



Exploring the Clinical Evidence for the Effects of Eating Disorder on the Oral Cavity

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Article History	Abstract
Received: 06 June 2023 Revised: 05 Sept 2023 Accepted: 11 Sept 2023	<p>The research was focused on studying the affectations in the oral cavity caused by Eating Behavior Disorder (ED) and to be able to identify early the affected individuals for their recovery. A study was carried out based on a qualitative approach supported by a solid scientific basis. The study had a descriptive approach documenting the oral manifestations associated with ED. An empirical method was employed that collected and analyzed observable data. The results were obtained through an exhaustive review of scientific sources, identifying 22 relevant documents out of a total of 23. It was found that there are entities that propose diagnostic criteria for anorexia nervosa and bulimia nervosa. In addition, it was confirmed that ACT occurs more frequently during adolescence. These findings highlight the importance of providing comprehensive and specialized care to patients with ED.</p>
CC License CC-BY-NC-SA 4.0	Keywords: Affections, Oral cavity, Oral-dental, Anorexia, Bulimia.

1. Introduction

Eating Disorders (ED) are alterations in food intake, which cause injuries to the human body, which affect physical and mental health, which if not detected can lead to death. The manifestations of this disorder produce damage to the hard and soft tissues in the oral cavity. It has a high incidence in young people, since it is increasing and the alterations that occur at the oral level are related to the disorder. (1,2)

ACDs represent a public health problem due to their prevalence, their tendency to chronicity and severity. They are considered as mental disorders due to the appearance of weight control behaviors and the alteration in the consumption of food, as consequence alterations are obtained at the level of physical and psychosocial functioning, so specialized treatment is necessary. (3,4)

Its main manifestation is the desire to maintain a thin body, through the practice of bad eating habits, does not allow the body to develop properly, since proper nutrition is of vital importance for the human being, because by ingesting food and nutrients the body, contributes to its proper development. It should be noted that the human being through food experiences feelings of security and comfort, ranging from childhood: such as maternal feeding, so eating processes are related to emotions. (5,6)

These disorders have existed throughout history, through the culture of thinness considering it as the ideal body, adding to it that, currently fashion industries and consumer markets, through the use of media, associate the image of the thin body with the beautiful, attractive or perfect. (7)

The World Health Organization (WHO) notes that ACDs are considered a major health problem in society. In addition, according to the Statistical Diagnostic Manual of Mental Illnesses (DSM-5), it indicates that they are very serious diseases, which are associated with high morbidity and mortality, which in recent years has been increasing in developed countries. (8,9)

ACDs are severe disorders, which mainly affect the physical and mental health of the sufferer. They are pathologies of a psychiatric nature that most often affect adolescents and young women, where lack of control is caused in the process of feeding and weight, which affects physical, psychological and social alterations. (10)

The presence of ACDs in the last 50 years has been increasing, in a study conducted in the United States, reveal that approximately twenty million women and ten million men have suffered in their lives, some type of eating disorder. In addition, according to the Agency for Research and Quality in Health Care of the United States, it reveals an increase in the number of people hospitalized, since this disorder is associated with several medical complications, so it is highly recommended to perform a comprehensive treatment (medical, psychological and nutritional treatment), with a multidisciplinary approach. (11,12,23).

2. Materials And Methods

This research is based on scientific information, with a qualitative and descriptive approach, because it will detail the most frequent eating disorders and the repercussions that occur in the oral cavity.

Scientific information will be reviewed and analyzed with a focus on the clinical manifestations in the oral cavity in people suffering from eating disorder, through the use of platforms such as: Google Scholar, PubMed, Elsevier, SCielo, Lilacs, Dialnet.

Inclusion Criteria

As inclusion criteria, we will analyze scientific articles that have information that deal with Eating Disorders (ED) that consequently cause pathologies at the level of the oral cavity, information that is valid from 2016.

Exclusion Criteria

Articles that are not related to Eating Disorder will not be considered, their publication date is before 2016 and that are not on the aforementioned pages.

3. Results and Discussion

According to (8,24) eating disorders are mental disorders that are aimed at weight control by altering the consumption of food. These disorders cause physical, psychological and social alterations (1,25). Anorexia nervosa (AN) and bulimia nervosa (BN) are eating disorders that are considered a problem in the health system because ACDs have high mortality rates compared to all psychiatric problems.

Several entities propose diagnostic criteria for determining the presence of anorexia nervosa (AN). According to the WHO indicates that there must be: a body weight 15% below expected or body mass index of Quelet 17.5 or less. Avoid eating "fattening foods," self-induced vomiting, self-induced purging, excessive exercise, use of diuretics or food suppressants. Distortion in the appreciation of your body image. Presence of an endocrine disorder, amenorrhea occurs in women and decreased interest and sexual potency in men. Before puberty it causes a delay or stops pubertal development. (21,26) According to the American Psychological Association (APA), you must meet the following criteria: reduction in energy consumption, related to your needs, low weight related to age, sex and health. Fear of gaining weight even when your weight is very low. Alteration in the perception of their weight. (14,27)

(21,28), reports that the most frequent eating disorders are AN and BN, where the percentage of affection in relation between women and men are approximately 10 to 1, also reveals that the female population is the most affected by these disorders. (21,28). (22,29), report that through their research they were able to know that the adolescent population is susceptible to suffering from ACT. In 2008 and 2012 it was found that 92% and 84% of adolescents evaluated said they felt pressure from their friends, if they did not have the beauty standard imposed by society. 62% of those evaluated in 2008

reported that a certain aesthetic pattern is influenced through the media. 54% of teens yearn to have slim bodies like models or show stars. (22,30)

Benítez (1), in his study shows that 40% of the women evaluated have an obsession with thinness and 48% manifest body dissatisfaction. While with the male sex, 17% of men are obsessed with thinness and 27% manifest body dissatisfaction.

Ponce (3) in her research points out that women have a higher prevalence of probable ACT diagnosis and indicates that they are associated with social, family and media-related factors. (3)

The origin of this disorder is of multifactorial etiology, among the factors are: genetic factors (family history of ACT), social influence, dissatisfaction with their body image, dieting, depression, low self-esteem, presence of factors that generate stress (1). Ponce et al (3) show that among the etiological factors is the fact of being a woman, in addition to being a university student, problems in family communication, influence of the media, among these: the influence of television, where it shows messages of the perfect body and promotes several products to obtain it, influence of the internet. In addition, in his study he reveals that the evaluated population does not yet have experience in the workplace, but they have the idea that "job success is determined by the weight" they present. (3-5-23)

In several studies they show the use of tools that serve as screening, among these are: (EAT) Eating Attitude Test, assesses symptoms and behaviors in adolescents and adults. (EDE-Q) Eating Disorder Examination-Self-report Questionnaire, which evaluates eating habits and styles. (SCOFF) Sick, Control, out weight, Fat, Food. (EDI) Eating Disorders Inventor, assesses the attitude and behaviors related to food, weight and physical appearance. IMAGEN Questionnaire, is a Spanish creation that measures body dissatisfaction, among others (1-3)

The practice of ACTs causes several medical complications at the level of the systems and the organism in general, which according to Gabler (2) if not detected in time can lead to death. Several of these cases cannot be diagnosed, since patients with ACT feel shame and try to deny or hide that they suffer from any alteration related to ACT. Unfortunately, this disorder is on the rise in developing countries and represents high morbidity and mortality. (9-27)

For the early detection of this disorder, several aspects that may be present in the adolescent should be assessed, such as: showing too much concern for their body, using the scale several times and performing excessive exercise.

Reduction in the amount of food, skipping any of the daily meals, avoiding eating in public places, at the time of meal time is nervous. Their mood varies, showing irritable or depressed. Lazarus (15) also indicates the warning signs such as: accelerated and considerable weight loss, without any justifiable reason. (15)

Gaete et al (9), shows the findings that adolescents suffering from ACT can present, among these we find: weight fluctuations, delayed pubertal development, fatigue, cold intolerance, hair loss, brittle nails, dyspnea, palpitations, hematemesis, early satiety, amenorrhea, hypothermia, muscle atrophy, dull and thin hair, dry, pale skin, carotenoderma (yellowing of the skin), cold extremities, Russell's sign, bradycardia and hypotension. (9-27)

According to Raftu et al (19), it reports that the clinical manifestations at the level of the oral cavity appear after 6 months after the practice of this disorder. At the level of the oral mucosa can observe atrophy, caused by the deficit of vitamins and nutrients. Burning mouth, tongue presents erythema and atrophic glossitis due to the deficit of vitamins B1, B6, B12 (vitamins related to the turnover of epithelial cells). Gingival inflammation and predisposition to periodontitis, due to high rates of bacterial plaque due to oral hygiene deficit. Gingivitis and periodontal alterations due to the decrease in vitamin C. Injuries to the soft palate due to constant trauma and vomiting acids. Erythema labialis, the palate presents a yellowish coloration, fungal infections by *Candida*, xerostomia. (19).

Eating disorders (ED) are alterations in food consumption, accompanied by attitudes aimed at controlling body weight. These disorders are prevalent in developed countries, because they represent a public health problem because of the morbidity and mortality they represent in society. In addition,

these disorders generate alterations throughout the body, as well as at the psychological and mental level (3-8-9-27).

The information presented indicates that there are several entities that establish diagnostic criteria for the classification of eating disorders, such as the World Health Organization (WHO), the American Psychological Association (APA), the International Classification of Diseases (ICD-10), all of them are related in order to lead to a correct diagnosis. (21-28)

In several articles they show that tools such as surveys were used to assess ACDs, the tests are very useful and serve to analyze aspects such as: weight, physical appearance, meals, habits, eating styles, body dissatisfaction and more. (1-3), it should be noted that these tests are applied by professionals, in the case of adolescents these questionnaires are applied in educational entities.

The Eating Disorders that are analyzed are anorexia nervosa (AN) and Bulimia Nervosa (BN), which shows that there is a greater influence on women than on men, information that coincides with the research of Losada (10) and Fajardo (13). The origin of this disorder is due to several factors: such as society, the media, family history of ACT, exposure to stressors and more, that is, the individual may be influenced by biological, psychological and sociocultural factors (7-28).

ACDs are shown more frequently in the adolescent community, which are highly influenced by external factors such as the media, in addition to the pressure of the society that surrounds them, data that agree with the research of Ortiz (22) and Carmenate (8).

Parents or family members of adolescents should be alert to changes they may present, such as low weight, excessive exercise, or abnormal behavior related to food intake (15). Patients suffering from ACT often deny that they are experiencing this disorder, as they feel ashamed and try to hide it. Covering up this disorder contributes to its aggravation, which can lead to death. (2-30)

It is very important that the dental professional assesses all the signs and symptoms of the patients since, as the study of Borrego (20), the affectations at the level of the soft tissues are the first sign that manifests in TCA in the oral cavity. An interesting fact mentioned by Raftú (19) in his research indicates that patients with ACT have poor hygiene in the oral cavity, a fact that disagrees with Borrego (20), where he points out that patients suffering from this disorder perform toothbrushing several times a day, which indicates that they should be careful not to brush their dental organs as soon as they vomit, as it can damage tooth enamel with regurgitated acids.

The present research yields as characteristic semiological results and oral manifestations, which coincide with those mentioned by Raftú (19), since these guide the determination of this disorder. In addition, it reveals the deficit of knowledge about the ACT by certain dental professionals, which deserves greater emphasis on imparting information related to this topic, to have the ability and ability to detect this disorder by detecting the aforementioned characteristics.

Table 1. Semiological characteristics of people with ACT.

Semiological Characteristics Present In People With Acta	
Weight fluctuations	Fatigue
Pubertal developmental delay	Dyspnea
Cold intolerance	Palpitations
Hair loss	Hematemesis
Brittle nails	Amenorrhoea
Muscle atrophy	Hypothermia
Early food satiety	Pale skin
Dull and thin hair	Dry skin
Russell's sign	Bradycardia
Cold extremities	Hypotension
Carotenodermia	Dysphagia
Appearance of fine beauty	Odynophagia
Chronic diarrhea	Dehydration

Source: Villacreses M, Romero A, López J, 2022

Table 2. Oral manifestations present in the ATT.

MUCOSA ORAL		DENTAL ORGANS	ATM	GLANDS
Burning mouth	Periodontal alterations	Caries	Temporomandibular damage or pathology	Sialoadenitis in
Erythema	Injuries to the soft palate	Sensitivity dental	Tiredness of the jaw	
Atrophic glossitis	Erythema labialis		Orofacial pain	Major salivary glands. Inadequate salivary function.
Gingival inflammation	Yellowing on the palate			
Predisposition to periodontitis	Xerostomia	Dental erosion on palatine/lingual and occlusal faces	Tension headache	
Mucositis	Angular cheilitis			Sialodensis (slow, painless growth) of the salivary glands)

Source: Villacreses M, Romero A, López J, 2022

Several authors report that the care of a patient should be multidisciplinary, since this disorder does not affect a single organ or any specific place. This disorder affects the physical and mental health of those who suffer from it. So, you need a comprehensive approach with specialists, such as pediatrician, nutritionist, psychological and parental support which will contribute to the recovery process (9-17-30).

4. Conclusion

Through the present research, several articles were analyzed, in which it was possible to know the different manifestations that can occur in the oral cavity, such as alterations in the mucous membranes, dental alterations, alterations in the salivary gland and alterations of the TMJ, caused by Eating Disorders TCA, injuries that must necessarily be treated by the dental professional.

The main oral manifestations presented by people suffering from this disorder are: inflammation and alterations at the level of the oral mucosa (gingivitis, predisposition to periodontitis, etc.), dysfunction in the salivary glands (changes in secretion), damage to dental organs (erosion on the lingual/occlusal/palatales faces of the dental organs, tooth sensitivity, caries).

These alterations that occur in the oral cavity are due to: deficiency of vitamins and nutrients in the diet, trauma caused by regurgitated acids (practice of compensatory behaviors), inadequate technique or lack of oral hygiene.

In addition, several articles presented information about the semiological characteristics presented by people suffering from ACT, therefore, it is of vital importance to know these characteristics they present; In addition, with the support of adequate information obtained in the anamnesis, it allows us to guide towards a presumptive diagnosis, concomitantly, the patient will commit so that the future interventions of the dental professional have the expected success.

Additionally, different investigations showed that the etiology of ACDs is multifactorial, among which were biological factors (genetics, family history of ACT), psychological factors (low self-esteem, pressure from friends, family or society), sociocultural factors (socioeconomic level, lifestyle), media influence (they show stereotypes of thin bodies as perfection), In addition, an investigation mentioned being a university student, since the conditions in which he is subjected to stressors of the environment. All these aspects can influence the human being and generate the origin of some disorder in eating behavior.

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