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Research Paper

No Mental Health without Oral Health

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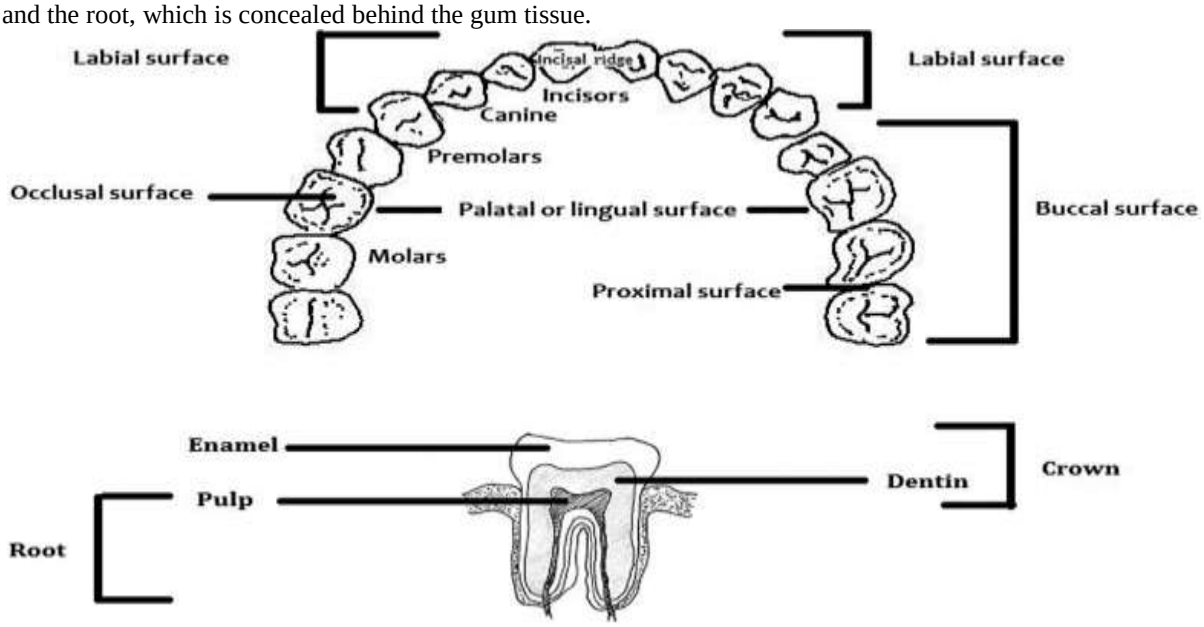
ABSTRACT: *Despite the significance of oral health as an integral aspect of total well-being, it has garnered comparatively less focus in comparison to the physical health challenges encountered by individuals with mental illness. This research aims to investigate the interdependent connection between mental and dental well-being. One mechanism via which anxiety and phobia might manifest is the anticipation of undergoing dental procedures. In the scenario, there exists an association between dental disease and many psychiatric diseases, such as severe mental illness, affective disorders, and eating disorders. Erosion, dental caries, and periodontal disease are all encompassed within this classification. Individuals with severe mental illness have a significantly higher likelihood, approximately 2.7 times greater, of experiencing complete tooth loss in the absence of dental disorder treatment, in comparison to the normal population. Nondental personnel can conduct evaluations of oral health utilizingstandardized checklists. Interventions encompass instructing individuals on proper oral hygiene practices, addressing iatrogenic dry mouth, and promptly sending patients to dental professionals.*
KEYWORDS*: Keywords: eating disorders, anorexia nervosa*

I. INTRODUCTION

There is a growing awareness among persons regarding the significant physical health challenges faced by individuals with severe mental illness, particularly in relation to conditions such as diabetes, cardiovascular disease, chronic lung disease, and cancer. Insufficient attention has been given to the significance of oral health as a constituent of physical well-being, which exhibits connections to many chronic conditions discussed earlier. Poor oral health can have detrimental effects on an individual's eating, speaking, and social and psychological interactions. This research examines the correlation between mental illness and dental health and provides recommendations for addressing both the individual and the broader system.

The human dentition consists of a total of 32 permanent teeth, each of which is assigned a specific label based on the orientation of its surface, as depicted in Figure 1. The posterior teeth possess an increased occlusal area, resulting in the presence of five surfaces, in contrast to the four surfaces observed in the front teeth (Figure 1). The tooth consists of two distinct components: the crown, which is the visible portion above the gum line, and the root, which is concealed behind the gum tissue.



Prior to the 17th century, dental therapy and medical care were essentially indistinguishable from one another. The act of tooth extraction gradually evolved into a distinct discipline known as dentistry, separate from

the domains of physicians, alchemists, and barbers. By the late 19th century, dental practitioners in both the United Kingdom and North America had established independent practices.

The condition of an individual's oral cavity can exert a substantial influence on their mental state. One potential manifestation of anxiety is observed in the context of dental phobia, which is classified as a specific phobia and is estimated to impact up to 50% of individuals seeking dental treatment. Regardless of the severity of oral disease, the presence of mental health conditions such as melancholy and worry can exacerbate the perception of pain. For example, individuals who exhibit no apparent abnormalities in their oral mucosa may yet encounter the somatic symptom disorder referred to as burning mouth syndrome.

The present study centers on the relationship between mental illness and its potential impact on oral health. Individuals with mental illness, particularly those with severe mental illness, face heightened susceptibility to oral health issues due to various factors. These factors include inadequate nutrition and oral hygiene practices, excessive intake of sugary beverages, concurrent substance misuse involving tobacco, alcohol, or psychostimulants, as well as financial or logistical obstacles hindering access to dental care services. Dry mouth (xerostomia) is a prevalent risk factor for oral health issues that can arise because of nutritional deficiencies associated with psychosis or anorexia nervosa. There have been reports indicating that individuals diagnosed with bulimia have deviations in saliva production because of parotid gland pathology. Anticholinergic effects, which are prevalent in frequently used psychiatric medications, have the potential to induce xerostomia.

The three primary oral health concerns encountered by individuals are dental erosion, caries (commonly known as tooth decay), and periodontal illnesses affecting the gums. Edentulism, or complete tooth loss, represents the ultimate stage of these conditions. Neglecting dental hygiene over an extended period might lead to the development of oral cancer. The increased likelihood of acquiring oral cancer and dental diseases can be attributed to the neglect of oral health. The absence of proper dental care can result in the failure to identify malignant lesions.

Erosion and Caries

The phenomenon of tooth erosion, alternatively referred to as pathological wear, occurs when there is a loss of healthy tooth tissue in the absence of germs. The degradation of teeth can arise due to attrition, which involves the grinding of one tooth against another, as observed in cases of bruxism. Additionally, abrasion, characterized by the wearing away of the tooth surface caused by external agents like toothbrushes, can contribute to this deterioration. Furthermore, tooth erosion, which refers to the chemical dissolution of the tooth structure, can also lead to this process. Both gastric reflux and persistent vomiting contribute to an increased probability of the latter, as does the consumption of substantial amounts of citrus fruit, soft drinks, and sports drinks. Figure 1 illustrates the orientation of the tooth surface undergoing erosion.

Gum Disease

The development of gingivitis, the initial stage of periodontal disease, occurs exclusively in the presence of dental plaque. Indicative manifestations include gingival bleeding that occurs readily, and the formation of periodontal pockets characterized by detachment from the teeth. The inflammatory process advances to the periodontal ligament, resulting in the degradation of tissue and bone. Once the disease advances to the stage where the tooth roots become visible and the periodontal tissue undergoes destruction, a condition referred to as "periodontitis," the resulting harm is irreversible. The following are prevalent manifestations and signs of halitosis, commonly referred to as bad breath.

Eating Disorders

During the latter part of the 1970s, scholars initially identified a correlation between eating disorders and suboptimal oral health. The erosion resulting from the use of acidic foods and beverages, in conjunction with stomach reflux or prolonged vomiting, constitutes a substantial contributing factor to tooth loss among children. Tooth erosion is observed in a substantial proportion, ranging from 35 to 38 percent, of those diagnosed with eating disorders. The palatal surfaces of individuals who engage in self-induced vomiting (SIV) are particularly susceptible to significant wear (Figure 1). In a meta-analysis comprising 10 trials and a total sample size of individuals, it was shown that patients diagnosed with eating disorders had a significantly higher risk of dental erosion compared to a control group. Specifically, the patients were found to have a fivefold increase in the likelihood of experiencing tooth erosion. The erosion rate experienced a tenfold increase in persons with SIV.

Individuals diagnosed with anorexia nervosa tend to display a higher propensity for obsessive personality traits, leading to increased vigilance in maintaining oral hygiene. Consequently, this heightened attention to oral cleanliness contributes to a comparatively reduced incidence of dental caries in comparison to dental erosion. However, a comprehensive analysis of four separate studies revealed that individuals diagnosed

with anorexia nervosa exhibited a higher prevalence of dental caries, tooth loss, and dental fillings compared to a control group. Once again, the issue with SIV was more significant in nature.

Mood Disorders

Frequent co-occurrence of smoking, excessive alcohol consumption, and teeth-grinding has been observed among individuals with depression, hence exacerbating their susceptibility to attrition. The occurrence of erosion resulting from gastric reflux can be attributed to excessive consumption of tobacco and alcohol.
Individuals diagnosed with depression face a heightened susceptibility to dental caries as a result of two contributing factors: antidepressant-induced xerostomia and self-initiated inadequate oral hygiene practices. Furthermore, the consumption of stimulants such as caffeine and tobacco smoke has the potential to exacerbate this condition. Moreover, prostheses may experience issues with correct fit or misplacement. The complete loss of teeth is a consequence of inadequate oral hygiene practices.

Individuals diagnosed with bipolar affective disorder experience greater challenges compared to the general population.

Severe Mental Illnesses

The etiology of this condition aligns with that of other psychiatric disorders. These encompass reactions to antipsychotic medications, antidepressants, mood stabilizers, and various other psychiatric drugs. Additional factors that contribute to the issue at hand encompass limited availability of dental healthcare services, substance misuse, tobacco consumption, and dietary preferences such as the consumption of sugary beverages.

In Western countries, it has been observed that individuals with DMFT scores over 20 out of a total of 32.36 are commonly linked to the presence of serious mental disorders. Ethiopia and India, two nations characterized by dietary patterns distinct from the Western diet, exhibited much lower DMFT scores. Comparable patterns may be observed in the surface (DMFS) scores, which are measured on a scale of 0 to 148. Italy exhibits the highest score, while India demonstrates the lowest score of 2.5.

There is a higher prevalence of periodontal disease observed in individuals with severe mental disorders. The presence of gum disease was observed in all Italian psychiatric inpatients, as reported in a particular study.39 If left untreated, periodontal disease can lead to the formation of periodontal pockets, characterized by gum recession around the teeth. In a study conducted in Australia, it was shown that a substantial proportion of psychiatric outpatients, namely 59%, had considerable levels of distress.40 In three more studies, the percentage of affluent individuals admitted as inpatients varied between 15% and 28%.

II. CONCLUSION

Despite the availability of facts pertaining to the substandard dental health of individuals with mental illness for the past four decades, this matter has predominantly been neglected. Notably, neither the systematic reviews nor the meta-analyses identified any research conducted in Canada. In nations where universal healthcare is implemented, it is not uncommon for dental treatment to remain outside the scope of coverage. Regrettably, a considerable number of extended-stay psychiatric facilities previously accommodated visiting dental practitioners, a practice that has been discontinued because of the transition towards community-based mental healthcare. The hospital's promotion of dental services was found to correlate with a decrease in the demand for dental treatment.

The dental health of patients can have a significant impact on their overall well-being. Difficulties related to eating and speaking can arise due to discomfort or aesthetic concerns associated with the natural dentition or ill-fitting dentures. There exists a correlation between dental ailments and other health conditions, including cardiovascular disease, stroke, diabetes, and respiratory disorders. Common risk factors such as cigarette and alcohol consumption are known to contribute to the development of certain health conditions. However, it is important to recognize that inadequate dental hygiene also plays a significant part in this process. This is primarily due to the occurrence of intermittent bacteremia and the formation of secondary immunological complexes. These events subsequently activate inflammatory responses within the arteries and peripheral organs.

It is imperative for mental health clinicians to incorporate inquiries regarding patients' dental health within the scope of their comprehensive assessment. Non-dental personnel can nevertheless contribute to the procedure by utilizing established checklists. When developing nursing care plans for hospital admissions, it is important to consider the inclusion of teeth brushes and denture washes. Additionally, it is crucial to document aspects that are recognized to contribute to oral ill health, such as the utilization of psychiatric medication and the consumption of cigarettes or drugs. The practice of case management should involve the identification and engagement of dental professionals who possess the necessary expertise and willingness to provide treatment to individuals with severe mental illness. Subsequently, patients should be appropriately referred to these dentists

upon their reintegration into the community following discharge. The recognition, monitoring, and management of the potential association between xerostomia and psychiatric medications has significant importance. It is imperative to inquire about any challenges patients may be experiencing in relation to dysphagia, dysarthria, or xerostomia-induced difficulty in masticating dry food. Inquiries pertaining to the conditions of dryness, cracking, halitosis, and oral ulcers have been included.

Enhancing access to care necessitates improved collaboration between mental health practitioners and dental professionals to address psychosocial and financial obstacles. Considering certain patients' hesitancy to seek psychiatric therapy, it is plausible that a dentist could be the initial healthcare provider to identify potential indications of an eating disorder. In addition to the measures, the utilization of mouthwashes and topical fluoride treatments, as well as the application of artificial salivary products, might be beneficial in addressing xerostomia. It is advisable to promote a reduction in the consumption of alcoholic beverages, tobacco products, and acidic foods such as oranges and lemons among patients. The consumption of caffeine-free gum has been found to potentially enhance the production of saliva, hence potentially alleviating symptoms of xerostomia. Additionally, reducing the intake of beverages containing caffeine has been suggested as a potential strategy to mitigate the occurrence of xerostomia. The regular consumption of water throughout the day has the potential to reduce symptoms. In conclusion, it is important for those with eating difficulties to avoid vigorous brushing shortly after undergoing SIV, since the softened and demineralized surface is more susceptible to abrasion.

It is imperative that individuals suffering from mental illness are afforded equitable and inexpensive access to dental care. The "Dental as anything" programme is an example of a project implemented in Australia. Teams engage in the provision of mental and dental health care inside historically marginalized regions, including homeless shelters and group homes, as a component of a dynamic outreach partnership between mental and oral health services. Preliminary findings indicate that the inclusion of fluoride in the water supply of communities is associated with a reduced disparity in dental health between individuals with severe mental illness and the general population.

In summary, individuals diagnosed with serious mental illness should prioritize their physical well-being, encompassing oral health as an integral component. Interventions should prioritize the enhancement of oral hygiene, management of iatrogenic dry mouth, and prompt referral of patients to dental professionals.

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