ejpmr, 2016,3(11), 517-521

SJIF Impact Factor 3.628

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

Research Article

ISSN 2394-3211

EJPMR

CORRELATION BETWEEN SELF ASSESSED ORAL HEALTH AND DENTAL ANXIETY ON ORAL HEALTH STATUS OF YOUNG ADULT INDIAN POPULATION.

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Article Received on 08/09/2016 **Article Revised on 28/09/2016** **Article Accepted on 18/10/2016**

ABSTRACT

Dental anxiety can lead to avoidance strategies to evade dental visits. This in turn might affect the oral behavior and in turn impact the self assessed oral health of an individual. The aim of the present study is to understand the complex behavioral aspect of dental anxiety and its effect on oral health status. **Material and Methods:** The study was conducted among young adult population of Udaipur city. A self prepared questionnaire with self-assessed dental status and behaviour, as well as the Dental Anxiety Scale (DAS) was being used. Dental caries status was evaluated using decayed, missing and filled teeth index (DMTF). **Results:** Among the total young adult population normative DAS score was seen in 21% participants while high dental anxiety i.e. a DAS score of 13 or higher was seen in 33.5% participants. Higher levels of dental fear were reported by females.

KEYWORDS: Dental caries, DAS, Dental phobia, Dental visit, Tobacco.

INTRODUCTION

Despite the technological advances in modern dentistry, anxiety about dental treatment and fear of pain associated with dentistry remains widespread. Dental caries is a prevalent pathology that affects almost everyone throughout his or her life.[1] While Dental anxiety is a common fear and a major issue with respect to the provisions and access to dental care.

Annual examinations in the dental clinic can be expensive, invasive and uncomfortable for many individuals. Recently medico-legal and ethical obstacles further complicated these procedures. Consequently the use of questionnaires and intensive (self- perceived achievements) became a common method for collecting diagnostic data and performing oral health surveys.[2-4]

In 2001, it was reported that dental diseases account for 5-10% of total health care expenditures, surprisingly exceeding the cost of treating cardiovascular diseases, cancer and osteoporosis in industrialize countries.[5] Dental health promotion and preventive strategies are clearly more affordable and sustainable.

Although not life threatening, dental diseases are detrimental to the quality of life during childhood through old age and can affect self-esteem, eating ability, nutrition and health.

Dental anxiety can be a prime reason for missed or cancelled dental appointments in general practice.

In addition, it can lead to irregular dental attendance, delay in seeking treatments or its avoidance all together. This can have detrimental consequences for the oral health of dentally anxious people. Onset of dental anxiety is thought to originate in childhood[6], peak in early adulthood[7] and decline with age.[8]

WHO caries diagnostic criteria for decayed, missing and filled teeth(dmft) is the simplest and most commonly used in epidemiologic surveys of dental caries, since it quantifies dental health status based on number of carious, missing and filled teeth.[9-10]

Levels of dental anxiety must be associated with poor clinical oral health status. In addition, the periodontal status of dentally anxious patients is reported to be poor.[11]

There is a necessity felt to find a correlation between the dental caries and dental anxiety in this part of the country where no such study has taken place.

MATERIAL AND METHODS

The research was conducted in Udaipur (Rajasthan, India) which was further divided into 5 zones i.e north, south, east, west and central for fair sample collection. Two clinics from each zone were randomly selected. The study sample consisted a total of 200 out of 235 young adults (50% males and 50% females) of age group 19-25 were examined.

Inclusion criteria

This study was done on young personnel (19-25 years old) who had their dental screening done in private dental clinics. The population had no common background regarding place of birth, education and socioeconomic setting.

Exclusion criteria

Some subjects were excluded from this study to maintain equal number of males and females so that the study could be emphasized equally on both sexes while others were excluded because of being non cooperative and due to incomplete questionnaires.

The survey was based on a self prepared questionnaire consisting of questions regarding self-assessment of dental status and oral behavior (i.e. daily dental hygiene regimen), as well as COHRA dental anxiety scale and dental anxiety which was then distributed to be filled by the participants. To ensure anonymity, names were not recorded on the questionnaires.

The COHRA questionnaire (DAS) was used to measure dental anxiety.[12] The scale ranges from 4-20. Anxiety rating from 9-12 indicated moderate anxiety, 13-14 indicated high anxiety[12-13] and 15-20 revealed severe anxiety or phobia which may be managed with the dental concerns assessment but might require the help of a mental health therapist. Population normative mean scores have been reported as 8-9.

This scale is common, well-known, reliable and valid for evaluating dental anxiety.[14-15] The WHO caries diagnostic criteria for decayed, missing and filled teeth[9] (DMFT)was used to evaluate dental caries status.

Informed consent was obtained from all the individuals who voluntarily participated.

The study was approved by the ethical committee of DARSHAN DENTAL COLLEGE, UDAIPUR.

RESULTS

TABLE 1 Table presents the distribution of participant's answers. Over 24% reported their last dental visit more than 3 yrs ago and less than half of the participants (40%) made regular visits to a dental clinic in almost 6 months.

Approximately 1/3rd of the participants (39%) brushed their teeth once a day or not at all. Participants assessed their dental status as good (34%), fair (48.5%) and poor (17.5%) respectively.

TABLE 2 Self assessed dental status, Patient assessment of their dental treatment needs and DMFT score. Of all the participants, 21% assessed their dental treatment needs as high and 52.5% as moderate, while 26.5% reported no dental treatment at all TABLE 3 Anxiety rating among sample population.

Normative DAS score was seen in 21% participants while high dental anxiety i.e. a DAS score of 13 or higher was seen in 33.5% participants. Higher levels of dental fear ($p = 0.001$) were reported by females.

There was a statistically significant correlation among self-reported dental status, participants assessment of their dental treatment needs and DMFT score ($p < 0.0001$).

Anxious participants assessed their dental treatment needs as higher as compared to non-anxious participants.

FIGURE 1: A graph was plotted between the COHRA anxiety rating and the mean decayed score separately for males and females. This revealed that the mean decayed score increases as the dental anxiety increases.

FIGURE 2: A graph was plotted between the COHRA anxiety rating and the mean filled score which revealed that the mean filled score decreases abruptly for both males and females as the dental anxiety increases.

Study also revealed that smokers have higher D&M levels than non smokers.

TABLE 1: Self assessed dental status and oral behavior

		N	N%
Smoking	Yes	75	37.5%
	No	125	62.5%
Sex	Male	100	50%
	Female	100	50%
Last dental visit	< 1 Yr.	80	40%
	1-3 Yrs.	72	36%
	> 3 Yrs.	48	24%
Self assessed dental status	Good	68	34%
	Fair	97	48.5%
	Poor	35	17.5%
Frequency of tooth brushing	Once	78	39%
	Twice	112	56%

	>= 3 times	10	5%
Oral hygiene interface	Yes	94	47%
	No	106	53%

Table 2: Self assessed dental status, Patient assessment of their dental treatment needs and DMFT score

		N	Mean	Standard Deviation	Significance
Self assessed dental status	Good	68	11.59	2.06	P-0.043
	Fair	97	10.88	2.41	
	Poor	35	12.00	3.41	
Patient assessment of treatment needs	No need	53	11.40	3.10	P – 0.745
	Few T/t	105	11.38	2.35	
	Numerous T/t	42	11.05	2.20	

Table 3: Anxiety rating among sample population

Anxiety rating	N	%	Anxiety state
5-8	42	21%	Normative mean score
9-12	91	45.5%	Moderate anxiety
13-14	34	17.0%	High anxiety
15-20	33	16.5%	Severe anxiety or phobia

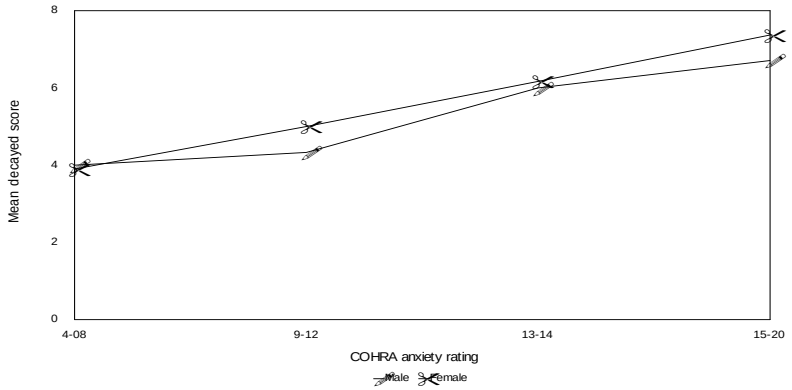

Fig. 1 Relationship between COHRA anxiety score and mean decayed score

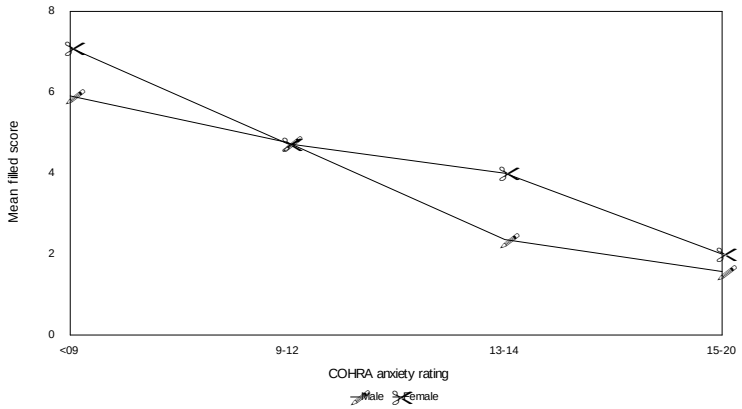

Fig. 2 Relationship between COHRA anxiety score and mean filled score

DISCUSSION

It is well known that anxiety and other emotions may cause various physiologic responses which are associated with the autonomic nervous system.[22] The physiologic mechanism by which psycho logic factors could produce these bodily dysfunctions may decrease the effectiveness of the defense mechanisms of teeth, rendering them more reliable to attack by caries as is already proved in the previous studies.[23-24]

Several attempts have been made to develop self assessed indices for evaluating dental status but almost always the correlation between self perceived oral health and epidemiologic index registration is very weak.[2,4,16,17]

According to the results of this study, we have been able to predict the results of the clinical examination in terms of caries presence by simply asking straight forward questions regarding dental status. In the present study, we have equal distribution of males and females so that the results could not be discriminated and could be applied to the general young population.

Less than one half (40%) of the participants reported regular dental visits, once very 6 months and rest of the participants were less conscious about their dental examination as studies have shown that they visited dental clinics in about 1-3 yrs. This emphasized on the fact that dental clinicians should focus more on educating patients regarding the importance of follow up and periodic examinations. Extensive epidemiologic research has shown that smoking is related to periodontal disease[18] and to other oral complications.[19]

The present study showed that smoking was associated with high caries levels which are in support for previous reports[20-21] and may indicate a lower health care awareness and attitude among smokers.

A review of previous epidemiologic data obtained from DMFT surveys[20,25] conducted in Israel reveals a steady, almost linear trend of increased caries severity that peaked in 1986, arrested and then appeared to decline. The DMFT decrease in our study indicated a clear decline in caries severity compared to previous studies.

Dental anxiety, a problem for many adults and children, acts as a barrier to treatment by avoiding the treatment or attending treatment irregularly or by visiting a dentist for emergencies only. Further more, these findings could be compared with some local studies which have employed similar measures of dental anxiety and thus, suggest that dental anxiety remains widespread in India as like Britain.[26]

Patient anxiety thus may cause major management problems for the dental team, such as additional time required for treatment, missed appointments and raised pain thresholds. The management of patient anxiety is thus a major cause of stress for clinicians.

In our study, anxious patients assessed their dental treatment needs as higher which might result in further avoidance and postponing of the treatments. Our findings also showed that the use of patients self assessment was a good predictor of patient dental status.

The information presented in this study could serve as a tool for public and preventive dentistry, as well as can help the dental practitioner in managing patients according to their complaints and self-assessments.

Furthermore the use of patient self-assessment should be a part of dental training. Students should be urged to ask their patients questions regarding their dental status during the first interview itself so that it could help them to accomplish more effective time and patient management.

In addition, the prevalence of dental anxiety is somewhat similar to findings.[27-28] However, lack of national data covering a wide range of age groups, differences in measurement and categorization of dental anxiety make it difficult to make direct comparisons.

CONCLUSION

In this study, a correlation was found between self reported tooth status, participants' assessment of their dental treatment needs and DMFT scores as well as a relation was found to exist between dental caries and dental anxiety.

It was found that anxious participants assessed their dental treatment needs as higher as compared to non-anxious people. The study also revealed that the mean decayed score increases and the mean filled score decreases as the dental anxiety increases.

The study focused on the fact that smokers have higher D and M levels than non-smokers.

It is now proved that simply asking the patient straightforward questions regarding their dental status may predict the clinical examination results. This could help the dental practitioner to accomplish more effective time and patient management.

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