

## Review Article

# Nurse's role in maintaining dental hygiene intervention in patients with mental health disorders

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## Abstract

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Poor dental health has an impact on the general population's quality of life and everyday functioning, particularly in people with mental health conditions. Because of the huge burden of oral health-associated quality of life in patients with mental health issues, nurses must understand how they can assist patients at an early stage. The purpose of this review was to discover and evaluate oral health interventions in patients suffering from mental illness. The study incorporates existing literature from a variety of sources, including research articles, therapeutic guidelines, and professional publications. It investigates the difficulties that individuals with mental health issues encounter in maintaining oral hygiene, as well as the consequences for their overall health and well-being. It also looks into the current research on the efficacy of oral hygiene therapies delivered by nurses in this setting. The purpose of this study is to emphasize the significance of addressing oral health issues in this vulnerable group, as well as the critical role that nurses may play in promoting and implementing dental hygiene programmes.

## Key words

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Nursing, Dental hygiene, Preventions, Interventions, Mental health disorders, Psychiatric nursing.

## Introduction

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The World Health Organization (WHO) underlines the importance of dental health to overall health and well-being [1, 2]. The overall population's oral health is improving, but vulnerable patients (e.g., patients with mental health illnesses) have not benefited from the global increase in oral health [3]. Diabetes (both type 1 and type 2), pulmonary illness, and abdominal obesity are all linked to poor dental health [4]. It may also be linked to cardiovascular disease [5, 6, 7], but smoking may modify this relationship [8].

Nearly 20% of the global population suffers from a mental health issue [9, 10], emphasising the relevance of dental health in individuals diagnosed with a mental health disorder [11], who are more likely to be exposed to oral health risk factors [3, 12, 13, 14].

Several risk factors for poor dental health in persons with mental illnesses were identified [15]. Sugary sweets and sugary drinks [16], which are more commonly utilized in persons with mental health disorders, will aggravate dental health. Other impediments to appropriate oral health in patients diagnosed with a mental

health problem include inadequate oral health self-management, decreased tooth brushing frequency, a lack of enthusiasm for proper oral hygiene and health care practices, and poor psychosocial functioning [17]. In the general population, bad breath (halitosis) can cause poor self-image, low self-esteem, and lowered self-confidence, anxiety about social situations, loneliness, melancholy, and suicidal intent [18, 19].

Thus, poor dental health has an impact on the general population's quality of life and everyday functioning, particularly in people with mental health disorders. As a result, persons suffering from serious mental illness (SMI) (e.g., schizophrenia or related psychotic illnesses, bipolar disorder) are nearly three times more likely than the general population to have lost all of their teeth [20].

Routine and effective dental care is clearly required to sustain the oral health of in- and outpatients [21]. Mental health professionals (for example, nurses) play a significant role in the care of (out) patients suffering from a mental health illness. As a result, nurses should consider oral health care to be a vital component of their

treatment for patients suffering from mental health illnesses [22].

The evaluation of the literature emphasizes the need for more research to investigate creative techniques and best practices for dental hygiene interventions in this demographic. It emphasizes the significance of interdisciplinary collaboration and the inclusion of dental health as an integral aspect of holistic care for people with mental illnesses. Nurses can help patients with mental health issues improve their overall health outcomes and quality of life by recognizing and treating their dental hygiene requirements.

### **Role of nurses in maintaining dental hygiene**

The involvement of nurses in maintaining dental hygiene interventions for patients suffering from mental health issues is critical to providing full and holistic care. Individuals with mental health illnesses may experience specific challenges in receiving and sustaining dental care, despite the fact that oral health is a crucial aspect of overall well-being. Nurses play an important role in promoting and executing dental hygiene interventions for this vulnerable group as key members of multidisciplinary healthcare teams. Patients suffering from mental illnesses are more likely to develop oral health issues such as dental caries, periodontal disease, and poor oral hygiene. Medication side effects, self-neglect, restricted access to dental treatments, and inadequate oral health knowledge and skills are all factors that contribute to these problems. Poor oral health can have far-reaching effects for a patient's general health, quality of life, and self-esteem. As a result, it is critical to address the dental hygiene needs of individuals suffering from mental health illnesses.

Nurses can have a big influence by teaching people about good oral health habits. They can teach patients the value of brushing, flossing, and maintaining good oral hygiene routines. Nurses enable patients to take an active role in their dental health by providing knowledge and skills

relevant to oral care. Furthermore, nurses help dispel myths and misconceptions about oral health, minimizing anxiety and fear associated with dental procedures.

Preventive measures are an important part of maintaining dental hygiene. Nurses can perform regular oral health examinations to detect any problems early on. They can administer fluoride treatments, which help to improve tooth enamel and prevent decay. Furthermore, nurses can provide oral hygiene education that is adapted to the specific requirements and abilities of patients suffering from mental health conditions. They assist patients to maintain their dental health on their own by demonstrating effective brushing and flossing procedures.

Nurses play a critical role in reducing the barriers to dental care that patients with mental health issues confront. They can lobby for better access to dental care and work with dentists to ensure that patients receive appropriate and timely care. Nurses can help with appointment coordination, transportation, and support and reassurance during dental visits. They can also engage with social workers, case managers, and community organizations to connect patients with accessible dental care options.

Maintaining dental hygiene measures for people with mental health issues requires interdisciplinary collaboration. To build complete care plans, nurses collaborate closely with dentists, psychiatrists, psychologists, and other healthcare specialists. Interdisciplinary teams can provide integrated and personalized care by taking into account patients' mental health, physical health, and oral health concerns. Regular contact and information sharing among healthcare practitioners contribute to a comprehensive strategy that covers all areas of a patient's well-being.

### **Oral health and mental disorders**

Oral health and mental illnesses are two independent but linked parts of total health. Oral health refers to the state of the mouth, including the teeth, gums, and oral tissues, whereas mental illnesses relate to a variety of problems that impair an individual's emotional and psychological well-being. Despite their apparent contrasts, research has revealed a link between oral health and mental problems. Dental caries or gum disease, for example, can contribute to psychological anguish, self-esteem concerns, and social anxiety, all of which are typically related with mental disorders. Individuals suffering from mental illnesses, on the other hand, may have difficulty maintaining adequate oral hygiene and seeking necessary dental care. Understanding and addressing the relationships between oral health and mental problems is critical for providing comprehensive care. An essential part for good health and physical fitness is mental and oral wellbeing. It exhibits the social, physiologic, and psychological traits that are necessary for life's quality, and it is afflicted by people's diversity of experience, perspectives, and capacity for adaptation. It is part of a continuum that is impacted by attitudes and values of people in groups and individuals [23].

### **Interventions for dental hygiene**

To determine what kinds of dental health initiatives were targeted to enhance oral health in individuals with mental health disorders, the literature was thematically analyzed in accordance with the various intervention types. This review identified four distinct categories of oral health interventions: (I) physical interventions; (II) educational interventions; (III) interventions combining behavioral and educational aspects; and (IV) interventions combining educational and physical elements.

### **Physical interventions**

Physical dental hygiene interventions are an important part of preserving oral health and avoiding dental disorders. The literature contains useful information about numerous physical

therapies that have been advocated and researched in the field of oral hygiene [24]. Brushing your teeth on a regular basis with an adequate toothbrush and toothpaste is the foundation of good dental hygiene. Brushing at least twice a day with a toothbrush with soft bristles and fluoride-containing toothpaste is recommended by the literature [25]. Brushing approaches like the modified Bass technique or the modified Stillman technique have been recommended for excellent plaque removal and gum stimulation. Including mouth rinses in daily oral hygiene practices can also bring extra benefits. Chlorhexidine and other antimicrobial mouth rinses have been found to minimize plaque accumulation and gingivitis. Fluoride mouth rinses are indicated for people who are predisposed to dental caries because they promote remineralization and strengthen tooth enamel. Tongue cleaners and scrapers have gained popularity in recent years. These devices are intended to remove bacteria and detritus from the surface of the tongue, thereby improving oral hygiene and providing fresher breath. According to research, tongue cleansing can lower bacterial load in the mouth and enhance oral health outcomes [26].

### **Educational interventions**

In patients with drug abuse problems in the research by Barbadoro et al., (2008), were first given a questionnaire on socioeconomic data & epidemiological data to evaluate their oral health practices as well as other dental health risk factors [27]. Respondents received a thorough oral assessment in accordance with the WHO guidelines after completing the questionnaire. The existence of precancerous lesions was assessed with a thorough oral mucosal examination. An oral health pamphlet was distributed to respondents. Each respondent received a copy of the clinical findings report in order to further inform them about the state of their own oral health. Results indicate a considerable increase in precise responses between pre- and post-test questionnaires (p

0.001), particularly for items pertaining to the objectives of oral hygiene [27]. One year following the intervention, respondents displayed improvements in their attitudes and knowledge regarding oral cancer prevention, and 67.1% said that brushing their teeth after meals was now part of their regular routine. In addition, 65.9% of respondents said they had a dental exam the year before [27]. These findings showed that programmes aiming at boosting oral hygiene have a positive influence on mental health patients.

In the research by Khokhar et al. 2011, professionals and outpatients with SMI were the main subjects [28]. To promote better oral health, the intervention involved giving toothbrush, toothpaste, & mouthwash to responders without one. The value of including dental care planning in individual care plans and their importance was explained to the staff. Local dental services were now easier to get. Additionally, respondents attended a dental health education workshop. Results of this strategy demonstrate improved toothbrush accessibility and increased understanding. From 29% to 38% more people are now brushing their teeth twice a day. The proportion of responders who seemed to have their dentures examined remained unchanged [28]. These findings are consistent with the goal of increasing dental hygiene in mental health patients. The study's interventions targeted to improve access to oral hygiene items, raise oral health knowledge, and enable dental care planning. The favorable findings show that similar oral health promotion initiatives can be helpful in the context of mental health patients.

The impact of dental education on affected individuals with eating disorders to alter consciousness & dental health habits was the main focus of the study by Silverstein et al. 2019 [29], Pre-test and post-test surveys were given to respondents to gauge their self-perception, knowledge of oral health, and demographics. Three sessions made up the educational

programme, each covering a single subject: I general dental health education; (ii) aesthetics; (iii) consequences of eating disorders; & (IV) diet for oral health. In comparison to respondents who said they only see the dentist rarely or when they have a problem, the findings demonstrate those patients who said they routinely visit the dentist were much more likely to claim that a person's smile positively affects their self-esteem, how they come across to others, general health, & overall wellbeing. Following the oral health sessions, participants had increased knowledge of both general oral health & the effects of eating disorders on mouth health [29].

The outpatients with SMI were the primary subject of Yoshii et al., longitudinal investigation 2017. A pre- and post-program questionnaire was created containing information on demographics and oral hygiene self-care. The post-program questionnaire also asked about comprehension of the educational booklet. The instructional programme was divided into 5 sections: reasons for tooth loss, dental caries, oral hygiene, periodontal disease, & regular check-ups. Yoshii et al., teaching's materials (Yoshii et al., 2017) made the most of photographic visuals rather than written explanations to increase the effect of the booklet. The usage of fluoride toothpaste improved, and there was a rise in the daily use of floss or interdental brushes, according to the results of the educational programme. In the more than six months following the intervention, there were no changes in how frequently people went to the dentist. When there is a troubling issue or when there are several symptoms, more than 55% of respondents still visit the dentist [30].

When adopting oral hygiene interventions in mental health patients, ethical considerations should be taken into account. Participants should provide informed consent, ensuring that they understand the goal of the study, the procedures involved, and any potential risks or benefits. Throughout the study, participant information

should be kept confidential, and data should be managed and stored securely. The study should follow ethical norms and legislation governing human subjects research. Furthermore, it is critical to evaluate potential vulnerabilities and special needs of mental health patients, as well as to assure their safety and well-being during the research process.

### **Interventions combining educational and physical elements**

To effectively address the special requirements of mental health patients, promoting good dental health typically necessitates interventions that mix educational and physical elements. These treatments aim to increase awareness of oral health and hygiene practices while also removing barriers to dental care. These therapies, by incorporating both educational and physical components, can empower mental health patients to improve their oral hygiene and overall dental health.

Oral hygienists exhibited cleaning techniques and instruments while teaching nurses about oral health and giving them instructions on how to assist patients. Following a baseline oral examination, the dental hygienist provided patients with SMI with a patient treatment plan. They worked on following the instructions while being observed by the oral hygienist after receiving a soft toothbrush, fluoride toothpaste, and particular cleaning instructions. Questions about general and oral health, as well as medical and dental conditions, were posed to outpatients. The oral hygienist measured the tooth plaque and gingival bleeding indices prior to and following the questionnaire. The outcomes demonstrated a considerable impact on the plaque index.

### **Interventions combining behavioral and educational aspects**

As part of a multidisciplinary team meeting, Early Intervention Psychosis (EIP) teams in the study by Adams et al. 2018, received training on dental awareness as well as an information sheet

(approximately 30 min). Teams were given patient checklists and trial information throughout this training. Patients were given a dental checklist to help them practice better oral hygiene. However, the information could not be examined since follow-up data was unavailable (for example, there was a high staff turnover rate) [31].

In the study by Almomani, et al. (2006) [32], outpatients with psychosis or mood disorders were given dental instruction, oral hygiene guidelines, & reminders (a mechanism for setting reminders & once-weekly telephone conversation) from a dental hygienist who may offer supportive feedback and emphasize the study guidelines. The plaque index score was used to evaluate the results of various therapies (pre- and post-intervention). The intervention group's oral health considerably improved in comparison to the control group's members in terms of plaque formation and knowledge level ( $F = 5.32$ ,  $p = 0.026$ ,  $\eta^2 = 0.1$ ), who really only got a mechanical toothbrush [32].

Brief sessions of motivational interviewing (MI) (of duration 15–20 min, Unknown frequency) were given to outpatients with SMI in the research by Almomani et al. 2009 [33], before an educational session (addressing advantages of maintaining good oral hygiene & the drawbacks of poor oral hygiene, as well as motivation, self-confidence, & personal morality related to oral health, with a focus on understanding the consequences of SMI on dental health). Patients in the intervention and control groups were given leaflets that contained material from the instructional session and instructions on how to utilize a mechanical toothbrush. They also received a reminder system and weekly phone calls. After 4–8 weeks from baseline, oral health awareness in the MI group dramatically increased in the intervention group. Eight weeks following the baseline, the MI group displayed noticeably less plaque than the education group. Additionally, there was a significant interaction

effect ( $2 = 0.8$ ) on the plaque index. This study's lack of follow-up after a two-month period is one of its shortcomings [33]. Furthermore, whether these effects would last for a long time is unknown.

### **Considering different forms of interventions**

First of all, it is noteworthy that no studies in our proposed study had a preventative care component intended to promote dental hygiene and to prevent tooth decay. Second, although research on behavioral change in patients as result experts who work in mental health as well is equally needed, knowledge about oral health of nurses and patients has been fairly well examined. A first step is gaining knowledge and awareness; nevertheless, changing behavior with regard to maintaining dental health is a challenge that needs a different strategy.

According to one study [34], reminder tactics allow a system to prompt a user to carry out the desired behavior. Reminders are frequently used in mental health issues to prompt people to engage in activity. There are no researches looking at the results of dental health-focused reminder techniques in apps for mental well-being. Therefore, more research is required to determine how reminder tactics can improve dental health.

Overall, by the findings of various research studies, it is demonstrated that educational initiatives greatly increase mental health practitioners' knowledge of general health issues and the significance of dental healthcare. Only patients with psychotic and bipolar disorders are investigated when behavioural and educational therapies are combined. These studies show that the interaction of these factors has positive effects on oral cleanliness (as assessed by the plaque index) & oral health awareness [32, 33]. Only individuals with autism spectrum disorders have been researched in relation to physical element-based oral health therapies [35]. These individuals benefited from a reduction in

bleeding sites, but 14 weeks following the intervention, this benefit was vanished. Despite the fact that this systematic analysis only includes data It is consistent with studies conducted by Kay and Locker in 1996 on dental health education, which explored the immediate impact of dental health initiatives. It also presents evidence in the community at large and does not emphasize oral health education for people who are suffering from mental health issues. It does, however, highlight the significance of long-term surveillance and treatment continuation [36].

### **Conclusion**

Labor pain is one of the severest forms of pain that occur in women, and greater distress during labor could influence the fetal heart rate, post-partum stress syndrome and a negative birth experience to the mother. The present retrospective analysis demonstrates that ropivacain and fentanyl combination of EA proves to be a good choice to mitigate labor pain and impart favorable maternal and neonatal outcomes. More comparative in-depth studies are required further on such parameters to confirm the safety of the EA to the mother and the infant.

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