

PalArch's Journal of Archaeology of Egypt / Egyptology

SOCIO-PSYCHOLOGICAL ASPECTS OF DENTAL TREATMENT OF PRIORITY GROUPS OF POPULATION: CHILDREN AND ELDERLY

Nadya Avramova

Department of Dental Public Health, Faculty of Dental Medicine

Medical University – Sofia, Bulgaria

Email: nadya.avramova@fdm.mu-sofia.bg

Nadya Avramova. Socio-Psychological Aspects of Dental Treatment of Priority Groups of Population: Children and Elderly -- Palarch's Journal of Archaeology of Egypt/Egyptology 19(2), 755-763. ISSN 1567-214x

Key Words: Behavior, Management, Dentistry, Children, Elderly

ABSTRACT

Oral diseases are one of the most widespread chronic non-communicable diseases (NCDs) among the population, having serious health and economic consequences. Based on certain criteria, particular priority groups of population, including children and elderly, could be distinguished. This paper was therefore aimed at discussing specificities in prevention and treatment approach towards children and older people as priority population groups, taking into consideration socio-psychological aspects of patient's management. Findings of the current review suggested that working with children requires more attention, patience, and predisposition before and during treatment. Different stages of child's development must be considered in order to apply appropriate methods to manage behavior (e.g., positive reinforcement, encouraging child, promising a toy, tell-show-do, audio/visual distractions, etc.) and achieve a favorable outcome of the treatment. Additionally, dental practice involving work with older people has its own characteristics and requires an individual approach to each patient, free of age-based stereotypes and supported by improved communication skills. Considering older patient's current physical, mental, and social condition is a key element of effectiveness and quality of dental care provided to this part of the population.

INTRODUCTION

Oral diseases are one of the most widespread chronic non-communicable diseases (NCDs) among the population, having serious health and economic consequences. The most prevalent oral diseases are dental caries, periodontal diseases, and cancers of the lips and oral cavity. Although these diseases are largely preventable as their etiological factors are well known, their high prevalence is a serious prerequisite for social and economic inequalities, especially in low-income and middle-income countries (Peres et al., 2019).

Based on certain criteria, particular priority groups of population could be distinguished. These are the groups of children and elderly, which have certain demographic characteristics and are usually the most affected by oral diseases. In addition, pregnant women should also be considered as a priority group of population regarding their current health condition which require increased attention by the dental professionals during treatment process. Patients with chronic systemic diseases (cardiovascular diseases, respiratory diseases, diseases of the urine or haematopoietic systems, etc.) as well as people working in harmful and hazardous conditions (heavy metals, acids, pesticides, etc.) also need special attention in terms of their oral prevention and treatment (Yaneva-Ribagina et al., 2015).

This article aimed to focus on specificities in prevention and treatment approach towards children and older people as priority population groups, taking into consideration socio-psychological aspects of patient's management. In this respect, dentists as healthcare providers need additional knowledge and skills beyond traditional medical disciplines. The current evidence suggests that knowledge from behavioral sciences is necessary and relevant to ensure implementation of an integral person-centered approach to dental care and biopsychosocial concept of oral health (McGrath, 2019), especially in cases involving management of priority groups of population.

METHODS

The protocol of the current paper was based on methodology including eligibility criteria and search strategy to map available sources related to the topic. Inclusion criteria were that the evidence had to be written in English (or Bulgarian, published by publishing houses approved by the Ministry of Education and Science); be research papers, review articles, appropriate books or textbooks discussing issues of interest; present contemporary data; be concerned with psychological aspects of dental management of children and elderly considering implementation of holistic approach in dental practice. Sources would be excluded if they were papers with title only (no abstract available) or without an adequate description.

Using "behavior", "dental management", "children", "elderly" and "biopsychosocial" as key words, a comprehensive search was performed via Pubmed/Medline and Google scholar electronic databases during the period 1988-2022. In-depth reading and structural-semantic method were used to present and discuss basic theoretical aspects of the current review.

RESULTS AND DISCUSSION

Child As a Patient in Dental Encounter – Development Characteristics and Psychological Techniques to Manage Behavior

There are some behavioral characteristics when working with children that support treatment. They are based on adequate knowledge of the rules of developmental psychology regarding changes in psyche in children and adolescents. It should be known that the development of the psyche is oscillating - alternating periods in which knowledge is accumulated, followed by periods

in which behavior is learned with it. Behavior can be learned only if it has been preceded by the acquisition of knowledge. In some periods, children with great interest strive to acquire knowledge from adults as much as possible. These periods of child development are early childhood (2-3 years), the primary school age (from 6-7 to 10-11 years) and the adolescent period of maturation of thinking (15-18 years). In the other periods, the prevailing aspiration is redirected to mastering the application of available knowledge. These are the last few months of the first year, preschool age (4 to 6-7 years) and the period of physiological maturation from 11 to 14 years. Dynamics of these features explains why in some periods children with interest and desire seek to acquire knowledge, and in others - skills (Madjarov, 2001; Bonev, 2019).

A typical example of the use of these features in the periods of development of the child's psyche is related to the models for training and building an adequate health culture. Childhood is the time when the foundations of a good health culture related to oral health can be laid. As defined, health culture is a set of health knowledge, skills, habits, and rational health behavior aimed at strengthening, protecting, and restoring personal health and health of the others (Yolov & Yaneva, 2011). In this aspect, the focus should be on two basic components in the formation of health culture: cognitive - knowledge, beliefs, values and behavioral - skills, habits, behavior. The respective periods of the child and adolescent development presuppose focusing on the abilities of the psyche in the separate periods in order to successfully master the elements of the health culture. Periods in which the desire to accumulate knowledge prevails would be appropriate for learning and providing a volume of knowledge that children will acquire with interest. The same stands for the periods when they are more likely to acquire skills - here behavioral models with an emphasis on practical training would be most effective. The same approach may be used when conducting oral hygiene activities aimed at building systemic habits and striving to maintain good dental health. Carrying them out in accordance with the established peculiarities in the development of children's psyche would ensure more efficient and easy assimilation of health knowledge, followed by its adequate application in practice in the form of rational health behavior. In addition, the outcome of training varies depending on the age at which it begins and its duration. A key point in the work of the dentist is to associate the age of the child with the selection of appropriate behavioral techniques to more easily influence and cope with this group of patients (Avramova, 2021).

Children, especially younger ones, interpret some sensations differently. They often give some magical quality to the procedures and things that happen. For them, the real world is still about fairy tales and fantasies. Sometimes they may think that a visit to the dentist is a kind of punishment for something. In this case, it is necessary to work with the parents "not to scare the child with a visit to the dentist." The first visits are especially important, as they can leave a lasting impression on child's attitude towards dentistry (Rajeswari et al., 2019). Given the fact that the most common chronic disease in childhood can occur in early childhood, namely early childhood caries, the role of the dentist in this regard is of particular importance (Seow, 2018; Alazmah, 2017; Colvara et al., 2021).

During the next age period (preschool age) the changes associated with the development of the psyche are dramatic. The new properties of the psyche allow the application of a whole arsenal of methods that support the healing process (Ali et al., 2021). Such a new important feature of the psyche, which appears for the first time in preschool, is the ability to predict behavior. This is due to the emergence of motivation to perform certain behaviors. Philosophy refers to it with the phrase "hierarchy of values" or "value system" (Madjarov, 2001). The existence of a hierarchy of motives allows performance of less pleasant behavior as a necessary condition preceding behavior with more pleasant consequences. In the fourth year, children are already able to perform unpleasant behaviors - for example, to visit the dentist or to assist in the event of possible treatment - as a necessary condition prior to the walk to the toy store (Avramova, 2021, Ali et al., 2021). In the third year, there is still no such motivational mechanism (Madjarov, 2001).

A characteristic feature of the behavior of children at this age is their waywardness and stubbornness, claims to independent behavior in the absence of experience and non-compliance with instructions and rules. For this reason, especially when it refers to building systemic oral hygiene habits, the tripartite involvement of parents, dentists, and patients themselves is mandatory. With special emphasis on the fact that around the age of 6 the first permanent molar erupts in the human dentition, the dentist should inform and direct parents' attention to this fact (Ebrahimi et al., 2010; Heydari et al., 2018). Eruption of permanent teeth is considered as a physiological indicator of the change of periods in mental, physical, and emotional development, as they are final qualities for use for the rest of life, like the accumulation of all knowledge and the result of this (Madjarov, 2001; Donnell et al., 2021).

In general, knowledge about the peculiarities of the development of the child's psyche in preschool age, as well as the dynamics of changes in this period are extremely important in the dental treatment of patients in this age group. The challenge in many clinical cases stems not so much from the complexity of the manipulation as from the psychological and personal characteristics of the patient (Avramova, 2021). It is known that a typical behavior and considered the norm in psychology in this age group is the tendency of children to lie, to show aggression towards others, disobedience, as well as pronounced conformist behavior. Other characteristics are the lack of ability to remember previous events for more than 1-2 days and the construction of emotionally colored memories, which must also be considered (Madjarov, 2001).

The task of the dentist is to build a positive and pleasant psychological climate that would help build positive associations in the child's psyche about the situation in the dental office and possible subsequent treatment. For this reason, a good strategy, especially for more active and aggressive children, would be to refrain from manipulating during the children's first visit. Familiarity with the situation, explanations, as well as the use of positive reinforcement (operant conditioning) at each stage of treatment, will facilitate the collaboration of the child at the next visit (Ali et al., 2021; Appukuttan, 2016; Roberts et al., 2010). Frequent use of praise stimulates the child and builds proper behavior. If the child's behavior interferes with treatment or is dangerous for the child, strict

instructions should be given. Dentists should explain to him exactly what to do and how to behave. Frequent and well-formulated praise and instructions could lead to good results and encourage the child to allow treatment. Tests on the height and volume of the dentist's voice show that when working with children, a moderately strong voice has the most positive effect (Greenbaum et al., 1990). Building positive and pleasant associations, despite the short intentional memory, will also facilitate the work of the dentist. Conversely - negative associations with the dentist and his attitude - unpleasant sensations, odors and pain, lack of patience and rudeness - would build a serious barrier to dental treatment not only at the moment, but as practice shows, will affect future behavior and attitude of this patient to dental treatment as an adult (Avramova, 2021). Children's propensity to imitate at this age can also be used to model their behavior and increase their level of cooperation. In this aspect, showing demonstration films with children who receive and assist in dental treatment, as well as the actual visualization of such patients in the dental office, as often applied strategies for dealing with non-cooperative patients, would significantly optimize the dentist's work (Delgado et al., 2021; Guinot Jimeno, 2014; Ali et al., 2021). Studies by Melamed et al. (1988) show that for children who are afraid of treatment, it is very helpful to screen films showing other children in a similar situation who, despite their fears, cope and carry out the treatment. The use of premedication in children is also recommended (Isik, Baygin & Bodur, 2008; Jain, Rathi, Thosar & Baliga, 2020; AlSarheed, 2016).

The adolescent period of child development also has its peculiarities. Along with physical development, changes in the psyche are also particularly intense. The change in emotionality at the beginning of puberty is particularly dramatic and it is therefore often called a crisis - children become critical and negative about adults' suggestions regarding their appearance and behavior and at the same time they are uncritical and strongly influenced by their peers, constantly comparing their qualities with those of their friends (Madjarov, 2001). Imitation is becoming a key tool for achieving physical and social attractiveness. The latter are usually in accordance with the accepted models in the community (weight, physique, facial features). An important element meeting these criteria is the presence of beautiful, clean, and white teeth, forming an aesthetic dentition and an attractive smile, as a means of communication and social impact. Therefore, these features in the development of the adolescent psyche can be used as powerful motivators for maintaining good oral hygiene (especially in patients without it) and a means of influencing and correcting their psyche as a way of thinking and behaving (Avramova, 2021).

In middle and late adolescence, changes in mental development continue. Thinking acquires uniqueness, creativity is built as well as an own style of behavior and individuality. Erik Erikson explains the emergence of intellectual uniqueness as follows: "The formation of identity begins where the usefulness of identification ends" (Madjarov, 2001). From a practical point of view for the dental professional, the use of identification or imitation of other people's behavior are already ineffective ways of management. Replacing this strategy with a new one, namely stimulating children's own, different, and unique behavior, would be an effective strategy to build authority and establish impact

on the patient. The latter are mandatory ingredients for the collaboration and active participation of the patient in the therapeutic process (Avramova, 2021).

Older People as Patients in Dental Practice - Physical, Mental, And Social Health Issues

The world’s older population continues to grow at an unprecedented rate. According to the World Health Organization between 2015 and 2050, the proportion of the world's population over 60 years will nearly double from 12% to 22% (WHO, 2021). There is a tendency for older people to seek dental care less often and to take less care of their oral health. The reasons for this are different.

Aging is characterized by physical, mental, and social changes (Madjarov, 2016, Dziechciaż & Filip, 2014). Deteriorated general health and difficult mobility are common reasons not to leave home and to be practically hindered from going to the dentist's office (Ho et al., 2021). Some older people become less critical about their dental hygiene and condition (Saarela et al., 2022). This is especially common in patients with mental health disorders such as depression, loss of cognitive abilities, dementia, and others (Delwel et al., 2017; Delwel et al., 2018). Some chronic diseases can also interfere with oral hygiene or denture care and lead to neglected attitude towards oral health. All this is related to accumulation of several problems regarding oral health of elderly (Hatton et al., 1989; Carvalho & Lussi, 2017; McCreary & Ní Ríordáin, 2011) - Fig. 1. Sometimes poor economic situation of older people does not allow them to visit the dentist's office and pay for dental services, which is also a barrier to accessing dental care (Avramova, 2021).

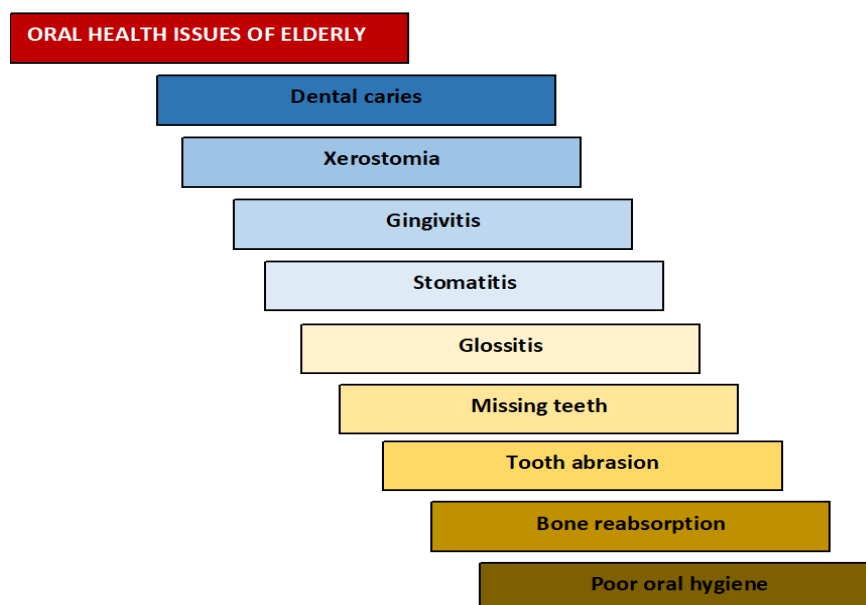


Fig. 1. Oral health issues in older people

Communication with older people can also be difficult, both because of progressive decline in brain function and chronic depression, and a lack of

willingness to talk to strangers, distrust of younger people, change of dentist, etc. (Davis & Reisine, 2015). In these cases, the leading factors of psychological management should be those that determine the quality of life. The dentist must assess the patient's life expectancy, future dental status, and patient's physical resources (Humphris & Ling, 2000).

A major psychological problem in dental practice when working with the elderly occurs with complete loss of natural teeth and functional limitations that occur subsequently. For patients who have preserved their natural teeth into old age, the prospect of impending loss, as well as the need for more financial resources needed to maintain residual dentition (which they probably do not have), may be experienced very hard. Additionally, the current emerging literature suggests the positive association of having a functional dentition (either natural or prosthetic) with good oral health-related quality of life (van de Rijt et al., 2020).

CONCLUSION

Two categories of patients in dental practice deserve special attention. These are children and old people. In general, working with children requires more attention, patience, and predisposition before starting and during treatment. The typical features in the different stages of the development of the child's psyche must be considered in order to apply appropriate methods to manage behavior and achieve a favorable outcome of the treatment. Dental practice involving work with older people has its own characteristics and requires an individual approach to each patient. The main line of behavior should be guided by the idea that older people have the right to a full life, good attitude, attention, and respect. In order to provide effective treatment and care to this part of the population, it is important for dentists to be aware of the dangers of applying age-based stereotypes. Only in this case, the treatment will be possible to carry out and it will be determined according to the individual needs of the patient and thus will ensure that people will remain full and active members of society for as long as possible (Humphris & Ling, 2000; Myers, 2015).

REFERENCES

- Alazmah, A. (2017). Early Childhood Caries: A Review. *J Contemp Dent Pract*, 18(8), 732-7.
- Ali, N.M., Husin, I.N., Ahmad, M.S. & Hamzah, S.H. (2021). Perceptions of behavioural guidance techniques for paediatric patients amongst students in a Malaysian dental school. *Eur J Dent Educ*, 25(1), 18-27.
- AlSarheed, M.A. (2016). Intranasal sedatives in pediatric dentistry. *Saudi Med J*, 37(9), 948-56.
- Appukuttan, D.P. (2016). Strategies to manage patients with dental anxiety and dental phobia: literature review. *Clin Cosmet Investig Dent*, 8, 35-50.
- Avramova, N. (2021). Medical and psychological problems in dental practice and their impact on the personality and professional activity of the dentist. Direct Services Ltd. Publ., Sofia [in Bulgarian].
- Bonev, B. (2019). Applied psychology for students and dentists. Bonev Publ., Sofia [in Bulgarian].
- Carvalho, T.S. & Lussi, A. (2017). Age-related morphological, histological and functional changes in teeth. *J Oral Rehabil*, 44(4), 291-8.

- Colvara, B.C., Faustino-Silva, D.D., Meyer, E., Hugo, F.N., Celeste, R.K. & Hilgert, J.B. (2021). Motivational interviewing for preventing early childhood caries: A systematic review and meta-analysis. *Community Dent Oral Epidemiol*, 49(1), 10-16.
- Davis, D.L. & Reisine, S. (2015). Barriers to dental care for older minority adults. *Spec Care Dentist*, 35(4), 182-9.
- Delwel, S., Binnekade, T.T., Perez, R.S., Hertogh, C.M., Scherder, E.J. & Lobbezoo, F. (2017). Oral health and orofacial pain in older people with dementia: a systematic review with focus on dental hard tissues. *Clin Oral Investig*, 21(1), 17-32.
- Delwel, S., Binnekade, T.T., Perez, R.S.G.M., Hertogh, C.M.P.M., Scherder, E.J.A. & Lobbezoo, F. (2018) Oral hygiene and oral health in older people with dementia: a comprehensive review with focus on oral soft tissues. *Clin Oral Investig*, 22(1), 93-108.
- Delgado, A., Ok, S.M., Ho, D., Lynd, T. & Cheon, K. (2021). Evaluation of children's pain expression and behavior using audio visual distraction. *Clin Exp Dent Res*, 7(5), 795-802.
- Donnell, C.C., Johnston, M.J. & Foley, J.I. (2021). The Six-Year-Old 'Adult'. *Prim Dent J*, 10(4), 74-82.
- Dziechciaż, M. & Filip, R. (2014). Biological psychological and social determinants of old age: bio-psycho-social aspects of human aging. *Ann Agric Environ Med*, 21(4), 835-8.
- Ebrahimi, M., Ajami, B.A., Sarraf Shirazi, A.R., Afzal Aghae, M. & Rashidi, S. (2010). Dental treatment needs of permanent first molars in mashhad schoolchildren. *J Dent Res Dent Clin Dent Prospects*, 4(2), 52-5.
- Greenbaum, P.E., Turner, C., Cook, E.W. 3rd & Melamed, B.G. (1990). Dentists' voice control: effects on children's disruptive and affective behavior. *Health Psychol*, 9(5), 546-58.
- Guinot Jimeno, F., Mercadé Bellido, M., Cuadros Fernández, C., Lorente Rodríguez, A.I., Llopis Pérez, J. & Boj Quesada, J.R. (2014). Effect of audiovisual distraction on children's behaviour, anxiety and pain in the dental setting. *Eur J Paediatr Dent*, 15(3), 297-302.
- Hatton, E.R., Gogan, C.M. & Hatton, M.N. (1989). Common oral conditions in the elderly. *Am Fam Physician*, 40(5), 149-62.
- Heydari, A., Shahrabi, M., Shafizadeh, M., Anaraki, E.A. & Aref, M. (2018). Parental Knowledge and Awareness of the First Permanent Molar. *Int J Clin Pediatr Dent*, 11(5), 382-5.
- Ho, B.V., van der Maarel-Wierink, C.D., Rollman, A., Weijenberg, R.A.F. & Lobbezoo, F. (2021). 'Don't forget the mouth!': a process evaluation of a public oral health project in community-dwelling frail older people. *BMC Oral Health*, 21(1), 536.
- Humphris, G. & Ling, M. (2000). *Behavioural Sciences for Dentistry*, 1st Edition. Churchill Livingstone.
- Isik, B., Baygin, O. & Bodur, H. (2008). Premedication with melatonin vs midazolam in anxious children. *Paediatr Anaesth*, 18(7), 635-41.
- Jain, S.A., Rathi, N., Thosar, N. & Baliga, S. (2020). Midazolam use in pediatric dentistry: a review. *J Dent Anesth Pain Med*, 20(1):1-8. Retraction in: *J Dent Anesth Pain Med*. 2020;20(2), 105.
- Madjarov, G. (2001). Development of the psyche in childhood and adolescence. Textbook for students in psychology. Veliko Tarnovo [in Bulgarian].

- Madjarov, G. (2016). Change of the psyche with age. Kushovaliev Publ., Sofia [in Bulgarian].
- McCreary, C. & Ní Ríordáin, R. (2011). Oral medicine and the elderly. *Dent Update*, 38(1), 30-2, 34-6.
- McGrath, C. (2019). Behavioral Sciences in the Promotion of Oral Health. *J Dent Res*, 98(13), 1418-24.
- Melamed, B.G., Siegel, L.J. & Ridley-Johnson, R. (1988). Coping behaviors in children facing medical stress. In: Field T, Schneiderman N & McCabe P. (Eds) *Stress and coping*. Hillside, NJ: Erlbaum.
- Myers, D. (2015). *Psychology*. Eleventh edition. Worth Publishers. New York.
- Peres, M.A., Macpherson, L.M.D., Weyant, R.J., Daly, B., Venturelli, R., Mathur, M.R., Listl, S., Celeste, R.K., Guarnizo-Herreño, C.C., Kearns, C., Benzian, H., Allison, P. & Watt, R.G. (2019). Oral diseases: a global public health challenge. *Lancet*, 394(10194), 249-60.
- Rajeswari, S.R., Chandrasekhar, R., Vinay, C., Uloopi, K.S., RojaRamya, K.S. & Ramesh, M.V. (2019). Effectiveness of Cognitive Behavioral Play Therapy and Audiovisual Distraction for Management of Preoperative Anxiety in Children. *Int J Clin Pediatr Dent*, 12(5), 419-22.
- Roberts, J.F., Curzon, M.E., Koch, G. & Martens, L.C. (2010). Review: behaviour management techniques in paediatric dentistry. *Eur Arch Paediatr Dent*, 1(4), 166-74.
- Saarela, R.K.T., Hiltunen, K., Kautiainen, H., Roitto, H.M., Mäntylä, P. & Pitkälä, K.H. (2022). Oral hygiene and health-related quality of life in institutionalized older people. *Eur Geriatr Med*, 13(1), 213-20.
- Seow, W.K. (2018). Early Childhood Caries. *Pediatr Clin North Am*, 65(5), 941-54.
- van de Rijt, L.J.M., Stoop, C.C., Weijenberg, R.A.F., de Vries, R., Feast, A.R., Sampson, E.L. & Lobbezoo, F. (2020). The Influence of Oral Health Factors on the Quality of Life in Older People: A Systematic Review. *Gerontologist*, 60(5), e378-e394.
- World health organization (2021). Ageing and health. Available from: <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health>. Assessed 19.05.2022.
- Yaneva-Ribagina, K., Vasileva, I. M., Avramova, N.T. & Mihaleva, S. I. (2015). Dental health. Priority population groups in regard to dental health. In: *Dental public health. Textbook for students in dental medicine*. Simelpress Publ., Sofia, 122-31 [in Bulgarian].
- Yolov, T. & Yaneva, K. (2011). *Social medicine, medical ethics, and public dental health*. Simelpress Publishing House. Sofia [in Bulgarian].