AWARENESS OF DENTAL CARIES AND DENTAL HEALTH STATUS AMONG PATIENTS VISTING A LOCAL HOSPITAL

Eisha Imran[1], Quratulain Khan[2], Mariam Khan[3], Farah Mushtaq[3], Iffat Raza Niazi[4], Nabiya Shahroz[2]

[1] Science of Dental Materials,Islamic International Dental College, Riphah International University Islamabad.

[2] Operative Dentistry & Endodontics Department,Shifa College of Dentistry, Islamabad.

[3] Operative Dentistry & Endodontics Department,Rawal Institute of Health Sciences, Islamabad.

[4] Operative Dentistry & Endodontics Department, Islam Dental College, Sialkot.

ABSTRACT

Objective: *To assess the awareness of dental caries and its association with dental health status among adult patients.*

Materials and Methods: *A cross sectional study was conducted on 164 patients reporting to the diagnostic department of Rawal Dental Hospital, Islamabad from December 2018 to June 2019. Dental caries was scored as per WHO criteria.*

Results: *The sample was equally divided for male and female. The age group of the participants ranged from 18 to 78 years, with the mean age being 38.05. Among 164 patients, 116 patients had lower jaw affected in combination with upper jaw while 103 patients among 164 patients had upper jaw affected together with the lower jaw.*

Conclusion: *There was a high rate of dental caries among the younger age, secondary education and in miscellaneous group, which comprised; housewives, retired elderly and unemployed. This showed that there was lack of knowledge regarding oral health practices and maintenance. Early identification of dental caries with effective oral health promotion programs providing practical knowledge prevents the problem of caries.*

Keywords: *Dental caries, Dental health status, Oral health, Periodontal Diseases*

INTRODUCTION

Oral health is fundamental constituent of general health and a requisite for overall well-being. An increasing number of investigations signifies dental caries and periodontal diseases as dominant factors of oral afflictions across the globe.[1] However, integrated and persistent efforts by health care workers and individual's personal actions can adequately restrain these diseases.[2] Managing such conditions necessitates a need for early diagnosis which can solely be performed by a detailed oral examination.[3]

Literature identifies dental caries as the foremost oral disease with a high prevalence in developing countries. [3,4] Despite measures to improve the oral health status through fluoridation, tooth restoration and preventive programs for healthy lifestyle, obstacles still exist for underdeveloped countries due to diet, scarce public health services and lack of knowledge on account of their socioeconomic conditions.[5,6]

World health organization emphasized on preservation of oral health and featured it as an effectual economic strategy to lower the incidence of oral diseases and thus sustaining a healthy lifestyle.[7] Various cross-sectional investigations documented an interrelation between knowledge , oral health status and occurrence of dental caries, thus a comprehensive understanding of oral health is essentially required. [8]

There is worldwide decline in the prevalence of dental caries among children and suboptimal oral

Correspondence:
Dr. Quratulain Khan
Assistant Professor, Operative Dentistry & Endodontics department, Shifa College of Dentistry, Islamabad.
Email: quratulainkhan10@hotmail.com
Contact: :+923315035247

health knowledge and behavior in adults, consistent with other studies[9] A survey organized by world health organization (WHO) spotlighted the high prevalence of dental caries in children, in contrast to other chronic diseases such as hay fever and asthma.

Hence, the present study aims to investigate the awareness of dental caries and its association with dental health status among people in a hospital of Islamabad, Pakistan. The rationale is to facilitate healthcare workers by providing a guideline data for planning awareness programs.

Objective:

The objective of the study was to assess the awareness of dental caries and dental health status.

MATERIALS AND METHODS

The approval for this cross-sectional study was attained from the ethical committee of Rawal Institute of Health Sciences (Protocol number 010/18). Data was collected from patients attending, Rawal Dental Hospital who was 18 years and above with various dental problems. A total of 164 patients were enrolled for a period of 1 month from December 2017 to January 2018. A written informed consent was signed from each patient. Patients less then 18 years of age were excluded.

A detailed visual clinical examination of each tooth was performed under artificial light, using a mirror and probe. Radiographs were not taken. Same investigator conducted the investigations, hence free from any sort of biasness. Demographic details which include age, gender, educational and occupational status were recorded on a treatment card. WHO criteria were used to score caries index. Information of carious teeth, with respect to anterior and posterior segments of upper and lower jaw affected were documented. Additional information to inspect awareness among these people was also recorded by conducting interviews.

Data was analyzed on Statistical Package for Social Sciences (SPSS), version 16 by calculating the descriptive variables as mean ± SD and frequencies and percentages. The demographic characteristics of respondents were associated with the three awareness categories i.e., aware, partially aware and unaware. Further analysis was done by making categories of aware (if they knew about their dental health), partially aware (if they only knew about the affected teeth) and unawareness (if they didn't have idea about the dental health and caries) of caries in respondents. Dental Health status was measured in terms of jaw affected and carious tooth position. The continuous numerical variable like age was compared among the three awareness categories using ANOVA test. The categorical variables like gender, education and occupation were compared using chi-square test. A p-value ≤ 0.05 was considered as statistically significant.

RESULTS

The sample size consisted of 164 patients. An equal gender distribution was obtained for males 81 (49.4%) and females 83 (50.6%). Patient's age range varied from 18 to 78 years, while the mean age

was 38.05 years. Majority of patients 55(33.5%) were in the age group of 21 to 30 years.

Planned comparisons among the people in regard to the level of education, revealed that the incidence of caries was highest among the group of people who have received secondary education 48 (29.3%) followed by the professional group 36 (22%), higher education group 33 (20.1%) while the lowest incidence of caries recorded, was among illiterate 27 (16.5%) and primary group 20 (12.2%). Further findings documented that "other group" which constituted house-wives, retired elderly and unemployed 80 (48.8%) revealed highest incidence of caries while the lowest was found in health care providers 1 (0.6%). Table 1

Out of 164 patients, 138 (84.1%) presented with a chief complaint of carious lesion. The highest frequency of carious lesions was in the lower jaw 61 (37.2%) and than in the upper jaw 48 (29.3%). Overall, it was found that the highest frequency of affected teeth were in the posterior segments Upper; 76 (46.3%) and Lower; 94 (57.3%) than in anterior segments. Findings of carious lesions with respect to tooth position, presented 122 (74.4%) affected posterior teeth, 10 (6.1%) anterior teeth, while the number and percentage of patients with both anterior and posterior teeth affected with carious lesions were 32 (19.5%). Table 2

The demographic factors were assessed according to the primary outcome of study i.e., awareness of carious teeth. Comparison of level of awareness was done as shown in Table 3. A statisitically significant

difference was obtained for education and occupation (p-value, < 0.001). The highest level of awareness was obtained for the professional education group 30 (31.9%). For occupation, the highest level of awareness was obtained for others group 38 (40.4%).

A statistically insignificant difference was obtained in the mean ages (p-value, 0.192) and level of awareness was assessed and compared between the genders which was also not significant (p-value, 0.750).

DISCUSSION

The purpose of this study was to configure a framework for organizing programs in order to promote awareness of oral health. The findings of present study aim to validate dental health status of patients who attended Rawal Dental Hospital, which predominantly caters to locals from suburbs of Rawalpindi. Dental health is correlated with general health.[5,6] Overtime, a considerable literature has been developed on implications of oral diseases on individual's style of living and its primordial role in prevailing an epidemic.[10] It is now known that presence of oral disease affects quality of life.

Table 1: Distribution of patients according to Socio-Demographic characteristics

VARIABLES	FREQUENCY (PERCENTAGE
Gender	
Male	81 (49.4%)
Female	83 (50.6%)
Age	
18 - 20	5 (3%)
21 - 30	55 (33.5%)
31 - 40	46 (28%)
41 - 50	30 (18.3%)
51 - 60	19 (11.6%)
Above 61	9 (5.5%)
Education	
Illiterate	27 (16.5%)
Primary	20 (12.2%)
Secondary	48 (29.3%)
Higher	33 (20.1%)
Professional	36 (22%)
Occupation	
Students	7 (4.3%)
Teachers	11 (6.7%)
Administration	28 (17.1%)
Health care provider	1 (0.6%)
Labor	25 (15.2%)
Other professional	12 (7.3%)
Others	80 (48.8%)

Table 2: Frequency of Presenting Complaint and Affected Tooth in each Jaw

VARIABLES	FREQUENCY (PERCENTAGE %)
Presenting complaint	
Carious/ Cavity	138 (84.1%)
Periodontal Issue	19 (11.6%)

Prothesis	5 (3%)
Alignment of Teeth	2 (1.2%)
Jaw affected by caries	
Upper Jaw	48 (29.3%)
Lower Jaw	61 (37.2%)
Upper and Lower Jaws	55 (33.5%)
Upper jaw	
Anteriors	14 (8.5%)
Posteriors	76 (46.3%)
Anteriors and Posteriors	13 (7.9%)
N/A (No carious lesion)	61 (37.2%)
Lower jaw	
Anteriors	5 (3%)
Posteriors	94 (57.3%)
Anteriors and Posteriors	17 (10.3%)
N/A	48 (29.3^)
A carious lesion with respect to tooth position	
Anteriors only	10 (6.1%)
Posteriors only	122 (74.4%)
Anteriors and Posteriors	32 (19.5%)

Table 3: Comparison of Level of Awareness of Carious Teeth

VARIABLES	AWARE	PARTIALLY AWARE	UNAWARE	P-value
Age				0.192**
Mean + Standard Deviation	36.49 + 13.16	39.43 + 14.17	41.86 + 14.94	
Gender				0.750
Male	48 (51.1 %)	22 (44.9 %)	11 (52.4 %)	
Female	46 (48.9 %)	27 (55.1 %)	10 (47.6 %)	
Education				<0.001
Illiterate	3 (3.2 %)	9 (42.9 %)	9 (42.9 %)	
Primary	6 (6.4 %)	4 (19.0 %)	4 (19.0 %)	
Secondary	29 (30.9 %)	5 (23.8 %)	5 (23.8 %)	
Higher	26 (27.7 %)	2 (9.5 %)	2 (9.5 %)	
Professional	30 (31.9 %)	1 (4.8 %)	1 (4.8 %)	
Occupation				<0.001
Student	5 (5.3 %)	1 (2.0 %)	1 (4.8 %)	
Teacher	10 (10.6 %)	0 (0.0 %)	1 (4.8 %)	
Administration	25 (26.6 %)	1 (2.0 %)	2 (9.5 %)	
Health Care Provider	0 (0.0 %)	1 (2.0 %)	0 (0.0 %)	
Labor	7 (7.4 %)	12 (24.5 %)	6 (28.6 %)	
Other Professional	9 (9.6 %)	3 (6.1 %)	0 (0.0 %)	
Other	38 (40.4 %)	31 (63.3 %)	11 (52.4 %)	
*Chi Square Test **One way ANOVA				

Patients between the age-group 18 to 78 years, with presenting complaint of carious lesions was prodigious 84.1%. The findings of this study, depicting occurrence of caries in patients, was found in conformity with previous studies [11] Increase in urbanization augmented facile accessibility of fermentable carbohydrates to these regions thus intensifying the prevalence of oral diseases.[13] The effects of urbanization have changed dietary habits from rustic to refined which have contributed to increased frequency of dental caries

Furthermore, comparative evaluative findings, contingent on jaw affected and tooth position revealed perceptible involvement of lower jaw (37.2 %) in contrast to upper jaw (29.3%) while on the other hand in relation to tooth position, posterior teeth were profoundly engrossed (57.3%). These findings tie well with preceding literature.[12] Occlusal architecture, comprising various grooves, pits and fissure is the fundamental reason for mandibular posteriors being frequently involved in carious lesions, consequentially their structural design withholds the food particles for extended period of time as the salivary action is restrained. Moreover, the favorable effects of saliva occurred on mandibular anterior teeth, thus they are slightly affected by caries (3%).[12]

Periodontitis is apprehended as a common disease by global epidemiological surveys and its prevalence is more intense in developing countries when evaluated against developed countries. These findings exhibit presence of periodontal disease, constituting 11.6% of participants in the study group. Contrary to the results of Silla and Pastor, 37% of the participants (35-44 years old) showed signs of periodontal diseases in Spain [13,14] while in another study it was found that the highest frequency of periodontitis occurred in the age groups 30 years and above.[15] Results of Silla and Pastor indicate association between periodontal pockets and independent variables such as preliminary education, low social class, male predilection and smoking. Another novel finding by Carasol et al in 2016 associated age with periodontal conditions. [14,16] So, from the results of our findings we can speculate that the rationale behind lower periodontal cases is lower mean age group of participants (38.05) as compared to previous studies.

These findings were found in accordance with previous literature as the majority of participants were from laborer's (24.5%) and "others" group (48.8%) which comprised housewives, retired elderly and unemployed and thus were unaware of the significance of oral health.

The results of this study reinforce that socioeconomic factors, primarily low level of education is related to occurrence of dental disease. Therefore, there is an immense need to create awareness among this neglected class of society by arranging dental camps for screening dental disease in rural area where the majority population of this class resides. Secondly training programs should be designed to indoctrinate the masses for preventing such diseases.

CONCLUSIONS

Regular dental checkup of all the health workers should be made every 6 months in their respective health care centers. Health education should be given to all the health workers to enhance their awareness, knowledge and practices toward oral health care and maintenance and to increase their screening capacity for the common dental problem which will serve the community in the long way. There is an urgent need for further studies and research in this area as very limited previous data is available.

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