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Review Article

EATING DISORDERS AND ITS EFFECT TOWARD THE ORAL CAVITY: A REVIEW

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ABSTRACT

Objective: To find and review the eating disorders and its effects towards the oral cavity.

Methods: Various articles were reviewed from Pubmed and the internet and were analyzed to write the review.

Results: It is evident from many studies that eating disorders and its effect are prevalent in our societies and has found to have a major effect in oral health.

Conclusion: Eating disorders are found to be affecting almost 15% of young girls to varying degrees and around 5 to 10 times more than men. These illnesses involve a constant pondering with food, a hallucinative body image and high end measures are taken by the victims to control weight to the extent of harming their body and mental health and also disturbs their social relationships and interactions. The most common eating disorders are anorexia nervosa (restriction of food intake) and bulimia (episodes of compulsive eating). Damage to the teeth associated with eating disorders are normally caused due to both mechanical and chemical wear. The enamel can also be eroded by the excess of acid from the stomach and reduces the enamel layer and thereby exposes the underlying dentine which is sensitive; the backs of the teeth, facing the palate and at the gum line around the incisors also is affected. In due time,the enamel slowly erodes in the backside of the teeth.

Keywords: Eating, Disorder, Oral cavity.

INTRODUCTION

What are eating disorders (EDs)?

EDs are primarily psychological conditions, often with severe medical complications and share the core features of self-evaluation by shape and weight perception and a desire to be thinner [1]. EDs along with depression and anxiety disorders are one of the most common mental health issues [2]. The reasons for EDs are not found to be very clear but both biological and environmental factors appear to play a role along with the societal ideas on body size and shape is believed to contribute more in the spread of EDs [3]. EDs, in most cases, lead to severe conditions with higher death ratios and marked impairment [4]. The risk of suicide and self-harm is high among people affected with EDs [5].

Types of EDs

The EDs are classified as mental disorders in standard medical manuals, such as in the International Classification of Diseases - 10 [6], the DSM-5, or both, the important EDs are anorexia nervosa (AN) which is characterized by a lack of maintenance of a healthy body weight, an immense obsessive fear of gaining weight or refusal to do so, but really have an unrealistic perception, or non-recognition of the seriousness, of current low body weight [7]. Anorexia may cause the stoppage of menstruation and also may lead to loss of skin intergrity and bone loss. It also increases the risk of heart attacks and related heart problems and thereby increases the risk of death for the victims [8]. Recently, it has been found that anorexia may be caused also due to genetic components along with other factors such as social or vanity issues [9].

Bulimia nervosa is another major ED prevalent in the society which is characterized by binge eating followed by purging. Binging is the eating of a large amount of food in a short interval of time while purging refers to the attempts to get rid of the food consumed which may be helped by vomiting or taking laxatives [10]. Most people with bulimia have a normal weight [11]. The forced purging or vomiting using self-gagging may lead to thickened skin on the knuckles and breakdown of the teeth. Bulimia can also be linked with mental disorders such as depression, anxiety, and also to problems with drugs or alcohol [10]. There is also a higher risk of suicide and self-harm [5].

The other types of EDs include muscle dysmorphia, binge ED, etc., but the above two play a major role in oral cavity changes.

MAJOR SYMPTOMS OF EDS

AN is a major ED described by attempts to lose weight by almost starving themselves vigorously. Victims of anorexia may show a number of signs and symptoms, which help to identify the type and severity of anorexia which may vary and may be present but not readily apparent [12]. Hypokalemiawhich is the major drop in the level of potassium in the blood stream and is a sign of AN which is sometimes accompanied by lanugo (hair growth on the face and body) [13,14]. A momentous drop in potassium can cause fatigue, muscle damage, abnormal heart rhythms, constipation, and paralysis. Over-exercising or excessive exercise including micro-exercising, such as making small and persistent movements of fingers or toes, showing desperate attempts to lose weight [15,16]. The victims have a huge fear of even the smallest amount of gain in weight and thereby take all preventative measures to avoid weight gain [17]. Dramatic weight loss to at least 15% of the normal body weight [18]. Another sign is the intolerance to cold and frequent complaints of feeling cold leading to lowering of body temperature (hypothermia) in an effort to conserve energy [19]. Obsessive-compulsive disorder and obsessive-compulsive personality disorder are highly simultaneously occurring with AN [20]. Other comorbid conditions include depression [21], alcoholism [22], borderline and other behavioral disorders [23,24], anxiety disorders [25], attention-deficit/hyperactivity disorder [26], and body dysmorphic disorder [27].

Bulimia nervosa is normally characterized by out-of-control and continuous eating, which may stop when the victim is stopped by another person or the stomach hurts from over-extension, followed by self-induced vomiting (usage of laxatives or self-gagging) or other forms of purging. Binging and purging may be repeated constantly over a week and in some severe cases, several times a day [28]. The frequent occurrences of binging involve consumption of abnormally large portions of food [29]. This includes dehydration and hypokalemia which is caused due to loss of potassium by recurrent vomiting and via the kidney [30]. Constant vomiting can lead to gastroesophageal

reflux [31]. The use of laxatives, diuretics, or enema is also common after eating, excessive exercising and calluses or scars on the knuckles due self-gagging is also seen [32].

Effects of EDs in the oral cavity

Oral manifestations normally occur in EDs due to lack of proper nutrients and resulting in impairment of certain metabolic activities; other causes may also be due to low importance being given to personal hygiene, intake of certain drugs, deep psychological disorders, and modified dietary habits [33]. Dentists who regularly check the patients teeth are the first persons to be able to diagnose and provide dental treatment to the oral manifestations of the disease [34].

Dental erosion

The most prominent oral manifestation may be that of enamel erosion or perimolysis of the palatal surface of anterior and posterior teeth [35,36]. Such erosion is characterized by a chemical rather than a bacterial dissolution and leads to uniform, polished and smooth surface of teeth, in contrast to abrasion which is caused due to mechanical wear [37]. Erosion may also occur from abnormal use of some caffeinated and/or carbonated drinks, either to boost energy levels [38] or to decrease the reflex hunger stimulus [39,40] by increasing dilation of the stomach.

Salivary manifestation

Sialadenosis is one of the oral manifestations of EDs which is the swelling of the major salivary glands, mostly the parotids resulting in acinar enlargement and functional impairment is a frequent oral manifestation of ED and sometimes may be the presenting sign [41]. Necrotizing sialometaplasia has also been reported in association with bulimia [42] which is a self-limiting disorder of uncertain etiopathogenesis, which is similar to invasive carcinoma. Reduction in saliva flow may also be related to side effects of drugs, especially those used for underlying depressive conditions [43].

Periodontal effects and mucosal lesions

Nutritional deficiencies, especially in vitamin C [44,45], may also affect the marginal periodontium leading or making prone to gingivitis. The deficiency of vitamin C or scurvy, causes defective collagen synthesis, which can lead to gingival swelling, tooth mobility, increased the severity of periodontal infections, spontaneous gingival bleeding, ulcerations and tooth mobility [46]. Such manifestations may be associated with various degrees of oral discomfort including pain.

Another major manifestation is oral erythema, affecting the soft palate frequently in people with purging behavior, may be related to the direct degrading action of acid during vomiting causing epithelial erosion and sometimes due recurring frictional trauma caused by the object used to induce vomiting [47].

Other oral manifestation

Dental caries was found in most of the people affected with EDs due to their negligence of dental hygiene [48]. In patients with anorexia, osteopenia and on time leads to osteoporosis may occur within 6 months of the development of amenorrhea [49,50]; this generalized bone loss may lead to many implications over the body while it is of little relevance for oral health. In the case of xerostomia or dry mouth, care should be taken in excluding the presence of salivary hypofunction and intake of drugs inducing it [43].

CONCLUSION

EDs, classified as a mental disorder according to DSM-5 are now widespread among the population all around the world. The causes although not determined can be blamed on the societal stigma of "thin and fat." The pressure of social peers and sometimes genetic problems may also lead to prey of adolescents. The dentists who regularly check the patient's teeth are mainly responsible for the identification and help in the treatment of EDs eventually.

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