

# A Study on the Oral Health Status of Long-term Inpatient Psychiatric Patients and Management Strategies

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**Abstract:** To assess the oral health status of patients with mental disorders and develop scientifically sound oral health management plans along with practical nursing interventions, this study conducted a systematic questionnaire survey among 225 long-term inpatients at a psychiatric hospital in Nanjing. The survey covered basic information, existing oral health issues, oral hygiene habits, and lifestyle factors. Based on the findings, the primary issues stem from the nature of the illness itself, medication side effects, and insufficient systemic support. Given that most patients at this hospital are long-term psychiatric inpatients with prolonged disease duration and extended hospitalization periods, oral health problems are prevalent. Addressing oral health issues should be prioritized, particularly for patients with severe tooth loss. Measures such as health education lectures, enhanced nursing care, regular oral examinations, and timely treatment should be implemented to help patients develop good oral hygiene habits. This will improve their oral health status and safeguard their physical and mental wellbeing.

**Keywords:** Hospitalized psychiatric patients, Oral health status, Countermeasure research

## 1. Introduction

Mental disorders refer to syndromes characterized by significant clinical abnormalities in cognition, emotional regulation, or behavior. These conditions are typically accompanied by marked distress or impairment in social functioning, severely affecting performance in social, occupational, or other important domains. For example: individuals with depression experience pronounced pathological depressive symptoms; Alzheimer's disease presents with characteristic cognitive impairment; anxiety disorders involve significant anxiety or intense panic experiences, substantially impacting patients' social functioning. The primary characteristics of Attention-Deficit/Hyperactivity Disorder (ADHD) in children are inattention or hyperactivity. Its etiology is complex, involving the interaction of biological, psychological, and social factors such as genetic variations, brain dysfunction, traumatic experiences, or environmental stressors. Individuals with mental illnesses exhibit impaired cognitive function. Antipsychotic medications provide some therapeutic relief but may simultaneously compromise oral health.

Previous studies indicate<sup>[1]</sup> that individuals with severe mental illness are 50 times more likely to develop periodontal disease than the general population (N=482). The causes of these outcomes can be attributed to poor daily habits among those with severe mental illness, side effects of psychiatric medications, neglect of oral health importance, and refusal of dental care services, ultimately leading to complete tooth loss.

The importance of oral health is self-evident, primarily reflected in the following aspects: impact on overall health, influence on quality of life, risk of preterm birth and low birth weight infants, effects on childhood growth and development, and associations with multiple diseases<sup>[2]</sup>. First, oral health is closely linked to systemic health. Infection and inflammatory factors in the oral cavity may trigger or exacerbate chronic conditions like cardiovascular disease and diabetes, jeopardizing overall health and diminishing quality of life. For instance, periodontal disease correlates with cardiovascular disorders, as oral bacteria can enter the bloodstream, provoke inflammatory responses, and elevate risks of heart disease and stroke. Additionally, oral health issues may impair digestive system function, leading to malabsorption of

nutrients. Second, oral health issues can cause social and psychological problems. Dental caries and periodontal disease not only affect functions like chewing, speech, and aesthetics but may also lead to difficulties in social interaction and psychological disorders<sup>[3]</sup>. For instance, missing teeth or severe cavities can cause feelings of inferiority, affecting social activities and career development, while oral pain may impact eating and daily activities<sup>[4]</sup>. Finally, oral health correlates with numerous systemic diseases. Beyond cardiovascular diseases and diabetes mentioned earlier, oral conditions are linked to respiratory infections, gastrointestinal disorders, rheumatoid arthritis, and kidney disease. Oral health is intrinsically connected to overall well-being, as bacteria from the oral cavity can enter the bloodstream through periodontal pockets and spread to other body systems, potentially triggering or exacerbating systemic diseases like cardiovascular disorders and diabetes. <sup>[5]</sup> Therefore, maintaining oral health is a crucial measure for preventing and managing these conditions.

Currently, most psychiatric hospitals in China are specialized institutions with a shortage of dental professionals. This leads to delayed resolution of oral health issues among long-term inpatients, severely impacting their physical and mental well-being. This study investigates the oral health status and related circumstances of such patients to develop tailored oral care strategies based on their specific characteristics.

## 2. Materials and Methods

### 2.1 Survey Participants

Selection criteria for questionnaire respondents:

- ① Psychiatric patients hospitalized for over 3 months;
- ② Aged 16 years or older;
- ③ With normal intellectual function, the individual is able to communicate adequately and cooperate with data collection.

### 2.2 Research Methods

Employing a questionnaire survey method, supplemented by a review of the patients' relevant medical records.

#### 2.2.1 Survey Tools

(1) A self-developed general information questionnaire was used to collect data on patients' gender, age, educational background, dietary habits, toothbrushing habits, frequency of brushing, duration of brushing, brushing times, use of other oral hygiene products, toothpaste usage, and flossing frequency.

(2) Review of patients' medical records provided insights into disease progression, medication history, and other relevant conditions.

#### 2.2.2 Survey Implementation

Basic survey content primarily includes: name, gender, age, educational level, oral health status (dental caries, bleeding gums during brushing, tooth pain, etc.), and oral health behaviors (brushing technique, frequency, duration, professional cleaning frequency, etc.).

All questionnaires were completed by nursing staff familiar with patients' conditions within the ward, tailored to each patient's current status, targeting psychiatric patients for the study. Quantitative data were analyzed using descriptive statistics (frequency, percentage) with SPSS 20.0 software.

### 2.3 Evaluation Indicators

Oral health status of survey subjects is assessed to facilitate evaluation.

## 3. Results

The questionnaire survey selected 225 patients from four wards. Among them, 91 were male (40.44%) and 144 were female (59.56%). Regarding educational attainment: 27 had no formal education (12%), 36 had completed elementary school (16%), 86 had completed junior high school (38.22%), and 76 had

completed high school or higher (33.78%). Regarding smoking status: 22 participants had quit smoking (9.78%), 29 were current smokers (12.89%), 172 were non-smokers (76.44%), and 2 were unknown (0.89%). Eating habits were reported as: 32 students had average eating habits, accounting for 14.22%; 6 students had poor eating habits, accounting for 2.67%. Basic information of the research subjects is presented in Table 1, including key demographic data and background details relevant to the study.

According to survey data, among 225 patients, 68.0% (153 individuals) experienced tooth loss, with severe loss ( $\geq 5$  teeth) being the most prevalent at 38.7% (87 individuals). Meanwhile, 82.7% (186 individuals) had never undergone tooth extraction. Over the past year, only 14.67% (33 individuals) reported self-perceived oral health issues. The most common concern was dental calculus (39.39%), followed by dental caries, gingival bleeding, and halitosis (each at 15.15%). Notably, among those with oral issues, 87.88% (29 individuals) had never received any dental treatment, while only 12.12% (4 individuals) had sought care, primarily for fillings. Oral-related experiences of the participants, such as past dental treatments and oral health incidents, are summarized in Table 2.

Regarding oral hygiene habits, most patients brushed their teeth 1-2 times daily (totaling 88.45%), with brushing duration predominantly lasting 1-3 minutes (60.89%). Over 80% of patients habitually brushed in the morning. Regarding toothpaste selection, nearly half (49.78%) reported being “indifferent,” while only 12.89% specifically chose fluoride toothpaste for caries prevention. Furthermore, a significant 88% of patients did not use any supplementary oral cleaning tools. Among those who did, mouthwash (9.33%) was relatively common, while the use of tools like dental floss and interdental brushes remained extremely low. Daily toothbrushing habits, including brushing frequency, duration, and preferred techniques, are detailed in Table 3.

Overall, this population exhibits a high rate of tooth loss but low awareness of seeking medical attention for oral issues. Daily oral care practices remain centered on basic brushing, lacking targeted preventive measures and the use of supplementary cleaning tools. The selection criteria and usage patterns of dental care products are illustrated in Table 4.

*Table 1 Basic Information*

Item	Category	Frequency	Percentage
Gender	male	91	40.44%
	female	144	59.56%
Educational attainment	uneducated	27	12%
	Elementary	36	16%
	Middle	86	38.22%
	High and above	76	33.78%
Smoking status	Have quit smoking	22	9.78%
	Smoke	29	12.89%
	Do not smoke	172	76.44%
	Not sure	2	0.89%
Eating Status	Good	187	83.11%
	Average	32	14.22%
	Poor	6	2.67%

*Table 2 Oral-related experiences*

Item	Category	Frequency	Percentage
Number of missing teeth	1-2 grain	34	15.11%
	3-4 grain	32	14.22%
	$\geq 5$ grain	87	38.67%
	0 grain	72	32%
Number of tooth extractions	0 time	186	82.67%
	1 time	24	10.67%
	$\geq 2$ time	15	6.67%
Oral health issues experienced over the past year	Existence	33	14.67%
	Non-existence	192	85.33%
Dental Treatment History Over the Past Year	Existence	4	12.12%
	Non-existence		

Table 3 Daily toothbrushing habits

Item	Category	Frequency	Percentage
Number of times brushing teeth	Once a day	105	46.67%
	Twice daily	94	41.78%
	More than twice daily	4	1.78%
	Unable to achieve an average of once per day	8	3.56%
Brushing duration	Never	14	6.22%
	Within 1 minute	71	31.56%
	One - three minutes	137	60.89%
	> three minutes	17	7.56%
Brushing time	Brushing teeth in the morning	183	81.33%
	Brushing teeth before bed at night	22	9.78%
	Brushing teeth after lunch	2	0.89%
	Brush teeth before important occasions.	0	0%
	Brush teeth after eating	5	2.22%
	Not brushing teeth	13	5.78%

Table 4 Selection and usage of dental care products

Item	Category	Frequency	Percentage
Toothpaste selection	Choose fluoride toothpaste for cavity prevention	29	12.89%
	For bleeding gums	8	3.56%
	For sensitive teeth with fresh breath	7	3.11%
	Use different brands in turn	69	30.67%
	Whatever	112	49.78%
Use other auxiliary tools and products for oral hygiene maintenance	Dental floss	2	0.89%
	Interdental brush	4	1.78%
	toothpick	0	0%
	Water flosser	0	0%
	Mouthwash	21	9.33%
	none	198	88%

#### 4. Discussion

In recent years, with the significant improvement in China's economic level, the health literacy and health awareness of the general population have continuously increased, leading to a noticeable enhancement in the oral health status of the general population. However, the oral health conditions of individuals with mental illnesses, particularly those undergoing long-term hospitalization, remain concerning. Addressing their oral health issues has become an urgent and critical challenge in clinical practice.<sup>[6]</sup> This study reveals the oral health crisis faced by the population of long-term hospitalized psychiatric patients. Key findings include: extremely high rates of tooth loss, widespread poor oral hygiene practices, and virtually non-existent use of auxiliary cleaning tools. Through these quantitative data, combined with concrete practical realities, the study exposes systemic and individual barriers to oral health management among long-term hospitalized psychiatric patients.

##### 4.1 The Severity of Oral Health Conditions and Multiple Influencing Factors

In this study, as many as 68.0% of patients experienced tooth loss, with a particularly high proportion (38.7%) exhibiting severe tooth loss ( $\geq 5$  teeth). Through an in-depth examination of the actual

circumstances, we identified multiple intertwined factors: First, the impact of the illness itself is fundamental. Cognitive impairment, lack of motivation, and reduced ability to care for oneself resulting from psychiatric symptoms directly lead to patients' inability to maintain oral hygiene. Second, treatment side effects cannot be overlooked. The common side effect of dry mouth from antipsychotic medications reduces saliva's protective and cleansing action on teeth, significantly increasing the risk of dental caries and periodontal disease. Finally, the long-term institutional setting and inadequate systemic support create external barriers. The absence of specialized oral healthcare services within hospitals and inefficient referral processes hinder the implementation of preventive care. Issues are often delayed until more invasive interventions (such as tooth extraction) become necessary. This may partly explain the seemingly contradictory findings in this study: a relatively low extraction rate (17.3%) coupled with an extremely high rate of tooth loss.

#### **4.2 Oral Health Practices: A Comprehensive Lack of Awareness, Habits, and Support**

Surveys indicate that nearly 10% of patients cannot guarantee brushing their teeth at least once daily, while the proportion using dental floss or interdental brushes is extremely low (<3%). Further investigation reveals that many patients lack even the most basic oral health knowledge, and some even exhibit confusion or resistance regarding "why brushing is necessary." This points to a severe deficiency in health education, highlighting the critical yet long-neglected aspect of "behavioral habit formation" in mental health management. Simultaneously, healthcare providers face practical challenges in systematically supervising and assisting each patient with effective oral hygiene amid the demanding workload of psychiatric care. Consequently, poor oral hygiene practices among patients are not merely individual choices but result from a combination of cognitive deficits, lack of established habits, and weak support systems.

### **5. Recommendations**

To more effectively improve oral health among psychiatric patients, the following recommendations are proposed:

#### **5.1 Strengthen oral health education to establish daily toothbrushing habits**

Raise patients' awareness of oral health and guide them in establishing good oral hygiene habits, such as regular brushing and flossing. It is crucial to instruct patients on proper brushing techniques and the use of oral cleaning tools. Medical staff should encourage patients to develop consistent brushing habits—brushing in the morning and evening, rinsing after meals, using a vertical brushing technique, gently scraping the tongue to remove food debris, and ensure thorough rinsing after brushing. At the same time, healthcare professionals should conduct regular oral examinations for patients to help them detect oral issues early and implement targeted interventions.

#### **5.2 Promote regular oral examinations and provide high-quality, convenient services**

Encourage psychiatric patients to undergo regular oral examinations for timely detection and treatment of oral diseases. The hospital should appropriately increase investment in oral health examination services to provide more convenient and efficient examination and treatment options, thereby meeting the oral healthcare needs of psychiatric patients. It should regularly organize free dental health outreach and education events, inviting dental specialists to conduct oral examinations for long-term psychiatric inpatients. These specialists should assess patients' oral conditions, answer oral health-related questions, and provide treatment recommendations for those with dental diseases. The hospital should also actively promote oral health science knowledge and advocate for healthy lifestyles. Through knowledge sharing and interactive activities, they should aim to subtly enhance patients' awareness of the importance of oral health. For psychiatrists and psychologists, oral health status should be integrated into comprehensive assessments of patients with severe mental illness. For instance, medical histories should document factors contributing to poor oral health, such as psychiatric medication use and tobacco consumption. While patients receive psychological or psychiatric treatment, inquire about their willingness to have oral issues addressed by a dentist; those interested may be referred for consultation or direct treatment. Additionally, Medical staff should also monitor patients for potential side effects of psychiatric medications, such as dry mouth, speech difficulties, or swallowing problems. If any of these occur, they provide timely symptomatic treatment.

### 5.3 Improving dietary habits: starting with daily practices

During routine meals, control sugar intake by reducing consumption of sweets and soft drinks to slow the progression of dental caries and periodontal disease. At the same time, Caregivers can promote the use of anti-cavity products such as fluoride toothpaste to strengthen caries prevention. While taking into account patients' dietary preferences and practical circumstances, medical staff should closely monitor their dietary needs and provide appropriate support. Health education for hospitalized psychiatric patients is a crucial function beyond clinical treatment in psychiatric wards. With the shift in medical paradigms, nursing functions have evolved from purely clinical disease management to comprehensive care encompassing prevention, health maintenance, and rehabilitation. This shift moves beyond passive, localized care toward holistic nursing. Research indicates that health education significantly improves patients' understanding of their conditions, enhances treatment compliance, increases knowledge of disease-related information, and boosts self-care abilities and general cognitive awareness.

### 5.4 Target specific populations for personalized healthcare

Particular attention should be given to elderly psychiatric patients among long-term inpatients. Medical staff should encourage these patients to maintain good oral hygiene, undergo regular dental check-ups and cleanings, and provide them with extra care, attention, and support for their oral health. For elderly patients, we should prioritize this group, utilizing appropriate oral care devices where feasible to assist with cleaning. For long-term psychiatric inpatients with extended illness duration, medical staff should guide them in establishing sound oral hygiene habits and conduct regular health education sessions, thoroughly explaining the importance of oral hygiene for both physical and mental health, enhancing patients' awareness of the condition, and thereby driving behavioral change. Due to family or institutional circumstances, a significant proportion of patients in many psychiatric hospitals are lifelong inpatients without guardianship. These patients experience prolonged hospitalization without family visits or care, lack future aspirations, suffer from insufficient social support, and exhibit marked social withdrawal.<sup>[7]</sup>

Therefore, it is recommended to establish oral health records for long-term psychiatric inpatients and implement targeted interventions to reduce oral diseases, improve oral hygiene and masticatory function, thereby safeguarding patients' physical and mental health and quality of life.

Patients with mental illnesses often experience varying degrees of physical and psychological trauma. Special attention should be given to their current oral health status. Any identified issues should be promptly addressed to help these patients develop healthy oral hygiene habits. Additionally, regular oral health education should be provided to emphasize proper oral care, thereby minimizing their risk of oral diseases and safeguarding their overall physical and mental well-being as well as quality of life.

## 6. Conclusion

Long-term psychiatric inpatients represent an extremely vulnerable population for oral health, with issues rooted in the nature of their illness, medication side effects, and inadequate systemic support. To meaningfully improve this situation, fragmented interventions must be surpassed by systematically integrating oral health into the overall psychiatric treatment and rehabilitation framework. This requires an integrated strategy: conceptually, redefining oral health as a core objective of medical care; In practice, implementing adaptive health education primarily through knowledge lectures, enhancing daily care assistance, and establishing institutionalized oral screening and referral mechanisms. Only through this multi-level, systematic comprehensive management can the vicious cycle between oral diseases and mental health be effectively broken. This approach fundamentally enhances patients' overall health, quality of life, and sense of treatment fulfillment, elevating their inpatient service experience and thereby advancing the high-quality and humanized development of healthcare services.

## Innovation

This study employs a combined approach of interviews and questionnaire surveys to gather firsthand data and comprehensively analyze factors affecting the oral health of hospitalized psychiatric patients.

## Limitations

This study has several limitations. First, the cross-sectional design precludes establishing causal relationships between influencing factors and oral health status. Second, the sample was drawn exclusively from a single psychiatric hospital using non-random sampling, limiting the generalizability of conclusions and preventing adequate representation of the overall population. Furthermore, data primarily relied on questionnaires completed by nursing staff on behalf of patients. Future development of self-assessment tools better suited to patients' cognitive levels could enhance data accuracy. Subsequent studies may adopt multi-center, large-sample longitudinal designs to broaden data collection scope and explore new theoretical frameworks for more comprehensive and in-depth evaluation of intervention effectiveness.

## Ethics Statement

This research protocol has been approved by the Ethics Review Committee of Nanjing Youan Hospital.

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