

# Association Between Eating Disorders And Oral Health - A Mini Review

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**Type of article:** Review

**Short Running title:** Influence of eating disorders on oral health

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**Abstract:** *Eating disorders (ED) represent a severe form of mental illness which poses a treatment challenge when ignored. ED is known to affect more than 13% of adolescent children and young adults. It is found to influence psychological and physical states, thereby affecting interpersonal relationships and social behaviour. The disease presentation may result in mild conditions such as chronic malnutrition, decrease in bone mineral density, gastritis to suicidal behaviour. Since there are some convergent factors that could bring about a connection between ED and oral health, a dentist will be the right person to provide early diagnosis of this condition. Hence the prompt diagnosis of the condition and early intervention. Several studies have provided strong evidence that individuals suffering from ED present with poor health when compared to non-ED individuals. The present mini review highlights the fact as to how eating disorders influence dental health and management of the same to help patients to get away from the illness.*

**Keywords:** *anorexia nervosa; bulimia nervosa; eating disorders; oral health*

## 1. INTRODUCTION

Genesis of eating disorder (ED) is multifactorial, involving social and psychological factors. Eating disorders have severe effects on oral health such as dental erosion purge habits and caries lesions (Brandt et al., 2017). ED is also caused due to abnormal diet pattern disorder and chaotic eating behaviours which shows in oral cavity (do Vale, Kerr and Bosi, 2011). They are result of metabolic impairment due to nutritional deficiencies, personal hygiene craving habits and excessive intake of particular food (Anwar, 2014) which have severe impact on oral soft and hard tissue as dental caries, effects on oral mucosa, salivary gland, bone, gingiva, periodontium, tongue, tooth erosion (Misra et al., 2010). The associated psycho-social illness affects many adult and especially children also have additional health issue such as diabetes, heart failure, loss of menses systemic problems and increases xerostomia and swelling in partial salivary gland, periodontal disease associated with anorexia binge eating and bulimia nervosa (Silverstein et al., 2019). Susceptibility to dental

and periodontal disease depends on risk factors including genetics, systemic factors, and oral hygiene. Plaque is the primary cause for gingivitis. Most of the chemical products contain an antiseptic that plays an important role in controlling plaque accumulation (Selvakumar, 2017). Children have a cause for this back of oral hygiene and increase in dental disease. Intake of pharmacological drugs affects children's oral cavity and leads to several eating disorders (Ashwin and Muralidharan, 2015; Girija et al., 2018; Smiline et al., 2018; Girija et al., 2019; Shahzan et al., 2019). Anti bacterials, NSAID, Vaccines can also lead to eating disorders in children (Pratha et al., 2017; Vaishali and Geetha, 2018; Geetha and Thangavelu, 2019). Eating disorders in children can lead to infectious diseases, hypertension, hyperactiveness, cardiovascular problems, etc (Marickar et al., 2014; Priyadharsini et al., 2018a, 2018b; Girija and Priyadharsini, 2019; Paramasivam et al, 2020)

## **2. EATING BEHAVIOURS WITH EROSIIVE RISK :**

The common form ED of anorexia nervosa (AN) and bulimia nervosa (BN). ED are more often associated with high mortality which is presented in the report of a meta-analysis which identified that the death rate in patients with anorexia nervosa was 5.9 times greater than expected in a age and sex matched population. Similarly the death rates in patients with bulimia nervosa was 1.9 times higher. AN can cause life threatening medical issues such as cardiac arrest and suicide due to childhood obesity, congenital disturbance and neurological endocrine vulnerability leads to unhealthy weight loss, organ system affected by diet with anoxia, endocrine caused by saturation and wasting syndrome, mild diabetes insipidus prevalence 0.6% anorexia. Clinical manifestation low BP increased body hair, thin appearance, constipation, dehydration abnormal blood count, medical fluoxetine, oxazepam, cyproheptadine preferred (Strother *et al.*, 2012). BNis binge eating large amounts of food in a short time, they have a normal range of weight (Christensen and Haynos, 2020).

## **3. EATING DISORDERS IN PAEDIATRIC PATIENTS:**

The incidence of ED increases the prevalence of erosive lesions. Consumption of acidic sugar containing soda, creates acidic dissolution of the enamel. These conditions mainly affect molars and premolars, occlusal relief fades and dentin appears through enamel with yellow colour (Hicks et al., 2013). Presence of acid in the throat has a link with bruxism causing attrition and erosion. Continuous chewing of gum causes gingival recession (Colon et al., 2018). There is an increased plaque accumulation, elevation of microbial counts in the saliva and the biofilm. The plaque deposition around the gingival margin constituting bacteria constituting bacteria that are anaerobic and aerobic is capable of initiating periodontal diseases (Shahana and Muralidharan, 2016). Microbial load and acquisition of drug resistant pathogens in the oral cavity could also promote disease along with the ED (Priyadharsini et al., 2018b).

## **4. RESTRICTIVE FOOD INTAKE DISORDER :**

The disorder presents itself as a disturbance in the eating case of intake in food, fear of getting stomach aches and vomiting leads to nutritional deficiency in children PICA. Children who eat non-nutritional food substances such as diet, soap, chalk, hair etc., chews an object to be diagnosed with pica (Swanson, Crow and Merikangas, 2010). Pediatric patients who have an abnormal eating disorder that affects the oral health causing demineralization of tooth surface. Sugar is the essential factor which aids in development of carries along with diet, bacteria, saliva, frequent eating of meal snacks, cooled sugared beverages (Pediatrics and American Academy of Pediatrics, 2004). It is also associated with salivary flow states of the teeth result in disease such as Sjögren's syndrome, cystic fibrosis, xerostomia decreased

salivary flow which reduces availability of saliva buffer acid produced by bacteria that increased Damage in teeth to infants and enamel defects also with pits and fissure in molars (Fisher, 2006).

## **5. ORAL COMPLICATIONS :**

Oral complications which has been associated with ED are soft tissue damage, bleeding gums, swelling, chronic dry mouth, loss of glossiness of gums, gingivitis frequent vomiting cause acid flowing over teeth, tooth erosion infection pulp death, degenerative arthritis, pain in TMJ, problem in chewing and opening and closing mouth (Casamassimo *et al.*, 2014). Johansson *et al.*, compared oral health status of individuals with eating disorders with age and gender-matched control subjects. Multivariate analysis demonstrated an Odds ratio significantly higher in patients with eating disorders in comparison to normal individuals. These patients presented with dental problems, burning tongue, cracked or dry lips, dental erosion and gingival bleeding. Patients with binge eating behaviours were reported to present with worse perceived oral health and had significantly higher risk of dental erosion than those without such behaviour. Brandt *et al.*, aimed to evaluate the association between ED with dental erosion and caries. The team conducted a cross-sectional study in adolescent females of the Brazilian population. The Bulimic Investigatory test of Edinburgh identified 12 adolescent females with a severe risk of ED. Although the report presented with contrasting results showing no association of ED with dental erosion, there existed an association between BMI and ED, wherein high BMI was related with the habit of developing ED. A very recent study by Johansson *et al.*, investigated the diet and behavioural habits in patients with ED in comparison to normal healthy subjects. Based on the self-perceived disease state, patients were classified into two groups as ED-good and ED-bad. ED-good patients were reported with higher intake of caffeine and cola like soft drinks, where in both the groups were exposed to lower intake of regularly sweetened carbonated drinks when compared to normal subjects. The ED patients were also found to avoid regular dental check-ups compared to healthy controls. Regression analysis revealed high intake of caffeine, low intake of soft drinks and lower frequency of lunch meals, sweet biscuits as predictive variables in the ED-good and ED-bad groups respectively.

## **6. TREATMENTS AND PREVENTION:**

Dietary counselling risk factors of eating disorders as anticipatory guidance about dietary intake , nutritional intake, counselling to parents and caregivers creating awareness among them to decrease risk of dental caries, limiting sugar foods and drinks to meal time limit intake of sugary beverages. Encouraging to drink fluoridated water, brushing twice a day and while going to bed. Parents/caregivers avoid sharing through their mouth who have tooth decay (Section On Oral Health, 2014).

## **7. CONCLUSION**

The consequences of ED may invariably affect the epigenetic marks in an individual leading to early onset metabolic disorders. Hence, early detection of eating disorders not only ensures a more successful recovery period for the teeth but also accounts to overall well being of individuals and their progeny. Creating awareness programs to parents and caregivers motivate children to follow healthy lifestyles early diagnosing symptoms developing standardized health programs and oral health education programs to improve oral hygiene and habits. Encouraging oral maintenance habits rinsing mouth after purge, brushing Regularly and cleaning teeth. Proper nutritional intake of food and interventions.

## **AUTHOR CONTRIBUTION**

VM - Manuscript drafting and formatting; JVP - Conceptualization, manuscript editing, supervision; LA - Overall supervision.

## **CONFLICT OF INTEREST**

None

## **8. REFERENCE**

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