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A comparative study of perceived stress among individuals with dental caries and those without dental caries

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ABSTRACT

The central issue of the paper was to see the level of perceived stress among males with dental caries and those without dental caries, 100 males with pit and fissure caries and 100 males without dental caries were studied. Results of t shows significant differences between males with pit and fissure caries and males without dental caries. The higher level of stress was noticed in case of males with pit and fissure caries. The findings have been interpreted accordingly.

INTRODUCTION

Several pathologies of the oral cavity have been associated with various psychological variables such as stress, anxiety, self- esteem, depression causing periodontal disease, acute necrotizing ulcerative gingivitis, dental caries, and upper respiratory infections(3)

Dental caries is caused by the demineralization action of acids on the enamel surface. The acid is produced when sugars in foods or drinks react with bacteria present in the plaque on the tooth surface.

We may define dental caries as an irreversible microbial disorder of the calcified tissues of the tooth characterized by demineralization of inorganic part and destruction of the organic substance of the tooth, which often leads to cavitation. (Sivapathasundharm.B 2020)

Stress can be defined as a real or interpreted threat to the physiological or psychological integrity of an individual that results in a cascade of physiological and/or behavioural responses of the body to maintain homeostasis. Depression and stress are common afflictions caused by a variety of life conditions. They often put sufferers in a frame of mind that can lead to skipping oral hygiene routines. Antidepressants can lead to dry mouth. Often people who feel stressed and fatigued reach for sugary snacks and energy drinks, which can be harmful to their teeth.

In one of the first books on dentistry, Fauchard theorized in 1746 that dental caries maybe related to stress (9). The association between stress and heightened susceptibility to dental caries has been demonstrated in both human and animal studies (10).Studies show that adolescents tend to more likely develop negative body image, disturbed eating behaviours and high levels of stress(6). Students report stress taking and studying for exams being the greatest source of academic stress and depression due to competition and the large amount of content in less time.(7,8)

A similar cross-sectional study was conducted in a refugee camp in Tanzania, with an aim to analyse the caries experience in relation to perceived stress. They found a consistent association between caries experience and perceived stress (13).More recently, a study (14) investigated the relationship between distress and tooth loss using PSS. They concluded that behaviour and psychological stress only modestly attenuated socio-economic inequality in retention of < 20 teeth, providing evidence to support a mediating role of stress coping.

However, in another descriptive study, Hubbard and Workman (9) could not find a clear relationship between stress family events and dental caries in infants.

A recent study found that in Finnish adults between 35-54, depression was significantly associated with the number of decayed teeth.(8, 15).The results of another systematic review and meta-analyses show a positive association between depression and oral diseases, specifically dental caries, tooth loss, and edentulism, in adults and elders. (16)

OBJECTIVES

- To find out the level of stress among the individuals with dental caries
- To find out the level of stress among the individuals without dental caries
- To find out significant difference of stress among individuals with dental caries and without dental caries

HYPOTHESIS

There is significant difference in the level of stress among individuals with dental caries and those without dental caries

METHODOLOGY

STUDY DESIGN

This is a cross sectional comparative study

SAMPLE

The study has been carried out after obtaining prior approval from the Institutional Human Ethics Committee of Teaching Hospital and College. The sample comprises of 100 unmarried males with pit and fissure dental caries and 100 unmarried males without dental caries. All the respondents are in the age group 18-25 belonging to middle socio economic status having equal educational level (UG). The selected samples were Bengali Hindus.

TOOLS USED

1. Case study form
2. Oral examination
3. Stress scale- Cohen's Perceived Stress Scale.

DATA COLLECTION

The data were collected by the investigator individually from each sample as per an appointment schedule in their respective free time. The data were then tabulated and statistical analysis was done.

RESULTS

Table 1: Showing mean and SD of stress among males with pit and fissure caries and males without dental caries

	N	MEAN	SD
Stress male with pit and fissure caries	100	28.62	4.544
Stress male without dental caries	100	20.40	3.044

Table 2: Showing Mean, SD and t test value of stress among males with pit and fissure caries and males without dental caries

	N	Mean	SD	df	t
Stress male with pit and fissure caries	100	28.62	4.544	98	2.303
Stress male without dental caries	100	20.40	3.044		

Significant at 0.05 level

INTERPRETATION

- From the above findings it is evident that level of stress is higher in case of males with pit and fissure caries compared to males without dental caries.
- It is also apparent that there is a significant difference in stress levels among males with pit and fissure caries and males without dental caries.

CONCLUSION

It is thus critical that oral health be considered an integral part of physical and psychological health and emphasis be placed upon collaboration between oral and medical healthcare professionals to result in ideal treatment outcomes.

Stress can increase the susceptibility to dental caries by four possible mechanisms:

1. Affecting the immune system and compromising host resistance to cariogenic bacteria (3) partly by increasing serum and salivary catecholamines and corticosteroids. The cortisol level of the body increases during stress producing acid that can be determined using litmus test on the tongue creating a favourable environment for bacteria. A study concluded that children with and without dental caries differ significantly in the mean values of urinary catecholamines (5).

2. By reducing salivary secretion leading to decreased clearance of cariogenic bacteria- Subjective oral dryness and unstimulated salivary flow were significantly associated with perceived stress (11).

3. By unhealthy emotional eating habits leading to frequent snacking and more intake of sugar containing diet (5, 6)

4. By impaired performance of self-care habits (flossing teeth, brushing teeth) (12) leading to poor oral hygiene creating favourable environment for bacteria.

Hence, it is probable that the incidence of dental caries will be more in individuals with stress and depression.

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