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**ASSESSING ORAL HEALTH PROBLEMS OF PSYCHIATRIC PATIENTS' AT FEDERAL NEUROPSYCHIATRIC HOSPITAL ENUGU, NIGERIA.**

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**ABSTRACT:** *Oral health serves as a gateway to overall physical and psychological well-being, influencing various aspects of life including appearance, speech, chewing ability, growth, enjoyment, taste perception, and social interaction. Mental illness is intricately linked with physical health, and the concepts of oral health and mental health are inseparable. Individuals living with mental illness often experience cognitive impairments that can lead to lower prioritization of both physical and oral hygiene, resulting in oral health issues. This study aimed to assess the specific oral health problems faced by psychiatric patients. Using a cross-sectional descriptive design, the study examined sixty-two inpatients admitted at Federal Neuropsychiatric Hospital in Enugu. There was no sample size and sampling technique because the population was small and manageable. The majority of patients were male (54.84%), with the most common age group being 25-30 years old (23.73%). Schizophrenia was the most prevalent diagnosis among patients (60%), followed by substance use disorder (28.26%). The most common oral health problems observed were dental calculus (78.81%), dental caries (70.97%), and gingivitis (33.87%). Patients identified poor brushing habits as the leading cause of oral health problems (56.5%), with the majority reporting brushing only once a day (79.03%). The study found a significant relationship between oral health problems and psychiatric diagnosis ( $\chi^2 = 28.369$ ). Recommendations include fostering collaboration among healthcare professionals, including nurses, psychiatrists, and dental professionals, to address the oral health needs of psychiatric patients. In conclusion, the study emphasized that oral health problems are prevalent among psychiatric patients due to cognitive impairments, highlighting the importance of integrated healthcare approaches in addressing their unique oral health challenges.*

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**Keywords:** *Psychiatric patients, Oral health, psychiatric professionals*

## Introduction

Depression, anxiety, bipolar disorder, dementia, alcohol and drug use disorders, and schizophrenia are among the most common mental health conditions. The relationship between oral health and mental health is complex. When the natural balance of bacteria in the mouth is disrupted, harmful microorganisms can spread throughout the body, triggering systemic inflammation. This inflammatory response may, in turn, affect the brain, exacerbating mental health conditions and conversely, mental disorders can worsen oral health outcomes (Skallevold et al., 2023). The deteriorating physical well-being of individuals living with severe mental illness has drawn increasing attention, particularly regarding chronic conditions such as diabetes, cardiovascular disease, chronic lung disease, and cancer. However, oral health remains comparatively underemphasized, despite its critical role in overall wellness and its association with many of these chronic illnesses. Poor oral health can also affect essential functions like eating and speech, and negatively influence social engagement and psychological well-being (Skallevold et al., 2023).

Oral health is an essential component of general health and overall well-being (Centers for Disease Control and Prevention [CDC], 2021). It refers to the state of the mouth, teeth, and facial structures that enables individuals to perform vital functions such as eating, breathing, and speaking. It also encompasses mental and emotional aspects, influencing self-esteem and the ability to engage in social and professional life without discomfort or embarrassment (World Health Organization [WHO], 2021). Despite this, oral diseases continue to be a major global public health concern, affecting over 3.5 billion people (WHO, 2022). In high-income countries, dental care is often technologically advanced and treatment-focused but does little to address the underlying causes of disease or oral health inequalities. In low- and middle-income countries (LMICs), dental services remain largely inaccessible and unaffordable, particularly for rural populations. Rather than existing in isolation, dentistry needs to be integrated into primary health care systems, and the movement toward universal health coverage offers a valuable opportunity to achieve this shift and promote oral health equity (Watt et al., 2019).

The link between psychiatric disorders and dental health has historically received limited attention, despite clear evidence of its impact. Individuals with mental illness are especially vulnerable to dental diseases due to factors such as difficulty managing daily routines, limited access to dental services, medication side effects, and lifestyle behaviors like alcohol and tobacco use (Kisely, 2023). Literature shows that individuals with severe mental illness are at higher risk of oral health problems due to poor nutrition and hygiene, heavy consumption of sugary drinks, comorbid substance misuse, and various barriers to accessing dental care (Skallevold, 2023).

Although oral health has improved in many populations, individuals with mental health conditions have not experienced equal progress. Approximately 20% of the global population lives with a mental

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health disorder, and this group faces increased exposure to oral health risk factors (Kuipers et al., 2018; 2021). This disparity underscores the importance of targeted oral health interventions for people with mental illness. In both the general population and among individuals with mental health conditions, poor oral health significantly affects quality of life and daily functioning. This highlights the need for early intervention strategies, particularly from nurses and mental health professionals, who play a pivotal role in improving outcomes through education and care (Kuipers et al., 2021).

Many individuals with mental disorders take medications such as antipsychotics, antidepressants, and lithium, which can cause dry mouth, increasing plaque buildup and the risk of decay. Additionally, a preference for sugary snacks and drinks, coupled with insufficient self-care, poor motivation, and infrequent oral hygiene practices, further exacerbates oral health problems. Halitosis (bad breath) also contributes to low self-esteem, social withdrawal, and worsening mental health symptoms, including depression and suicidal ideation (Beck, 2025; Kuipers et al., 2021). Patients with severe mental illness, such as schizophrenia or bipolar disorder, are nearly three times more likely to have lost all their teeth compared to the general population, emphasizing the significant burden of poor oral health in this group (Kuipers et al., 2021).

Given these realities, consistent and effective oral hygiene practices are vital for preserving health and dignity in both inpatient and outpatient settings. Mental health caregivers, particularly nurses, are in a unique position to support this aspect of care. They must recognize oral health as an integral component of holistic treatment for individuals with mental health disorders (Johansson, 2025; Kuipers, 2021).

## **MATERIALS AND METHODOS**

### **Research Design**

The study adopted a descriptive cross-sectional survey which sought to investigate oral health problems associated with psychiatric patients' in Federal Neuropsychiatric Hospital, Enugu.

### **Description of the study Area**

The study was conducted at the Federal Neuropsychiatric Hospital, Enugu (FNHE) in Enugu State. FNHE is located on Ituku Street, off Chime Avenue, New Haven, in the Enugu North Local Government Area. The hospital is opposite St. Mulumba Catholic Church, New Haven, and adjacent to Cordial and Nondon Hotels, Enugu. FNHE serves as a national and regional mental health resource center and is recognized as the apex psychiatric facility in Nigeria. The hospital comprises ten (10) wards and five (5) specialized units, including: Emergency Ward, Acute Male and Sub-acute Male Ward, Acute Female and Sub-acute Female Ward, Extension Ward (including Substance Abuse Ward), Electroconvulsive Therapy Unit, Occupational Therapy Unit, Pharmacy Unit, and Outpatient Department (OPD). FNHE is a renowned center for treating behavioral disorders. Additionally, it features occupational therapy units where patients receive vocational training to facilitate their reintegration into society (deinstitutionalization). Furthermore, FNHE houses

the School of Post-Basic Psychiatry and Mental Health Nursing, which trains nurses specializing in mental health and psychiatric nursing.

### **Population for Study/ sample size/sampling technique**

According to the nurses' admission ward roaster, the population of patients' for the study comprised 75 patients admitted in FNHE within the time of the study. There was no sample size for the study as patient population under observation were limited (75) and were managed appropriately. However, not all patients agreed to participate in the study leaving the researcher with only 62 patients. There was no sampling technique as all patients (62) that agreed to participate in the study were used. The instrument for data collection was researchers developed checklist for measuring dental health problems and researcher's self-constructed questionnaire on the causes and pattern of oral health hygiene. The instruments are DMFT criteria for checking dental caries, Calculus criteria and Criteria for Gingiva. The data collection comprised of 2 main sections, section A contained the demographic characteristics of the participants while section B contained the researcher's checklist which contained the research objectives. The researcher maintained confidentiality by ensuring anonymity and no information could be traced to the patients whom participated in the study.

### **Research Instrument and Administration**

A checklist and a questionnaire was used for this study and it was based on the three research objectives. The instrument had two major aspects: first part was the section which described the demographic variables of the participants while the other was about the research objectives. The researcher and three research assistants were recruited and instructed on the purpose of the research. The researcher and assistants observed with the check list for common types of oral health problems whereas other two objectives causes and practices of oral hygiene were obtained by the questionnaire. The participants were also enlightened on the purpose of the study and their maximum cooperation was obtained.

### **Reliability of Instrument**

Reliability test was done using using convenient correlation Cronbach's Alpha of 0.95, which implied that the instrument was reliable for the study.

### **Method of Data Collection**

A letter of introduction was collected from the Head of the Department Dental Nursing, which was used to obtain ethical clearance for FNHE having written a proposal with instrument of data collection in order to gain access to the patients. Researcher discussed the aim of the study to patients who can comprehend and to caregivers of patients who could not assimilate the instructions. Patients consent was sought both in written form and orally before dental examination. The researcher used three research assistants' final year dental therapy students whom have completed their clinical posting as students. They were briefed about the aims of the study. Collection of data took two week to

be completed as the patients were approached on their non-consulting days. Face masks, hand gloves, lab coats, wooden spatula and biros were all used for data collection.

## Method of Data Analysis

The data was analysed using frequency and percentages. Chi square distribution was used to find the relationship between oral health problems and psychiatric diagnosis.

## Test of Hypothesis

$$\text{Test Statistic: } \chi^2 = \sum \frac{(O-E)^2}{E}$$

Where:  $\chi^2$  = Chi Square calculated value

O = Observed Values

E = Expected Values

## RESULTS

**Table 1: Demographic Variable of the Participants** N=62

Demographic Data	Freq.	%
<b>Gender</b>		
Male	34	54.84
Female	28	45.16
<b>Age</b>		
19-25	9	15.25
25-30	14	23.73
31-35	11	18.64
36-40	8	13.56
41-45	5	8.475
46-50	4	6.78
51-55	6	10.17
56-60	2	3.39
<b>Marital Status</b>		
Married	17	30.36
Single	38	67.86
Divorced	1	1.786
Separated	0	0
Widowed/Widower	0	0
<b>Diagnosis</b>		
Substance use Disorder	13	28.89
Schizophrenia	27	60
Mood Disorder (Depression)	5	11.11

## Duration of Psychiatric Illness

2016 and below	3	6.522
2017	1	2.174
2018	0	0
2019	1	2.174
2020	2	4.348
2021	6	13.04
2022	5	10.87
2023	13	28.26
2024	20	43.48

## Religion

Christianity	62	100
Islam	0	0
Traditional	0	0
Others	0	0

The majority of patients were male (54.84%), mostly aged 25–30 years (23.73%). Most were single (67.86%), and schizophrenia was the most common diagnosis (60%), followed by substance use disorder (28.89%) and mood disorder (11.11%). The highest number of diagnoses occurred in 2024 (43.48%). All patients were Christians.

## Research Question 1: What is the Common Oral Health Problems Associated with Psychiatric Patients’

**Table 2: Common Oral Health Problems**

Variable	Yes	%	No	%
<b>DMFT Index</b>				
D – Decayed	44	70.97	18	29.03
M – Missed	30	48.39	32	51.61
F- Filled	8	12.9	54	87.1

## Calculus Score Criteria

0: No Calculus Present	20	32.26	42	67.74
1: Supra gingival calculus not more than 1/3 of the exposed tooth surface	47	75.81	15	24.19
2: Supra gingival calculus more than 1/3 but not more than 2/3 of the exposed tooth surface or presence of individual flasks of sub gingival calculus around the cervical portion of the tooth	40	64.52	22	35.48

3: Supra gingival calculus covering more than 2/3 of the exposed tooth surface or a continuous heavy band of sub gingival calculus around the cervical portion of tooth or both 32 51.61 30 48.39

**Modified Gingival Index**

0: Normal	19	30.65	43	69.35
1: Mild inflammation, slight change in color, little change in texture of any portion of gingival unit	21	33.87	41	66.13
2: Mild inflammation of entire gingival unit	36	58.06	26	41.94
3: Moderate inflammation of gingival unit	17	27.42	45	72.58
4: Severe inflammation of gingival unit	11	17.74	51	82.26

Dental assessment showed that decayed teeth were present in about 21% of patients, while nearly half had missing teeth and only 12.9% had fillings. Calculus was common (67.74%), with varying levels of supra- and sub-gingival deposits. Fewer than one-third had a normal gingival index, with most showing some degree of inflammation mild localized (33.87%), generalized mild (58.06%), moderate (27.42%), or severe (17.74%).

**Research Question 2: What are the Causes of Oral Health Problems among psychiatric patients in FNHE**

**Table 3: Causes of Oral Health Problems**

Causes of Oral Health Problems	SA	%	A	%	D	%	SD	%
Consuming a lot of sugary foods	33	53.2	21	33.9	5	8.06	3	4.84
Poor brushing habits	35	56.5	21	33.9	4	6.45	2	3.23
Not rinsing the mouth after a meal	23	37.1	27	43.5	10	16.1	2	3.23
Smoking or the use of other tobacco	33	53.2	10	16.1	14	22.6	5	8.06
Those with family history of dental problems	25	40.3	11	17.7	20	32.3	6	9.68

Most patients recognized key causes of oral health problems. Over half strongly agreed that excessive sugary food intake (53.2%), poor brushing habits (56.5%), and smoking/tobacco use (53.2%) contribute to such problems. Many (43.5%) agreed that not rinsing after meals is a cause, while 40.3% strongly agreed that family history plays a role. Only a small proportion strongly disagreed with these factors.

## Research Question 3: What is the practise of Oral Health Hygiene among patients' in FNHE

**Table 4.4: Practice of Oral Hygiene**

Variable	Freq.	%
<b>When was the last time you visited a dentist?</b>		
Never	41	66.13
Once	10	16.13
Twice	6	9.68
Often	5	8.06
<b>How many times in a day do you wash your teeth?</b>		
Never	2	3.23
Once	49	79.03
Twice	11	17.74
Often	0	0.00
<b>How often do you change your toothbrush?</b>		
Every 3 months	25	40.32
Every 6 months	9	14.52
Every year	7	11.29
When necessary	21	33.87
<b>How long do you take for oral hygiene?</b>		
1 minute	13	20.97
2 minutes	6	9.68
More than 2 minutes	42	67.74
I don't know	1	1.61
<b>Do you use mouth wash?</b>		
Yes	16	25.81
No	46	74.19
<b>Do you use dental floss?</b>		
Yes	9	14.52
No	53	85.48

Most patients (66.13%) had never visited a dentist, and nearly four out of five (79.03%) brushed only once daily. While 40.32% changed their toothbrush every three months, about a quarter did so only when necessary, and 11.29% just once a year. Over two-thirds (67.74%) spent more than two minutes on oral hygiene, yet the majority did not use mouthwash (74.19%) or dental floss (85.48%).

**Hypothesis:** There is no relationship between oral health problems and psychiatric diagnosis.

**Observed Values**

Oral Health Problem	Psychiatric Diagnosis			Total
	Substance Abuse Disorder	Schizophrenia	Mood Disorder (Depression)	
Oral Problem	82	139	104	325
No Oral Problem	104	109	206	419
Total	186	248	310	744

**Table 4:**

$$\text{Expected Values (E)} = \frac{(\text{Row total}) \times (\text{Column Total})}{(\text{Overall Total})}$$

**Expected Values**

Oral Health Problem	Psychiatric Diagnosis			Total
	Substance Abuse Disorder	Schizophrenia	Mood Disorder (Depression)	
Oral Problem	81.25	108.33	135.42	325
No Oral Problem	104.75	139.67	174.58	419
Total	186	248	310	744

**Table 5:**

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

$$= 0.007 + 8.681 + 7.289 + 0.005 + 6.733 + 5.654$$

$$\chi^2 = 28.369$$

From the Chi-Square Table,

$$\chi^2_{\alpha}, (r - 1)(c - 1) = \chi^2_{0.05}, (2 - 1)(3 - 1) = \chi^2_{0.05}, 2 = 5.991$$

Since  $\chi^2 = 28.369 > \chi^2_{\alpha} = 5.991$ , we reject the null hypothesis and conclude that there is a relationship between oral health problems and psychiatric diagnosis.

The 5 above showed there was a relationship between psychiatric diagnosis and oral health problems.

## DISCUSSION

The purpose of the study was to assess oral health problems that is associated with those living with mental illness and that is admitted into Federal Neuropsychiatric Hospital, Enugu. The researcher used a self- structured questionnaire to ascertain the demographic variables of the patients, the causes of oral health problems and oral health hygiene practices among the psychiatric patients. However, a structured checklist for measuring oral health problems were employed for dental caries (DMFT), calculus and gingival index. Patients' oral health problems were determined using indices for obtaining information based on oral health problems. The result of the study indicated a high percentage of patients having dental caries with a total of 44(20.97%) as decayed, 30(48.39%) as missing and only 8 (12.9%) had their teeth filled. This study is in line with the findings of Yang *et al.*, (2021) which revealed poor oral hygiene among inpatients diagnosed with schizophrenia with DMFT criteria of  $12.99 \pm 8.86$ .

Another study by Choi *et al.*, (2021) coincides with the present study which used meta-analysis to determine the prevalence of dental disorder among mental illness. The result of the study revealed that those with severe mental illness had the odds of nearly three times to lose their teeth than the general community.

The state of the oral status of these patients were not found without calculus being present as only 20 (32.26%) out of the 62 did not having calculus. That is to say that majority of them 42 (67.74%) had calculus in their mouth which represented both supra gingival and sub gingival. This is in agreement with Yaseen *et al.*, (2020) in their quest to investigate dental caries among mental patients in kerbala Iraq. The result showed that 50% of the results they got had patients with dental calculus. In addition 80% of the patients had xerostomia while 42% had dental caries with significant number being females (85%) and males (42%).

In measuring gingival index, only 19 (30.65%) were normal, majority of the patients 43 (79.35%) were not normal and 21 (33.87%) had slight inflammation. Mild inflammation was 36 (58.06%), moderate inflammation was 45 (72.58%) and 11 (17.74 %) had severe inflammation. This study is in agreement with the study carried out by Carra *et al.*, (2017) to investigate the relationship between sleep disorders (SDs) and oral health. Per se sleep disorders are not seen as severe mental illness but it has effect on mental health of individuals who suffer it. The study revealed a heightened risk of gingival inflammation amongst people who suffer from sleep disorders.

A good number of patients agreed that the consumption of sugary foods is the causation of oral health problems. This is in agreement with the literatures that were reviewed for the study that poor oral hygiene, smoking of tobacco products, consuming sugary foods, genetics , and not rinsing after meal causes oral health problems (Bekzod, 2025; Gasner & Shure, 2023).

The practice of oral hygiene where the result revealed majority of not having visited a dentist in their life time 41(66.13%), 10 (16.13 %) visited once, 6(9.68) visited twice and only 5 (8.06) visited often.

Practice of oral hygiene revealed majority of the patients brushed only once 49 (79.03) as against the twice recommended by dentists. Changing of tooth brush was quiet high as majority 25 (40.32) concurring the change of tooth brush every 3 month. The use of mouth wash was a no for almost all the respondents as 46 (74.19) of them does not have knowledge of mouth wash. This is in contrary to this study for the literatures reviewed on mouth wash as an antibacterial agent used to maintain oral cavity (McGrath et al., 2023). The majority of the patients 53 (85.8%) do not use dental floss which removes debris from the gaps between the teeth and it is effective in reducing build-up of plaque thereby decreasing the chances of one getting gingivitis.

Assessing oral health problems among the mentally ill admitted in Federal Neuropsychiatric Hospital has an important implication to nurses. Nurses are the custodians of the ward and usually the first point of contact when patients come to the hospital. Aside the vital signs taking as an addition in the early hours of admission and subsequently, they play a crucial role in the holistic care of the mentally ill patients including monitoring their overall health status. Understanding oral health problems among this population allows nurses to provide a comprehensive care, identifying issues early and facilitating appropriate referrals to dental professionals. It is pertinent to know that some oral health problems can be a sign of systemic diseases which may complicate the health of the patients if not adequately handled. Some other oral health issues can be a risk factor for other diseases if not properly handled, so it is important that nurses know how to assess common oral health problems associated with this group of people. Nurses can educate mentally ill individuals about oral hygiene practices and the importance of regular dental check-ups, promoting preventive care and improving oral health outcomes. Nurses measuring in dental oral nursing can also be sent to psychiatric hospitals from time to time to check the oral health needs of the patients.

Sampling bias may affect this study being that only sixty two (62) patients' oral cavity was examined during the course of the study and it all came from a particular hospital i.e FNHE. This study may not be generalizable to all mentally ill individuals due to the demographics that was used or the specific diagnosis. This study only had three main psychiatric diagnosis which majority were schizophrenia, followed by substance use disorder and mood disorder. Other psychiatric illnesses were not captured. There may have been self –reporting biases as some patients over reported their use of tooth brushes. Some reported they change brushes every week, this may be due to factors such as cognitive impairment.

Measurement Errors which could be seen in oral health assessment methods such as inconsistencies in diagnostic criteria or variations in data collection techniques could affect the accuracy and reliability of study findings. It is pertinent to note that all oral health assessment were not done especially periodontal assessment which will involve dental probe. The researcher feared the patients cannot handle such instrument in such environment so it was skipped.

## Conclusion

In conclusion, this study sheds light on the significant oral health challenges faced by psychiatric patients, highlighting the urgent need for targeted interventions within psychiatric care settings. Through comprehensive assessments, we have identified a high prevalence of oral health issues among this vulnerable population, including dental caries, periodontal disease, and poor oral hygiene. These findings underscore the intricate relationship between mental health and oral health, emphasizing the importance of addressing oral health as an integral component of holistic healthcare for psychiatric patients. Factors such as medication side effects, inadequate self-care practices, socioeconomic disparities, and limited access to dental care services contribute to the observed oral health disparities among psychiatric patients.

Recognizing the impact of oral health problems on the overall well-being and quality of life of psychiatric patients is essential. This study advocates for interdisciplinary collaboration among healthcare providers, including psychiatrists, nurses, and dental professionals. By integrating oral health assessments and interventions into psychiatric care protocols, we can mitigate the negative consequences of oral health issues and improve the overall health outcomes and quality of life of psychiatric patients.

Moving forward, further research is warranted to deepen the understanding of the complex interplay between mental health and oral health and to develop targeted strategies for preventive care and treatment interventions tailored to the unique needs of psychiatric patients. By addressing oral health problems within psychiatric care settings, we can advance towards more comprehensive and holistic healthcare approaches that prioritize the well-being of all individuals, including those with mental health conditions.

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## Competing Interest

The authors have no interest in competition.

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## Ethical Approval:

Ethical approval with reference No: FNHE/HTR/REA/VOL.11/101 was obtained from the Ethics and Research Committee of Federal Neuropsychiatric Hospital, Enugu.

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