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Assessment of Oral Hygiene and Dental Caries in Schizophrenia Patients to General Patients in Hospital of Lucknow City- A Cross Sectional Study

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ABSTRACT

Introduction: Oral health issues are prevalent among individuals with schizophrenia, with teeth becoming incorporated into delusions and hallucinations. Factors like self-mutilation behaviours and somatic delusions about oral pain can lead to unnecessary dental treatments. Poor oral hygiene is common among those with schizophrenia, exacerbated by factors like dry mouth, a side effect of many psychotropic medications.

Aims & Objectives: The aim of this study is to assess and compare the oral hygiene and dental caries status in individuals diagnosed with schizophrenia and the general population in Lucknow city & to assess the prevalence and severity of dental caries in individuals diagnosed with schizophrenia in comparison to the general population.

Materials & Methods: A Cross-sectional study was done to compare oral hygiene and dental caries between schizophrenia patients and the general population attending a dental college outpatient department in Lucknow city. 50 participants each of Schizophrenia patients and general population attending dental college OPD were recruited as the sample. Ethical permission to conduct the study was obtained from Institutional Ethical Committee. The data tabulated in Microsoft Office Excel 2010 were analyzed using Statistical Package for Social Sciences or SPSS software (IBM SPSS Statistics for Windows, Version 22.0, Armonk, NY: IBM Corp. Released 2013).

Result: The findings revealed that the schizophrenia patient group exhibited higher scores in oral hygiene indices compared to the general patient group. The Debris Index Simplified (DIS), Calculus Index Simplified (CIS), and Oral Hygiene Index Simplified (OHIS) were all significantly elevated in the schizophrenia population, indicating poorer oral hygiene practices.

Conclusion: Higher DI-S, CI-S, OHI-S, and DMFT in schizophrenia patients were observed as compared to the general population.

Keywords: *Oral, Health, Schizophrenia, Caries, Hygiene*

1. INTRODUCTION

Schizophrenia is a complex and severe mental disorder characterized by disruptions in thought processes, emotions, and behaviours. The term itself, originating from Greek roots, reflects the condition's nature— a split (schizo) from reality (phrenia). Individuals with schizophrenia may experience hallucinations, hearing voices, and delusions where they believe others are controlling their thoughts or plotting harm against them. The disorder often manifests in the age group of 15-35 years, affecting approximately 7 per 1000 adults globally.[1] Factors contributing to the risk of developing schizophrenia include genetic predisposition, with a higher likelihood for individuals with first-degree relatives affected.[2] The interplay of neurotransmitters like dopamine and glutamate in the brain is also considered a factor in schizophrenia. Other contributing factors may include experiences of abuse or trauma.[3]

The disorder has historical roots in Indian medicine, dating back over 3300 years, with significant studies conducted by organizations like the Indian Council of Medical Research (ICMR) contributing to the understanding of its prevalence in different regions.[4] One of the major concerns in managing schizophrenia is the challenge of non-compliance to medication, with about 40% of individuals discontinuing treatment within the first year. Compliance is influenced by various factors, including the type of psychopathology, insight, and family support.[5]Symptoms of schizophrenia can be broadly categorized as positive, negative, and cognitive. Positive symptoms involve psychotic behaviours, while negative symptoms are associated with disruptions to normal emotions and behaviours. Cognitive symptoms may include difficulties with memory and decision-making.[6]

Oral health issues are prevalent among individuals with schizophrenia, with teeth becoming incorporated into delusions and hallucinations. Factors like self-mutilation behaviours and somatic delusions about oral pain can lead to unnecessary dental treatments. Poor oral hygiene is common among those with schizophrenia, exacerbated by factors like dry mouth, a side effect of many psychotropic medications.[7] The present study aims to address this gap by comparing the oral health status between hospital outpatients and institutionalized individuals with schizophrenia in Lucknow city, Uttar Pradesh.

2. MATERIALS & METHODS

This cross-sectional study aimed to compare oral hygiene and dental caries in schizophrenia patients with a general patient population in Lucknow City. The duration of the study was 6 months from –January 2024 to July 2024 . The study included two groups: schizophrenia patients and general patients. The schizophrenia group comprised individuals diagnosed with schizophrenia aged 18 years and above. The general patient group consisted of individuals without systemic diseases and not taking psychotropic drugs. Individuals who were diagnosed with Schizophrenia were included in the study. Uncooperative individuals were excluded from the study.

Ethical approval was obtained from the Institutional ethical committee. Informed consent was obtained from all participants, ensuring confidentiality and voluntary participation. A convenient sampling method was employed. Fifty patients with schizophrenia attending the Psychiatric clinics of Lucknow city were compared with 50 individuals from the general population attending the OPD of Dental Hospital, Lucknow.

Dental status was assessed using the decayed, missing, and filled teeth (DMFT) index according to the World Health Organization (WHO) criteria.

Before starting with the procedure, the purpose of the study was clearly explained to the participants and to their legally authorized representatives and written informed consents was obtained from them. Along with taking their demographic data, their Oral health status is assessed by taking OHI-S and DMFT Indices. The data tabulated in Microsoft Office Excel 2010 were analyzed using Statistical Package for Social Sciences or SPSS software (IBM SPSS Statistics for Windows, Version 22.0, Armonk, NY: IBM Corp. Released 2013).

Descriptive statistics were performed to characterize the sample and demonstrate the distribution of OHI-S and DMFT Indices items. Independent ‘t’ test was applied to find significant differences between debris index, calculus index, oral hygiene index simplified and decayed-missing-filled teeth index between schizophrenic patients and general population. Level of significance was fixed at 5% (α=0.05).

3. RESULT

This cross-sectional study aimed to compare oral hygiene and dental caries in schizophrenia patients with the general patient population attending the OPD of a dental college in Lucknow City. The study included a total of 100 participants, divided into two groups: schizophrenia patients (n = 50) and general patients (n = 50). The demographic characteristics, including age and gender distribution, were comparable between the two groups.

The findings revealed that the schizophrenia patient group exhibited higher scores in oral hygiene indices compared to the general patient group. The Debris Index Simplified (DIS), Calculus Index Simplified (CIS), and Oral Hygiene Index Simplified (OHIS) were all significantly elevated in the schizophrenia population, indicating poorer oral hygiene practices.

Oral Hygiene Index Simplified (OHIS): The OHIS scores were significantly elevated in schizophrenia patients (0.7328 $\pm$ 0.20962) compared to general OPD patients where the mean OHIS is 0.2938 $\pm$ 0.17737 signifying compromised oral hygiene as seen in Table 1 ($p<0.001$).

Index	Group	N	Mean	Std. Deviation	Std. Error	‘t’ statistic	df	P value
Debris Index Simplified	Schizophrenia	50	2.1600	.73845	.10443	10.235	98	<0.001
	General OPD	50	.7600	.62466	.08834			

Calculus Index Simplified	Schizophrenia	50	1.8800	.74615	.10552	4.940	98	<0.001
	General OPD	50	1.0200	.97917	.13848			
Oral Hygiene Index Simplified	Schizophrenia	50	.7238	.20962	.02965	11.073	98	<0.001
	General OPD	50	.2938	.17737	.02508			

Table 1: Comparative assessment of debris, calculus and oral hygiene index between the groups.

Dental caries, assessed using the DMFT index, was found to be significantly higher mean (2.78 ± 0.61) in the schizophrenia patient group compared to the general patient group. The DMFT scores indicated a greater prevalence of decayed, missing, and filled teeth in individuals diagnosed with schizophrenia as seen in Table 2.

Group	N	Mean	Std. Deviation	Std. Error	't' statistic	df	P value
Schizophrenia	50	2.7800	.61578	.08708	7.060	98	<0.001*
General OPD	50	1.7800	.78999	.11172			

Table 2: Comparative assessment of DMFT index between the groups

The results of this study emphasize a substantial association between schizophrenia and compromised oral health. Schizophrenia patients exhibited higher debris and calculus indices, poorer oral hygiene, and increased dental caries compared to the general patient population attending the dental college's OPD in Lucknow City.

4. DISCUSSION

Oral health is an integral part of health care. Psychiatric patients, especially during period of their hospitalization, are likely to constitute a high-risk group of individuals with respect to prevalence of oral diseases and may require special attention. Factors such as the nature of psychiatric disorders, length of stay and oral-side effects of psychotropic drugs have been noted as contributors to poor oral health among institutionalized chronic psychiatric patients. In addition, unhealthy behaviors, such as smoking cigarettes, alcohol consumption and illicit drug use have been linked to psychiatric disorders.[8,9]

The results of a study conducted outside the United States among patients whose age range was broad revealed similarly poor dental health among those with schizophrenia.[10] The only study of older adults with schizophrenia focused on patients receiving inpatient treatment in South Wales by Lewis and colleagues who found that patients had similar levels of caries than that in the general population but more missing teeth.[11] In a middle-aged population of patients receiving long-term psychiatric treatment in a Hospital in Israel (mean age, 54years), Ramon and colleagues[12] reported higher rates of caries and more missing teeth than those in a healthy sample; age was associated with more caries, and duration of Hospitalization was associated with fewer teeth. The results of a recent study of older patients receiving psychiatric treatment in England— 15% of whom had psychotic illness—indicated that lower cognition was associated with a greater need for dental care.[13]

The majority of patients with schizophrenia take psychotropic medications on a regular basis. Relevant medications include conventional and atypical antipsychotics, benzodiazepines and anti parkinsonians. Psychotropic medications can contribute to dental caries in patients with schizophrenia, as many of them caused dry mouth due to reduced salivary flow. An American study[14] showed that 99% of smooth surface caries (coronal and root) was associated with low salivary flow. Root surface caries, generally associated with older populations, were notably high in a group of young psychiatric patients with schizophrenia. Patients with schizophrenia had the highest incidence of symptoms of oral dryness. These findings were confirmed by another study in Israel, where 94% of inpatient study subjects were taking psychotropic medications and 22% reported experiencing dry mouth.[15]

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5. CONCLUSION

Debris Index Simplified (DI-S), Calculus Index Simplified (CI-S), Oral Hygiene Index Simplified (OHI-S), Decayed Missing Filled Teeth (DMFT) were the indices used. Higher DI-S, CI-S, OHI-S, and DMFT in schizophrenia patients were observed as compared to the general population. Hence it is recommended to create oral health education programmes that are specially designed for people with schizophrenia in psychiatric care settings ,addressing any barriers for maintaining proper oral hygiene.

LIMITATION

The cross-sectional nature of the study provides a snapshot at a single point in time, limiting the ability to establish causal relationships between variables or assess changes over time. There may be a potential for selection bias, as participants were recruited from a specific location (Lucknow City). This may limit the generalizability of findings to other populations. The sample size may not be large enough to detect subtle differences in oral health between schizophrenia and general patients, especially if the conditions are relatively rare. Schizophrenia is a heterogeneous disorder, and patients may vary in the severity of symptoms, medication adherence, and overall health. These variations could affect the generalizability of findings.

REFERENCES

[1] Jablensky A. The diagnostic concept of schizophrenia: its history, evolution, and future prospects. Dialogues Clin Neurosci. 2010;12(3):271-87.

[2] Loganathan S, Murthy RS. Living with schizophrenia in India: gender perspectives. Transcult Psychiatry. 2011 Nov;48(5):569-84.

[3] McCutcheon RA, Krystal JH, Howes OD. Dopamine and glutamate in schizophrenia: biology, symptoms and treatment. World Psychiatry. 2020 Feb;19(1):15-33.

[4] Charlson FJ, Ferrari AJ, Santomauro DF, Diminic S, Stockings E, Scott JG, McGrath JJ, Whiteford HA. Global Epidemiology and Burden of Schizophrenia: Findings From the Global Burden of Disease Study 2016. Schizophr Bull. 2018 Oct 17;44(6):1195-1203.

[5] Haddad PM, Brain C, Scott J. Nonadherence with antipsychotic medication in schizophrenia: challenges and management strategies. Patient Relat Outcome Meas. 2014 Jun 23;5:43-62.

[6] Correll CU, Schooler NR. Negative Symptoms in Schizophrenia: A Review and Clinical Guide for Recognition, Assessment, and Treatment. Neuropsychiatr Dis Treat. 2020 Feb 21;16:519-534.

[7] Jovanović S, Milovanović SD, Gajić I, Mandić J, Latas M, et al. (2010) Oral Health Status of Psychiatric in-patients in Serbia and implications for their dental care. Croat Med J. 51: 443–450.

[8] Cormac I, Jenkins P. Understanding the importance of oral health in psychiatric patients. Advances in Psychiatric Treatment,1990;(5):53-60

[9] Kaakko T., Coldwell S.E.,Getz T., etal. Psychiatric diagnoses among self-referred dental injection phobics. Journal of Anxiety Disorders, 2000; 14:299–312.

[10] Velasco E, Machuca G, Martinez-Sahuquillo A, Rios V, Lacalle J, Bullon P. Dental health among institutionalized psychiatric patients in Spain. Special Care in Dentistry,1997; 17(6):203-206.

[11] Almomani, F., Brown, C. &Williamns, K.B. The effect of an oral health program for people with psychiatric disabilities. Psychiatric Rehabilitation Journal, 2006; 29(4):274-81

[12] Friedlander, A., & Marder, S. The psychopathology, medical management and dental implications of schizophrenia. Journal of the American Dental Association (JADA), 2002; 133(5): 603.

[13] Nielsen J., Munk-Jorgensen P., Skadhede S., Correll C.U. Determinants of poor dental care in patients with schizophrenia: a historical, prospective database study. Journal of Clinical Psychiatry, 2011; 72(2):140-3.

[14] Stiefel DJ, Truelove EL, Menard TW, Anderson VK, Doyle PE, Mandel LS. A comparison of the oral health of persons with and without chronic mental illness in community settings. Spec Care Dent. 1990;10:6–12.

[15] Ozbilen M, Adams CE, Marley J. Anticholinergic effects of oral antipsychotic drugs of typicals versus atypicals over medium- and long-term: Systematic review and meta-analysis. Curr Med Chem 2012;19:5214-5218.