2. **Yale-Brown Obsessive-Compulsive Scale (Y-BOCS):** This validated tool was employed to assess the severity of OCD symptoms. It includes

a semi-structured interview format that measures both obsessive thoughts and compulsive behaviors on a scale from 0 to 40, where higher scores indicate more severe symptoms.

3. **Mini International Neuropsychiatric Interview (MINI):** This structured diagnostic interview was used to confirm the presence of OCD in participants, following the criteria established by the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5).

Participants were recruited through various channels, including healthcare providers, social media platforms, and community outreach efforts, targeting both urban and rural areas to ensure a diverse population sample. Those who expressed interest in participating underwent a screening process to determine eligibility based on predefined inclusion and exclusion criteria. Once deemed eligible, participants received detailed information about the study's objectives, procedures, potential risks, and benefits. Written informed consent was obtained from each participant before proceeding with data collection to ensure they fully understood and agreed to the terms of their involvement in the study.

During the data collection phase, each participant completed a demographic questionnaire to gather basic information, followed by the Mini International Neuropsychiatric Interview (MINI) to confirm the diagnosis of Obsessive-Compulsive Disorder (OCD). For those diagnosed with OCD, the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS) assessment was administered to measure the severity of their symptoms. To accommodate the diverse geographical locations of the participants, interviews were conducted either in-person or via video calls, ensuring that both urban and rural participants could take part in the study without logistical barriers.

All collected data were securely recorded and anonymized to protect participant confidentiality. The results from the demographic questionnaires, diagnostic interviews, and severity assessments were carefully entered into a secure database. This systematic approach ensured the integrity and reliability of the data, providing a solid foundation for subsequent analysis and interpretation.

Statistical Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) software, version 25.0. Descriptive statistics were used to summarize the demographic data, prevalence rates, and severity of OCD symptoms in both urban and rural populations. A chi-square test was applied to compare the prevalence rates of OCD between the two groups, while an independent t-test was used to evaluate differences in OCD severity scores. A p-value of <0.05 was considered statistically significant for all analyses.

RESULTS

Table 1: Demographic Characteristics of Study Participants

The demographic analysis of the study participants showed a relatively balanced distribution between the urban and rural populations. The mean age of participants in the urban group was 34.2 years (±10.1), while the rural group had a slightly higher mean age of 36.8 years (±11.4). The overall mean age for the combined sample was 35.5 years (±10.8). The p-value of 0.28 indicates no significant age difference between the two groups, suggesting that the participants were well-matched in terms of age.Gender distribution was also comparable, with 44% of the urban participants being male and 48% in the rural group, resulting in a total of 46% male participants. Females constituted 56% of the urban population and 52% of the rural population, with a combined total of 54% females. The gender difference was not statistically significant ($p=0.71$), indicating a balanced gender representation across both groups.Regarding education level, a higher percentage of participants from urban areas (72%) had a college or higher education compared to those from rural areas (58%). In contrast, a larger proportion of rural participants (42%) had a high school education or less compared to urban participants (28%). The p-value of 0.15 suggests that the difference in education levels between urban and rural groups was not statistically significant.Marital status was also similar across both groups, with 60% of urban participants being married compared to 64% in the rural group. Single individuals accounted for 40% in the urban group and 36% in the rural group. The p-value of 0.68 indicates that the marital status distribution was not significantly different between the two populations.

Table 2: Prevalence of OCD in Urban vs. Rural Populations

The prevalence of Obsessive-Compulsive Disorder (OCD) varied significantly between urban and rural populations. In the urban group, 36% of participants were diagnosed with OCD, compared to 22% in the rural group. The overall prevalence of OCD among all participants was 29%. The p-value of <0.05 indicates that the difference in OCD prevalence between urban and rural populations was statistically significant, suggesting that OCD may be more prevalent in urban areas.Conversely, 64% of the urban population and 78% of the rural population did not meet the criteria for OCD, showing a higher rate of non-OCD cases in the rural group. This significant difference points to potential environmental or lifestyle factors influencing the development of OCD in urban settings.

Table 3: Severity of OCD Symptoms Based on Yale-Brown Obsessive-Compulsive Scale (Y-BOCS)

The severity of OCD symptoms was assessed using the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS), and the results revealed that the distribution of severity levels was similar between urban and rural

populations. Among the urban participants diagnosed with OCD, 22% had mild symptoms, 44% had moderate symptoms, 28% had severe symptoms, and 6% had extreme symptoms. The rural population showed a similar distribution: 18% mild, 45% moderate, 27% severe, and 9% extreme.The p-values for all severity levels (ranging from 0.65 to 0.91) indicate no statistically significant differences between urban and rural populations concerning the severity of OCD symptoms. This suggests that while the prevalence of OCD may differ, the intensity of the disorder is relatively consistent across different settings.

Table 4: Mini International Neuropsychiatric Interview (MINI) Diagnostic Results for OCD

The MINI diagnostic results further illustrated differences in specific criteria between urban and rural participants. Obsessive thoughts were present in 40% of urban participants compared to 30% of rural participants, while compulsive behaviors were observed in 36% of the urban group and 24% of the rural group. Although these differences were noticeable, they were not statistically significant (p-values of 0.22 and 0.15, respectively).Significant distress or impairment caused by OCD was reported by 32% of urban participants and 20% of rural participants, while interference with daily activities was noted in 28% of the urban group and 18% of the rural group. The p-values of 0.12 and 0.09 indicate that these differences were not statistically significant. However, the diagnosis of OCD confirmed by the MINI showed a statistically significant difference, with 36% of urban participants diagnosed compared to 22% in rural participants ($p<0.05$).

Table 5: Comparative Analysis of OCD Symptom Severity Between Urban and Rural Populations

The comparative analysis of OCD symptom severity highlighted some statistically significant findings. The mean obsession severity score was higher in urban participants (14.2 ± 5.8) compared to rural participants (12.4 ± 6.1), with a p-value of 0.03, indicating a significant difference. Similarly, the compulsion severity score was significantly higher in the urban group (15.6 ± 6.2) than in the rural group (13.9 ± 5.5), with a p-value of 0.04.The total Y-BOCS score, reflecting overall OCD severity, was also significantly higher in the urban population (29.8 ± 10.1) compared to the rural population (26.3 ± 9.7), with a p-value of <0.05. These findings suggest that not only is OCD more prevalent in urban areas, but the severity of symptoms is also greater in these populations.

Table 6: Factors Associated with OCD Severity in Urban and Rural Populations

The analysis of factors associated with OCD severity revealed significant differences between urban and rural participants. A family history of OCD was more common in urban participants (20%) compared to rural participants (10%), with an odds ratio (OR) of 2.2 and a p-value of 0.03, indicating a significant association.Chronic stress was reported by 32% of urban participants and 18% of rural participants, with an odds ratio of 1.8 and a p-value of 0.04, suggesting that stress may be a more significant contributor to OCD severity in urban areas. Co-morbid anxiety disorders were present in 24% of urban participants and 14% of rural participants, with an odds ratio of 1.7 and a p-value of 0.05, indicating a trend toward higher rates of anxiety disorders in urban populations, although the difference was not as pronounced.

Table 1: Demographic Characteristics of Study Participants

Demographic Variable	Urban Population (n=50)	Rural Population (n=50)	Total (N=100)	p-value (Chi-Square Test)
Age (Mean ± SD)	34.2 ± 10.1 years	36.8 ± 11.4 years	35.5 ± 10.8	0.28
Gender				
Male	22 (44%)	24 (48%)	46 (46%)	0.71
Female	28 (56%)	26 (52%)	54 (54%)	0.71
Education Level				
High School or Less	14 (28%)	21 (42%)	35 (35%)	0.15
College or Higher	36 (72%)	29 (58%)	65 (65%)	0.15
Marital Status				
Single	20 (40%)	18 (36%)	38 (38%)	0.68
Married	30 (60%)	32 (64%)	62 (62%)	0.68

Table 2: Prevalence of OCD in Urban vs. Rural Populations

OCD Diagnosis Criteria	Urban Population (n=50)	Rural Population (n=50)	Total (N=100)	p-value (Chi-Square Test)
OCD Positive Cases	18 (36%)	11 (22%)	29 (29%)	<0.05
OCD Negative Cases	32 (64%)	39 (78%)	71 (71%)	<0.05

Table 3: Severity of OCD Symptoms Based on Yale-Brown Obsessive-Compulsive Scale (Y-BOCS)

Severity Level (Y-BOCS Score)	Urban Population (n=18)	Rural Population (n=11)	Total (N=29)	p-value (t-test)
Mild (0-13)	4 (22%)	2 (18%)	6 (21%)	0.65
Moderate (14-25)	8 (44%)	5 (45%)	13 (45%)	0.82
Severe (26-34)	5 (28%)	3 (27%)	8 (28%)	0.91
Extreme (35-40)	1 (6%)	1 (9%)	2 (6%)	0.76

Table 4: Mini International Neuropsychiatric Interview (MINI) Diagnostic Results for OCD

Diagnostic Criteria (DSM-5) for OCD	Urban Population (n=50)	Rural Population (n=50)	Total (N=100)	p-value (Chi-Square Test)
Presence of Obsessive Thoughts	20 (40%)	15 (30%)	35 (35%)	0.22
Presence of Compulsive Behaviors	18 (36%)	12 (24%)	30 (30%)	0.15
Significant Distress or Impairment	16 (32%)	10 (20%)	26 (26%)	0.12
Interference with Daily Activities	14 (28%)	9 (18%)	23 (23%)	0.09
Diagnosis of OCD Confirmed by MINI	18 (36%)	11 (22%)	29 (29%)	<0.05

Table 5: Comparative Analysis of OCD Symptom Severity Between Urban and Rural Populations

OCD Symptom Categories	Urban Population (Mean ± SD)	Rural Population (Mean ± SD)	p-value (t-test)
Obsession Severity Score	14.2 ± 5.8	12.4 ± 6.1	0.03
Compulsion Severity Score	15.6 ± 6.2	13.9 ± 5.5	0.04
Total Y-BOCS Score	29.8 ± 10.1	26.3 ± 9.7	<0.05

Table 6: Factors Associated with OCD Severity in Urban and Rural Populations

Risk Factors	Urban Population (n=50)	Rural Population (n=50)	Odds Ratio (OR)	95% Confidence Interval (CI)	p-value
Family History of OCD	10 (20%)	5 (10%)	2.2	1.1-4.2	0.03
Chronic Stress	16 (32%)	9 (18%)	1.8	1.0-3.2	0.04
Co-morbid Anxiety Disorder	12 (24%)	7 (14%)	1.7	0.9-3.1	0.05

DISCUSSION

The demographic analysis of our study revealed no significant differences in age, gender, education level, or marital status between urban and rural populations. These findings align with the results from Fontenelle et al. (2014), who reported that demographic variables such as age and gender are not directly linked to the onset of OCD, emphasizing that both urban and rural populations are equally susceptible when these factors are considered in isolation. [6]Similarly, a study by Ruscio et al. (2015) indicated that OCD's demographic distribution tends to be balanced across different settings, with no significant differences based on gender or marital status, which mirrors our study's findings (p-values for gender and marital status were 0.71 and 0.68, respectively).[7]The slightly higher education level observed among urban participants in our study is consistent with the findings of Simpson et al. (2016), who suggested that individuals in urban areas generally have better access to educational opportunities, which may lead to higher awareness and reporting of psychiatric symptoms like OCD.[8] Although our study found no significant impact of education on OCD prevalence (p-value = 0.15), the trend observed is in line with earlier research that highlights the role of education in recognizing and seeking treatment for mental health issues.The significantly higher prevalence of OCD in urban areas (36%) compared to rural areas (22%) in our study aligns with findings from Mathes et al. (2018), who noted that urban environments are associated with a higher prevalence of anxiety-related disorders, including OCD. Mathes et al. attributed this difference to increased stress, pollution, and lifestyle factors prevalent in urban areas, which our study also suggests as potential contributors to the elevated rates observed (p-value <0.05).[9]Moreover, our results are consistent with the study by Weissman et al. (2017), which found that the prevalence of OCD in urban populations is significantly higher than in rural areas due to increased exposure to stressful events and a more competitive lifestyle.[10] The rural population's higher rate of non-OCD cases in our study (78%) supports these findings, indicating that a less stressful, more community-oriented lifestyle in rural areas may serve as a protective factor against developing OCD.The results regarding the severity of OCD symptoms between urban and rural populations revealed no significant differences in the distribution of mild, moderate, severe, or extreme symptoms. This observation is consistent with the findings of Pallanti et al. (2016), who reported that while the prevalence

of OCD might be influenced by environmental factors, the severity of symptoms is largely consistent across different geographical settings. [11]Our p-values (ranging from 0.65 to 0.91) support the conclusion that the symptom intensity is independent of whether the individual resides in an urban or rural area.

Further supporting our findings, a study by Stein et al. (2019) demonstrated that the severity of OCD symptoms is more closely associated with the individual's biological and genetic makeup rather than their living environment. This suggests that while urban living may increase the likelihood of developing OCD, once the disorder manifests, its severity is driven by intrinsic factors rather than external ones.[12]Our study's MINI diagnostic results highlighted that obsessive thoughts and compulsive behaviors were more frequently reported in urban participants (40% and 36%, respectively) than in rural participants (30% and 24%, respectively). Although these differences were not statistically significant, they align with the findings of Torres et al. (2015), who noted a trend of higher OCD symptom reporting among urban residents due to greater awareness and accessibility to mental health services.[13]The statistically significant difference in the overall diagnosis of OCD confirmed by the MINI (36% in urban vs. 22% in rural, $p<0.05$) corroborates findings by Grabe et al. (2017), who identified a higher diagnostic rate of OCD in urban areas, likely linked to increased stressors and better access to psychiatric care. This difference highlights the impact of healthcare accessibility and the role of environmental stressors on the incidence of OCD in different populations.[14]Our comparative analysis indicated that urban participants had significantly higher mean obsession severity scores (14.2 ± 5.8) and compulsion severity scores (15.6 ± 6.2) compared to rural participants (12.4 ± 6.1 and 13.9 ± 5.5, respectively), with p-values of 0.03 and 0.04. These results are in line with studies by Abramowitz et al. (2018), who found that urban environments tend to exacerbate the severity of OCD symptoms due to a higher level of environmental stressors and reduced social support networks.[15]The higher total Y-BOCS score in urban participants (29.8 ± 10.1) compared to rural participants (26.3 ± 9.7) observed in our study also reflects the findings of Lochner et al. (2020), who concluded that urban settings might contribute to more severe OCD presentations due to the heightened competitive and stressful nature of city living.[16]Our findings regarding the factors associated with OCD severity indicated that a family history of OCD was significantly more common in urban participants (20%) compared to rural participants (10%), with a p-value of 0.03. This observation is consistent with the study by Miguel et al. (2016), which highlighted the role of genetic predisposition in the urban population, potentially exacerbated by the interplay of genetic and environmental stressors.[17]Chronic stress and co-morbid anxiety disorders were also more prevalent in urban participants (32% and 24%, respectively) compared to rural participants (18% and 14%, respectively), with odds ratios indicating a significant association. These findings are supported by research conducted by Ruscio et al. (2017), who emphasized that chronic stress and anxiety are more pronounced in urban settings, likely due to the fast-paced and high-demand lifestyle in these areas.[18]

CONCLUSION

The study on the prevalence and severity of Obsessive-Compulsive Disorder (OCD) in urban versus rural populations highlights significant differences in both the occurrence and symptom severity of OCD. Our findings revealed a higher prevalence and greater severity of OCD symptoms in urban participants compared to their rural counterparts, potentially linked to increased stressors and environmental factors in urban settings. While demographic factors like age, gender, and education did not show significant differences, the impact of family history and chronic stress was more pronounced in urban areas. These insights emphasize the need for targeted mental health interventions in urban communities to address the unique challenges posed by the environment.

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