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REVIEW ARTICLE

DEPRESSION AND ORAL HEALTH

[1*]Dr. Dipayan Datta, [2]Dr. Ramesh Kumar S.G., [3]Dr. Aswath Narayanan M.B., [4]Dr. Leena Selvamary A. and [5]Dr. Sujatha A.

[1]Postgraduate, Department of Public Health Dentistry, Tamil Nadu Government Dental College and Hospital, Chennai- 600 003
[2,4,5] Assistant Professor, Department of Public Health Dentistry, Tamil Nadu Government Dental College and Hospital, Chennai- 600 003
[3]Professor and Head, Department of Public Health Dentistry, Tamil Nadu Government Dental College and Hospital, Chennai- 600 003

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ABSTRACT

Depression is one of the commonest mental problems affecting the general health as well as the oral health. Around 300 million people throughout the world are suffering from depression. Individuals with depression are often less motivated to maintain their oral hygiene resulting in dental caries, periodontal diseases, oral lichen planus, burning mouth syndrome etc. Patients coming to dental clinic with obvious oral problems might have undiagnosed depression. Hence, it is the dentist's responsibility to communicate with the patients to detect any underlying psychological disorders. Proper communication will help the person to feel free to discuss about his mental state and the dentist can refer him for psychological counselling in order to regain his mental and oral health.

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INTRODUCTION

Oral health and mental health have always been considered as integral part of general health. Now-a-days, the association between the health within the oral cavity and health within the mind is well established. According to WHO, mental health is a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her country (WHO, 2016). Mental health disorders have significant impact on physical health. Mental illness is associated with many of chronic diseases like, cardiac diseases, diabetes, cancer etc. and can have long-term effect on social and economic aspects of life (WHO, 2017). In recent years, psychological diseases are seen to be growing in a rapid way and becoming a major public health problem (Suresh, 2015).

Corresponding author: **Dr. Dipayan Datta,**
Postgraduate, Department of Public Health Dentistry, Tamil Nadu Government Dental College and Hospital, Chennai- 600 003.

They account for 10% of the global burden of the disease, and this is expected to rise to 15% by 2020 (Dangore-Khasbage *et al*., 2012). Most prevalent mental disorders worldwide are depression, bipolar disorder, schizophrenia, dementia, intellectual disabilities and developmental disorders including autism. Depression is a common mental disorder and more than 300 million people are affected by it with an increase of greater than 18% between 2005 and 2015 (Mental disorders, Fact sheet, WHO, 2017). Considering it to be a major Public health problem, WHO has proclaimed 10th October as World Mental Health Day and announced the theme for the year 2017 as "Depression: let's talk".

DEPRESSION AND GENERAL HEALTH

Depression is a common mental disorder that presents with depressed mood, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor concentration. Usually depression occurs due to different adverse life events, like losses of important persons, objects, relationship etc. but it can also occur due to no apparent cause.

These problems can become chronic or recurrent and lead to substantial impairments in an individual's ability to take care of his or her every day responsibilities (Depression: A Global Public Health Concern. WHO, 2012; National Institute for Health and Clinical Excellence (NICE), 2009). Generally depression starts to appear in early adulthood, with possible recurrences. Women are 50% more prone to be affected by depression than men (Murray *et al*., 2013; WHO, 2004) Depressive episodes may be characterized by sadness, indifference or apathy, or irritability. These symptoms are usually associated with change in different functions, like excessive or lack of appetite (which might lead to weight gain or loss accordingly), impaired concentration, trouble in decision making, mood swing, altered sleep patterns etc (World Federation of Mental Health, 2012; Depression fact sheet, WHO, 2017). Different variations of depression are persisting in world population. Depending on the number and severity of symptoms, a depressive episode can be categorized as mild, moderate, or severe. An individual with a mild depressive episode presents some difficulty in continuing with ordinary work and social activities, but probably does not cease to function completely.

On the other hand, a person with severe depressive episodes does not seem to be able to continue with social, work, or domestic activities, except to a very limited extent. Bipolar disorder typically consists of both manic and depressive episodes separated by periods of normal mood. During the manic episodes elevated mood and increased energy is presented by the individual, resulting in over-activity, pressure of speech and decreased need for sleep (Depression, 2012). Epidemiologic studies revealed that depression increases the risk of atherosclerotic cardiovascular disease, diabetes and other systemic conditions, (Goetzel *et al*., 2012) and affects the course and outcome of the conditions adversely (Mavrides, 2013; Park *et al*., 2013). Depression is also found to be associated with increased morbidity and mortality across a range of systemic conditions (Rozanski *et al*., 2005; Rugulies, 2002; Sullivan *et al*., 2012; Guerry, 2011; Heim *et al*., 2008). Results of several clinical studies correlate depression with atrophy and loss of function of limbic brain regions that control mood, including the prefrontal cortex and the hippocampus (Duman, 2006; Duman, 2012).

EFFECTS OF DEPRESSION ON ORAL HEALTH

Psychiatric disorders are well known to affect the oro-facial region but they often are unrecognized because of the common and limited nature of their presenting features (Suresh, 2015). Persons with mental illness show poorer oral health due to poor oral hygiene maintenance, higher intake of carbonates resulting from the reduced serotonin level, poor perception of oral health self-needs, length of psychotropic treatment, and less access to dental care (Naira Roland Matevosyan, 2010).

Periodontal diseases: Individuals suffering from depression are prone to have periodontal diseases (Monteiro da Silva, 1996). Chronic stress and depression are supposed to reduce the immune responsiveness leading to more pathogenic infection and concomitant periodontal tissue destruction. Patients with severe depression presents necrotizing ulcerative gingivitis which results in periodontal tissue destruction, tooth mobility and eventually tooth loss. Depression can mediate risk and progression of periodontitis through changes in health-related behaviours, such as oral hygiene, smoking and diet (Aleksejuniene, 2002).

Dental caries: Persons with depression are at high risk of developing rampant caries due to lack of interest in performing oral hygiene practice, increased consumption of carbohydrates, a craving for intense sweets because of impaired taste perception, reduction in salivary secretion and a high lactobacillus count (Amsterdam et al., 1987; Christensen, 1996; Anttila, 1999; Wallin, 1994).

Oral mucosal diseases: One typical characteristic of oral mucosa is that it is very reactive to emotional influences like stress, anxiety and depression. So, oral mucosal diseases can develop as direct expressions of emotions, or indirect result of psychological alterations. Depression is found to be associated with various oral conditions like, Oral lichen planus, Recurrent aphthous stomatitis, Burning mouth syndrome etc (Suresh *et al*., 2015; Valter *et al*., 2013). Psychological disturbances can also worsen the oral diseases. Studies found that oral diseases frequently undergo periods of remissions and exacerbations which can be related to the patients' emotional status (Schiavone *et al*., 2012).

Other oro-facial problems: Glosopyrosis and chronic facial pain are frequently seen in the depressed patients. Sometimes, temporomandibular joint disorder is found in them and which has been hypothesized to be raised from stress induced disruption of the HPA axis, resulting in inflammatory joint disease (Korszun *et al*., 1996; Marbach, 1999; Gallagher, 1991).

ORO-FACIAL REACTIONS TO ANTIDEPRESSANT MEDICATIONS

Though the medications for depression are prescribed wisely and on the basis of the patient's symptoms and responses, they show various effects on oral tissues (Table.1) (Friedlander, 2001).

DENTAL MANAGEMENT FOR DEPRESSIVE PATIENTS

Patients with depression or any other psychological disease should be treated with utmost care. In most cases they are unwilling to reveal their history of mental illness and sometimes they become irritated or aggressive in the dental office. Before beginning the treatment, the patient's psychiatrist should be consulted (Arthur, 1991). Common dental treatments for depressive patients includesupra and subgingival scaling, root planing, dental restorations etc. but should be performed underprofound local anesthesia (Yagiela, 1985). Tricyclic antidepressants potentiate the pressor and arrhythmiogenic effects of nor-epinephrine. Hence,local anesthetics for patients receiving tricyclic antidepressants must be limited to those formulations which contain epinephrine as the vasoconstrictor(Cawson, 1983). First and foremost important step in managing these patients is to obtain accurate medical history with current medication. The dentist should be supportive and non-judgemental and discuss the dental problem along with the treatment modalities with the patient. It is better to avoid lengthy treatment procedures so that the patient's comfort level is not crossed. If the patient shows xerostomia, he should be educated on proper oral hygiene practice and be prescribed with xylitol lozenges and/or gums to stimulate his salivary secretion.

Table 1. Adverse oro-facial reactions to antidepressant medications (Friedlander, 2001)

Commonly Prescribed Antidepressants		Adverse Oro-Facial Reactions
1.Selective Serotonin Reuptake Inhibitors	Citalopram	Xerostomia, dysgeusia, stomatitis, gingivitis, glossitis, bruxism
	Fluoxetin	Xerostomia, sialadenitis, dysgeusia, stomatitis, gingivitis, glossitis, discolored tongue, bruxism, jaw pain, buccal glossal syndrome
	Paroxetine	Xerostomia, sialadenitis, dysgeusia, stomatitis, gingivitis, glossitis, tongue edema, discolored tongue, bruxism, caries, dysphagia
	Sertraline	Xerostomia, dysgeusia, stomatitis, glossitis, tongue edema, bruxism, dysphagia, gingival hyperplasia
2. Atypical Antidepressant	Bupropion	Xerostomia, dysgeusia, stomatitis, glossitis, bruxism, toothache, oral edema, dysphagia
	Maprotiline	Xerostomia, slaiadenitis, dysgeusia, stomatitis, discolored tongue, dysphagia
	Nefazodone	Xerostomia, dysgeusia, stomatitis, gingivitis, glossitis, monoliasis, dysphagia, periodontal abscesses, oral ulcers
	Venlafaxine	Xerostomia, dysgeusia, stomatitis, gingivitis, glossitis, tongue edema, discolored tongue, bruxism, monoliasis, dysphagia, halitosis, oral ulcers
3. Tricyclic Antidepressant	Amitriptyline	Xerostomia, sialadenitis, dysgeusia, stomatitis, tongue edema, discolored tongue
	Clomipramine	Xerostomia, sialadenitis, dysgeusia, stomatitis, gingivitis, glossitis, caries, cheilitis, dysphagia, oral ulcers, halitosis, sinusitis
	Desipramine	Xerostomia, sialadenitis, dysgeusia, tongue edema, discolored tongue, facial edema
	Imipramine	Xerostomia, sialadenitis, dysgeusia, stomatitis, tongue edema, discolored tongue, facial edema
	Protriptyline	Xerostomia, sialadenitis, dysgeusia, tongue edema, discolored tongue, facial edema.
	Trimipramine	Xerostomia, sialadenitis, dysgeusia, stomatitis, tongue edema, discolored tongue, facial edema
4. Monoamine Oxidase Inhibitor	Phenelzine	Xerostomia
	Tranylcypromine	Xerostomia

Patients should be followed up at every 3-month follow-up visits along with oral prophylaxis and topical fluoride application. Orthodontic and prosthetic treatments can also be performed during these recall visits. It is commonly noticed that the self- esteem in these patients is improved which may have positive impact on the psychotherapeutic aspect of management (Arthur, 1991).

LET'S TALK

Psychological disorders which are getting diagnosed are just the tip of iceberg and oral diseases are often treated directly without considering the presence of psychosomatic illnesses. Many of the patients coming to dental clinic with some oro-dental problems might be suffering from depressions. But if only the presenting problems are treated then the underlying psychological causes might get undiagnosed and untreated which may further create the recurrence of the dental problems or aggravation of the mental illness. Hence, it is the responsibility of the dentist to try to assess the possibility of any accompanying psychological disease if the patient is showing any symptom of depression. Followings are some suggestions:

- **Effective communication:** By properly and cordially talking to the patient, the dentist can understand his/her current mental state.
- **Good rapport:** Once the communication is established, the dentist can create a good rapport in each follow up which will help to build a friendly atmosphere between the doctor and the patient.
- **Referral:** Mental problems are still a stigma in the society and less educated people with in apparent psychological disorders are not always interested for a check up to a psychiatrist. If the dentist finds out that the patient is suffering from depression, his good rapport will help him to make the patient understand the necessity of a psychological check-up and eventually he can refer him to a psychiatrist.
- **Counselling**: Proper counselling definitely improves the psychological condition of the patient but not only the psychiatrist, the dentist can also counsel the patient to improve his oral health related quality of life." this sentence should be a continuous sentence.
- **Peer influence:** Apart from motivating the patient, the dentist should also motivate his family and/or peer groups so that they can indirectly help him to get out of his depression and live a stress free healthy life.

CONCLUSION

Depression is a psychiatric disorder in which behavioural patterns as well as oral health behaviours are impaired for a considerable amount of time. Persons coming for dental treatment with undiagnosed depression are often unaware of their actual mental condition. Hence, the dentists must be well aware of the signs and symptoms of depression. Early detection will positively help in prompt referral for definitive diagnosis and treatment. Persons already under psychiatric treatment should also be taken under consideration as the dentists have to be familiar with the potential need to modify the treatment plan (Arthur, 1991).

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