

Xerostomia and Hyposalivation in Patients with Physical and Psychological Disabilities

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Disabilities are complex, dynamic, multidimensional and also contested; one or more key functions of the organism can be affected so to diminish an individual's freedom of expression and of action. The transition from an individual, medical perspective to a structural, social perspective was described as a shift from a medical model to a social model where individuals are more likely considered disabled by the society than by their own bodies. Disabilities represent a part of the human condition due to its bidirectional connection with poverty: the existence of disabilities can increase the risk of poverty, and poverty can increase the risk of disability. The experience of disability that results from the interaction of the state of health, personal factors and environmental factors varies greatly. Stress, anxiety or different unpleasant moments can cause a temporary decrease in salivary flow but a constant decrease can indicate the existence of a serious health problem. Xerostomia represents the subjective sensation of dry mouth. It can be accompanied by hyposalivation, an objective phenomenon but this is not always the case. Even if the patient declares the existence of xerostomia, this does not necessarily imply the existence of hyposalivation. Xerostomia can be determined by modifications in the oral cavity, as the sensitivity level to moistening, adverse reactions to certain drugs (anti-depressants, inhibitors of the conversion enzyme). The handicap, now called disability represents a special condition of the individual, reason why he must benefit of the support of the society and of those around him. Dental treatment in patients with psychiatric disabilities must consider the general and local involutive modifications, the existent overlay polypathologies that can influence the dental treatment. The study was conducted practically and included the direct interaction as part of the medical team and the registration of 145 patients presented on request with various types of psychological disorders, sometimes covered by the mask of somatic disorders, indicating a masked depression, or a physical depression, where the emotional condition of yesterday and today differ very much. Pointing out the role of the dentist in approaching patients with physical and psychical disabilities, motivating and making them aware of the necessity of adopting a proper oral hygiene for preventing oral disorders. The dramatic impact on the psyche and the well-chosen words stressed by the clinician increase patient awareness and motivation in order to make him collaborate during the treatment.

Keywords: psychiatric disabilities, overlay polypathology, xerostomia, hyposalivation, drug interaction

Disability is defined as the physical, psychic or mental state that limits an individual's activity in various ways; it appears as a human rights issue. It includes a struggle for choice, social justice and participation. The prevention of health conditions associated to disability is a matter of development.

The disability is not a feature of the individual, but a feature of the relationship between the individual and the environment; it stands for any restriction or lack (as a consequence of an infirmity) of the ability to fulfil an activity in the manner or at the level that is considered normal for a human being.

Disabled people include individuals with physical, mental, intellectual or long term sensory disorders, which, interacting with different barriers, limit the full and effective participation of individuals in society, in the same

conditions as the others; it is referred to as the result of the interaction between a person with an infirmity and the barriers of the social and behavioural environment he can come in contact with.

The action of environmental factors on the human body and on health, may it be positive (sanogenic), indifferent (rarely) or damaging (pathogenic) is, undeniable; at the same time, social and economic factors must also be taken into consideration.

As a state of invalidity, of congenital absence of an ability or its loss due to the chronic evolution of a disease, the disability differentiates the individual from the others, offering him a special psychological, biological, medical and social status; this is sometimes equivalent to the discrimination he is subjected to.

In the case of disabled people, both their integrity – the entire structure from a somatopsychic point of view, and

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functionality – the capacity of being psychically and biologically integrous, are affected, the two aspects being highly connected.

Deficiencies, whether sensory, psychic or neurological (development problems of the CNS with consequences on functionality, especially in the motor segment), generate adjustment difficulties, low capacity to communicate (or the loss of this capacity) and consequently, behavioural modifications. They are congenital or manifest themselves at an early age, in the first months of life.

The models that deal with the issue of disabilities are important because of their multiple unity: ensure the structure for the analysis of complex issues and situations, often characterized by an important emotional weight; structures (puts in order) information, beliefs and hypotheses in a comprehensive ensemble; ensures a reason for acting and making decisions; promotes a systematic, structural and predictable approach of the activities with humans; facilitates communication between specialists.

The models do not try to provide explanations to behaviours, but they are important in analysing, classifying and understanding certain phenomena.

Individual model versus social model. In direct correlation with the social model, the interventions cannot have another goal than trying to adjust and adapt the disabled individual, bringing him as close as possible to what is considered to be “normal”; the social model focuses on the disability as a relationship between people with deficiencies and the discriminating society, the disability being defined as the result of the disabling barriers imposed by the environment or by the interventions of the political.

The biopsychosocial model represents an integrant frame for the medical and social model when referring to incapacity. This model starts from the premise that none of the first two models offers a complete approach of the problem. In the biopsychosocial model, incapacity is approached as the interaction between biological, psychological and social factors.

The apparition or the existence of a psychiatric disorder can influence, totally or partly, an individual's functioning so that by himself, he will not be capable of harmoniously adjusting to the society; the person is directed to professional psychiatric care. Patients will be helped to find once again their normal functioning way, and in the case of chronic patients, medical support will be provided constantly. In relation with the patient, the attitude must express empathy, understanding, respect and it must address his competent side, trying this way to make the patient be sincere, being sure of the confidentiality of his relationship with the physician and the nurse.

Personality disorders include three groups that reunite the common features: paranoid, schizoid and schizotypal personality. The individuals suffering of one of these types of personality disorders are generally representatives of families with genetic background, especially schizophrenia. Clinically, they are characterized by a certain eccentricity, strangeness and awkwardness.

Paranoid personality is characterized by a high degree of suspicion in relation with the others, excessive sensitivity to insults which they refuse to forgive. Suspect the individuals around them of wanting to exploit them or hurt them in any way.

Schizoid personality is characterized by the tendency of isolation and relative lack of interest in the outer world. Social and emotional contacts are reduced in favour of solitary activities determined by a relatively intense but

awkward inner life. He is also indifferent to pleasant, fun activities. These features can become more intense and announce the debut of schizophrenia.

In the case of *schizotypal personality* it is noticed a deficit of social and interpersonal pattern marked by the low capacity of bonding with the others; strange and eccentric behaviour. Indicates social anxiety generated by paranoid fears.

Communication can fulfil the following key functions: information, motivation, emotional, obtaining information. Apart from the communication categories, at a different level, can be noticed four communication levels: verbal communication, non-verbal communication, paraverbal communication and metacommunication.

Being considered ill and incapable, disabled people, mainly those with intellectual disabilities are practically excluded from the educational system, their right to be hired is affected, turning them into a burden for the social security system. In the case of intellectual disabilities, intellectual abilities are affected at global level: cognitive, communication, motor and social capacity. Some individuals with intellectual disabilities cannot become aware of certain dangers or risks they come in contact with in everyday life and which can affect their personal safety.

The individuals with intellectual disabilities are victims of degrading treatments, abuse and discrimination. Intellectual disability is characterized by learning and understanding difficulties caused by the incomplete development of intelligence. There are no types of intellectual disabilities. Nonetheless, some disorders are associated to intellectual disability: the Down syndrome, autism, attention deficit hyperactivity and Asperger syndrome. Most of the people with intellectual disabilities are not mentally ill even though some of them might present behavioural disorders given the difficult situation they live in.

The individuals with intellectual disabilities must live, learn, work and enjoy the life as part of the community.

The term of *mental retardation* was used in 1971 to name not only the individuals with intellectual disabilities, but also those with severe mental disorders.

Disabled individuals are included in regular life environments and in the activities of the community: benefit of care from the community services according to their needs; relate with the other members of the community.

Disabled individuals experience the same emotions, states, joys and sufferings just like the rest of people. Mentally disabled people don't have a good impression about themselves and need to be encouraged and supported in order to feel free to express themselves.

Xerostomia represents the subjective sensation of dry mouth. Dry mouth, also known in medical terms as xerostomia stands for the situation when there is not enough saliva to keep the mouth moist. The causes of xerostomia can include modifications in the oral cavity, more precisely, the sensitivity level in relation to moistening, adverse reactions to certain drugs (anti-depressants, inhibitors of the conversion enzyme), Sjögren syndrome, old age, etc.

In patients with general diseases, the salivary flow rate in repose is lower because of the xerostomic medication or the condition itself (diabetes) which can lead to dehydration, dry mouth sensation.

The infection or the obstruction of salivary glands is often associated to dry mouth because these glands are responsible for the secretion of the saliva. Emotional

disorders as panic attacks generated by severe anxiety can cause dry mouth because of the stress or the *escape or fight* answer which decreases the production of saliva.

Xerostomia is not a disorder, but it can be a symptom for other disorders. Apart from the fact that it is disturbing, the lack of saliva can lead to the apparition of cavities and other disorders of the mouth. The saliva is responsible for cleaning the mouth and removing the particles that can give birth to different smells.

This disorder is more frequent in people under medication (more than 400 drug agents are said to be having side effects on the salivary function). The prevalence of xerostomia increases simultaneously with the number of drugs used. The cause of xerostomia is not yet completely identified. It is said that a key role is played by systemic disorders, side effects and drug interactions.

The dry mouth disease is frequently associated with periodontal disease as the saliva prevents the development of bad bacteria in the mouth, bacteria that generate gum disease, infections of the oral cavity and dental cavities. Leaving xerostomia act in peace, we encounter difficulties in eating, chowing, deglutition and even speech.

The individuals with acrylic prosthetics encountered problems in retaining this type of prosthetics, as its stability is closely related to the existence of saliva seen as the adhesion element. Most of the patients that presented the dry mouth syndrome can also present cracked lips or cracks near the labial commissure of the mouth.

The dry mouth syndrome appears as a consequence of hyposalivation and stands for the decreased quantity of saliva, being a disorder that appears mainly in ill patients and the elderly. It must be treated from the first months it appears as it can lead to the apparition of rampant caries (aggressive and expanded caries) and halitosis (bad breath).

The care of disabled patients represents a priority and requires special attention from the dentist. Before starting the dental treatment, certain safety measures are necessary: interdisciplinary examination, written consent from the attending physician and the patient's informed consent, or when necessary, of their next-of-kin.

Oral health represents a key element for people's state of health in general and, in particular for the disabled ones: oral health reduces or eliminates pain, ensures an appropriate food intake, better communication and self-esteem. Good oral health gives disabled people the capacity to face situations with more confidence.

Disabled people have a particular profile of oral health and, most definitely, require more treatment than the rest of the population. The high risk of dental cavities, gingivitis and oral cancer is determined by the inappropriate oral hygiene; the effects of medication; diet rich in sweets, high prevalence of tobacco.

The prevention of dental disorders is the key for avoiding dental problems.

The physician must answer the patient's needs and understand their disorders, he must not neglect the psycho-sensorial particularities of certain patients that come and ask for oral rehabilitation. The patient can sometimes be anxious, depressive, other times hostile, especially at the beginning of the treatment. The positive evolution of dental interventions correct partly or totally their psycho-somatic manifestations. The physiological and psychic limitations in providing oral care are difficult.

The coordination of the dental treatment for a disabled person is most of the times the joint responsibility of the dentist and the attending physician as well as of any other person involved in providing professional care to the

individual: nurse, social worker, psychologist, etc. A key factor for the success of oral rehabilitation programs of disabled patients is timing and the alternation of dental and medical treatment.

Sometimes, the administration of special drugs is necessary for bringing the plan to an end and keeping under control the patient's physical and psychic state. The medication must be agreed by the attending physician.

Experimental part

Material and method

The study was conducted practically and included the direct interaction as part of the medical team and the registration of 145 patients that came on request with various types of psychic disorders, sometimes hidden under the mask of somatic disorders, indicating a masked depression, or a physical depression, where the emotional condition of yesterday and today differ very much.

Most patients came with somebody accompanying them. The individuals with mental disorders are protected in such institutions as retiring houses just for people with mental deficiencies, specialized hospitals, rehabilitation centres for invalids and other specialized institutions where individuals with similar impairments are registered. Social services respect the basic principles of social care and comply with the goal of the principles established.

Results and discussions

64 patients from the total of 145 (44.13%) came from urban areas, and 81 (55.86%) from rural areas. 89 of them (61.37%) were men and 56 (38.62%) were women. The mean age was of 60 years, with different levels of education. 86 (59.31%) of the patients were institutionalized, and 59 patients (40.68%) were living with their parents.

Reasons for accepting the necessity of dental treatment

In general, the term *motivation* introduced in psychology at the beginning of the 20th century, refers to the energetic, dynamic aspect of human behaviour. It is defined as the *state of dissociation and tension that puts the organism in motion until it reduces the pressure and regains its integrity*. We cannot speak of the existence of certain reasons as dynamic forces only by themselves, but always in relation with objects, results, situations that satisfy the requests they correspond to, reflected in the mind of the individual as images, ideas, convictions, aspirations. Since reasons are the result of a process of thinking, of becoming aware of a necessity, in the interaction with the means for answering this necessity, the person's reason, the motivation will always be internal, intrinsic. The existence of these relations creates the internal conditions that determine and support the individual's activity, ensuring thus, the dynamics of his behaviour. Getting to know a person's motivation is equal to finding the answer to the question *why* does he do that?

The answer is difficult as it has multiple triggering causes and cannot be reduced to external stimuli. The activity and the reactions are also triggered by internal causes; their ensemble was named motivation. For some psychologists, reason is the generic term for any of the elements of motivation, being defined as the psychic phenomena that triggers, directs and energetically supports the activity.

The intention was to evaluate the degree of oral hygiene and the level of sanitary education; indications on the correct individual oral hygiene were offered considering the existent oral pathology and the treatment followed. There was an attempt of motivating the patient on the

necessity of undergoing treatment and adopting a correct hygienic behaviour: - 21 patients (14.48%) offered positive feed-back accepting both the treatment and the recommendations on personal oral hygiene; 58 patients (40.01%) offered positive feed-back for the treatment, but raised different problems in applying the rules on oral hygiene, 61 patients (42.06%) offered negative feedback; 5 patients (3.45%) left for fear.

The failure of motivation in some patients of different age groups might be explained by a certain psychological rigidity and commodity at the same time.

The patients with severe psychic lability, influenced by the phobic state of other patients don't always answer to situational realities which might anticipate a threat to their state of good, when this might to happen.

After conducting a full, general and local extraoral and intraoral clinical examination, the observation charts were filled in. treatment plan was decided considering the bio-psycho-social criteria. The patients collaborated in spite of their disabilities.

The psycho-affective disorders that put emotional mechanisms at risk when the treatment state is installed are dangerous due to the somatization of negative emotions with effect at cortical level. Inhibited emotions generate a continuous state of tension in disabled patients, and this appears on a permanent state of psychological tension.

The oral mucosa is the place there a large number of lesions can be identified, including ulcerous, vesicular-bullous, desquamative, lichenoid, infectious and malign. The presence of oral pathology is influenced by both ageing and pathological factors.

As the individual grows older, the mucosa atrophies, resulting a thinner and less elastic tissue. This modification in cellular structure, combined with the decline of immunological answers facilitates the high susceptibility to infections and traumas. Other factors that contribute to this situation are the increased incidence of systemic disorders and the administration of multiple drugs, especially those causing xerostomia.

The oral cavity offers a wide variety of surfaces exposed to the flow of oral secretions. The oral environment provides the conditions for an autochthonous and allochthonous microbial flora.

The microflora, rich and highly different, can present qualitative and quantitative variations throughout the entire life, depending of the alimentation, general and local pathological states, and hygiene, mechanical and chemical factors. The saliva protects the oropharyngeal mucosa from microbial pathogenic agents because it contains sulphocyanates with bacteriostatic action which are also present in the mucosa. The oral mucosa is constantly threatened by more or less pathogenic microorganisms.

The relationship between oral pathology and dental nutritional status

Between alimentation and oral health there is a complex relationship. While masticatory and diet stereotypes have local effects on teeth, saliva and soft tissues, the systemic impact of nutrition cannot be neglected. Proper nutrients are essential for the growth and the development of the tissues from the immune system, for maintaining them and preventing cell destruction; in general, they increase the individual's capacity to cope with infectious diseases.

The oral cavity is often one of the first places where the signs of disabilities make themselves present. When modified, the functional features of the oral cavity - type of taste, salivation, deglutition - can contribute to the malnutrition of the entire organism.

During the clinical examination it was observed the presence of lesions on the mucosa (candidiasis, paraprostatic stomatopathy, angular cheilitis, periodontal disease) so 101 patients (69.65%), with high nutritional risk, were identified with oral candidiasis, angular cheilitis, xerostomia, radicular carious lesions.

Xerostomia was present in 79 cases (54.48%) with the following symptoms - dry mouth and throat, cracked lips, red tongue and burnt tongue sensation, frequent thirst, difficult swallowing and even alteration of taste (bitter and unpleasant taste).

The apparition of this disorder can still be caused by many other things, as the side effects of certain drugs. Antidepressives, anxiolytics, antihistaminic, decongestive or antihypertensive drugs can induce the dry mouth sensation; bad breath can be associated the moment the secretion of saliva decreases. A key role of saliva is that of decreasing the risk of dental cavities or gum disease; the mineral substances in the saliva help lower the acidity level and remineralize the tooth structure, thus preventing the apparition of cavities.

The decrease of the salivary flow, related to xerostomia or not, leads to significant local and general modifications. The salivary function plays a key role in the perception of taste (correlated to food pleasure), the protection and repair of soft parts having also antibacterial features.

Xerostomia is correlated to the apparition of a certain discomfort, sleep disorders and lower quality of life. The quantitative modifications of the salivary flow can influence the capacity to adapt to wearing prosthesis (discomfort, states determined by the absence of the lubricating effect of the saliva), and maintaining the prosthesis (less adhesion, lower surface tension).

In cases with xerostomia, food should be soft, not spicy and fluids should be a little warm; fluids are extremely important during meals.

Hyposalivation present in 67 of our patients (46.20%) represents the situation in which the amount of saliva produced is reduced and it is different from xerostomia that comes together with the sensation of dry mouth. In the case of hyposalivation, there is less saliva in contact with the dental surface with a lower number of calcium and phosphate ions that along with fluoride might encourage the remineralization process. Without proper saliva there is a longer oral clearance of sugar and acid food and less urea available to increase the pH level of the bacterial biofilm. Apart from a higher cariogenic risk, salivary hypofunction leads to numerous other problems that influence the patient's quality of life. Among them, we can mention dental erosions, ulcerations of the oral mucosa, dysphagia, modification of taste, difficulty in wearing the prosthetics and candidiasis. The measurement of the salivary flow indicates if hyposalivation exists. The salivary flow rate is determined by measuring the unstimulated saliva (US) and the stimulated saliva (SS) in a certain time interval.

During the dental procedures, the relation between the physician and the patient is something normal; the patients who associated the dentist with a traumatic experience need more empathy and a higher level of understanding.

The dentist's personality can be an important factor in dental treatments. The dentist must be one of the finest specialists as the dental care is related to the psychological state.

Conclusions

The psychic system of humans, its structure and physiology, have been a controverted subject in social -

humanist studies at all times, in each individual perception, a sensitive element – the psychological balance – being always cherished by any person, society, at any time.

From the first contact with the patient, the goal of the medical act is to create a human therapeutic relationship and to set a diagnose to use as guide to the subsequent treatment.

The high impact of well-chosen words on the psyche and the stress attributed by the clinician increase the patient's awareness level and motivate him so that he ends up collaborating during the treatment.

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