

The link between oral diseases and psycho-emotional state of children in orphanages-a literature review

Gedenidze L.¹, Tsitaishvili L.¹, Parulava S.¹

Abstract

Background: According to studies, children raised in orphanages have more psycho-emotional problems than those who grow up in families with parents. Psycho-emotional state and stress are directly related to poor oral health status.

Aim: A review of the correlation between the psycho-emotional state and oral health status of children in orphanages.

Methods: A review of the literature from Science Direct, Scopus, PubMed, and Google Scholar scientific databases was conducted using keywords such as: foster children; stress; psycho-emotional state; oral health. Search years - English-language articles published between 2010 and 2021. More than 50 articles have been analysed. Twenty-three of the most relevant articles were selected and discussed in detail. The studies concerned the psychoemotional state and stress of children in orphanages and their correlation to the state of oral health and the development of dental diseases. The saliva secretion rate under stress and the role of cortisol (stress hormone) in the development of dental caries and periodontal diseases were also considered.

Results: The studies have revealed a connection between oral diseases and the psycho-emotional state of children in orphanages. The connection between the stress and changes in the composition of saliva and the rate of its secretion has also been established. A significant relation between the hormone cortisol and caries/ periodontal disease has been found.

Conclusions: The literature review revealed that stressed patients need different monitoring and particular attention to their oral health. (TCM-GMJ March 2023; 8 (1):P22-P24)

Keywords: Orphanage children; Stress; Psycho-emotional state; Oral health

Introduction

Oral health is an important part of overall health and affects a person's well-being (1,2). Oral health is integral to overall health and quality of life, so neglecting it leads to health problems and impaired social integration (3,4).

According to the studies, the association between stress and poor oral health has been confirmed. The role of psychosocial factors, including the impact of stress on oral health and overall health, is of great interest (5). Stress can negatively affect oral health, masticatory biomechanics, and periodontal health. The probability of caries development is also increased (6).

Caries remains one of the most prevalent chronic diseases in the world, posing a heavy burden on the health care system (7). According to R. Shanbhog et al, the modern concept of dental caries involves the interaction of genetic and environmental factors, where biological, social, behavioural and psychological components are expressed in a very complex and interactive way (8). The effect of these factors is par-

ticularly noticeable in stressed patients, who need different monitoring to maintain their oral health (5). In this regard, inmates of orphanages represent a special group of children (9). As a result of the study, it was found that there is a high rate of emotional and developmental disorders in orphanages, which are closely related to socio-demographic characteristics. According to the study of Ahmad et al., orphans are more stressed, depressed, and prone to suicide (10,11). They have less access to social connections therefore high school, college, and university are in many cases inaccessible to them. This factor can be a factor triggering for a child's psychological tension (9,12,13).

According to the research, psychological problems arise in children even in well-organized institutions. These children and adolescents are vulnerable to stress due to living in a stigmatized environment. According to the research, the level of depression among children in orphanages is high (9). For orphaned children, separation from parents has a negative impact on their psychosocial, emotional and cognitive behavior (4).

Discussions

Studies of the oral health status of orphaned children are very scarce (11,14,15). According to the UNICEF, UNAIDS, and USAID, orphanages can be unfavourable for children's growth and development because children,

From the ¹Faculty of Medicine, Iv. Javakishvili Tbilisi State University; Tbilisi, Georgia.

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Address requests to: Lana Gedenidze

E-mail: lana.gedenidze7369@med.tsu.edu.ge

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in order to survive and develop, must grow up in a community and family environment that provides for their needs (11).

Children living in orphanages have an unsatisfactory state of oral health (14). According to studies, children living in orphanages are at high risk of oral diseases, and early detection of these diseases is most necessary for the timely prevention and control of diseases (14). Children living in orphanages do not receive proper preventive medical services (3,16). The studies have shown that many serious health problems in children in orphanages are not detected, and even if diagnosed, are not treated. Thus, many orphaned/abandoned children suffer from chronic diseases, the studies have shown higher rates of dental caries, gingivitis, and dental trauma in these children (11,14,17), which is probably related to group living (which often increases the risk of injury), neglect of oral hygiene, psychological stress, and unhealthy diet. In addition, these children do not receive the same care from adults as children living with their parents (1,2,14,18,19).

Worldwide, the prevalence of dental caries among institutionalized children is higher than among children living in their families(11). The prevalence of dental caries among children in Indian orphanages is 88.5%. Similar findings were reported among institutionalized adolescents aged 12-15 years in Yemen (84.7%) and among orphans aged 4-12 years in Saudi Arabia (96%). In China, it was found in 50% of orphans and adolescents aged 4-17 years (9).

The studies have also established a correlation between dental caries and stress, which can be explained by stress-induced changes in the composition and rate of saliva secretion (20,21). Saliva plays an important role in maintaining oral and dental health. Accordingly, its changes can cause oral diseases. According to the study by S. Tikhonova et al., "Stress can be defined as a real or perceived threat to physical or psychological integrity, that triggers a cas-

cade of physiological and/or behavioural body reactions aimed at maintaining homeostasis" (20). Psychological factors associated with stress, such as anxiety and depression, cause changes in saliva secretion, its reduction, i.e. hyposalivation and xerostomia. Xerostomia is defined as a subjective sensation of dry mouth. Studies show that dry mouth and hyposalivation are caused by the stress-related release of salivary biomarkers cortisol and calgranulin A (22,23). Excessive production of the hormone cortisol stimulates glucocorticoid receptors in the body and alters the function of certain neurotransmitters (eg, adrenaline, noradrenaline, serotonin), which can affect the CNS, emotional and cognitive function, as well as the metabolic and immune systems (20). Stress and xerostomia are important factors that negatively affect a person's quality of life. Along with dry mouth, patients report halitosis, swallow

ing and speech difficulties, as well as ulcers on the oral mucosa, pain and discomfort (22).

According to the study by S. Tikhonova et al., stress may have an implicit role in the development of dental caries. The relationship between caries and stress can be explained in a variety of ways, involving both lifestyle changes and unhealthy behaviour (e.g. excessive sugar intake, neglect of oral hygiene), as well as stress-induced changes in saliva composition and salivary secretion rate (20,21).

Conclusion

Data on the oral health of vulnerable children living in orphanages are very scarce, but available research shows that the level of stress and associated poor oral health in this population is higher than that of children living in their own families.

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