

Research Article



Oral Health Assessment, an Epidemiological Survey among Dental Patients from Lahore, Pakistan

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Abstract | Objective: Present study was conducted to assess the oral health practices, oral hygiene habits and associated dental problems among subjects from Lahore, Pakistan. **Methods:** This cross sectional epidemiological study was consisted of sixty two, 11-56 years old dental subjects from both genders enrolled from Jinnah hospital, Lahore for oral examination. Questionnaire included the questions regarding basic demographic information, medical history, life style and behavior and dietary history was distributed among enrolled subjects and they were interviewed using the World Health Organization health protocols. **Results:** From the dental enrolled subjects, 30.6% patients have chronic diseases which included kidney dysfunction, digestive problems, respiratory diseases, Diabetes, bone and joint problems and hypertension. The prevalence of cavities was high 82.3% among dental patients and remaining have swollen gums, abscess and pain and of them 75.8% were underwent through past treatment of dental filling, implant, extraction and root canal. Teeth sensitivity and chewing difficulty was experienced by 88.7% of subjects. For dental hygiene, tooth brushing was carried out by 85.5%, miswak by 9.7% and low percentage of rinsing practice that was 4.8%. 91.9% of the subjects have visited the dentist when needed and the remaining percentage have practice of dentist visit one month or two months. About dietary history of usage of artificial sweetener, candies, ice-cream, rusk, carbonated beverages, chewing gums, cookies, snakes, eggs, meat, milk, cheese, yogurt, fruits, vegetables etc. was varied among subjects with respect to daily, weekly and never use. **Conclusion:** Awareness programs should be conducted to promote oral health awareness and its impact on systemic health amongst the general population of Lahore. Continuous implementation of oral health awareness programs in community can improve the oral health and better oral health practices results in better quality of life.

Keywords: Oral health, Dietary history, Chronic diseases, Dental hygiene, Awareness programs

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INTRODUCTION

Many human beings believe that an attractive smile and good teeth are indicator of accurate oral fitness. In fact, oral fitness contributes to self-belief and preferred systemic fitness (Jain et al., 2013). In 1948, world health organization (WHO) came up with a new and more broadened meaning of the health. The exact definition states that health is, "a complete state of physical, mental and social well-being and not just the absence of infirmity". Then it

states that dental health necessity be taken into consideration while certifying the term well-being (Butler, 1974). Humans gather dental practices as they develop into youth (Sanjay et al., 2014). Oral sicknesses may additionally cause signs and symptoms inclusive of ache, soreness, altered flavor, and a burning sensation. Additionally, oral signs and symptoms may intervene with the chewing of food, pronunciation of certain phrases and sounds, and smiling and socializing with confidence (Slade and Spencer, 1994). Generally, the oral mucosa is harbored by the microbial

communities commonly termed as biofilms. These biofilms and the contaminated or poorly sterilized oral surgical tools are the major causes of systemic infections and other disorders that mainly include heart diseases, respiratory problems, diabetes mellitus, and severe gynecological complications (Roberts et al., 2010). Satisfactory oral health knowledge and personal practices containing diet guidance and caries attention are necessary for good oral health (Deinzer et al., 2010; Parker and Jamieson, 2010).

This is the first epidemiological survey in Lahore, Pakistan related to oral health assessment among different age groups. Main objectives of this study were: (1) To monitor the oral health status among literate and illiterate people. (2) To evaluate developments of oral diseases and conditions. (3) Assessment of efforts to prevent disabilities and diseases.

MATERIALS AND METHODS

STUDY DESIGN AND SAMPLE SIZE

This cross sectional epidemiological study was carried out among the subjects and a questionnaire was distributed to them. Total 62 questionnaires were filled and each question was explained to all participants. Voluntary participation of the dental patients in the survey was made and interviews were conducted after the consent of patients. Questionnaire was based on the following data.

DEMOGRAPHIC INFORMATION

For basic demographic information, questions of patients name, age, gender, occupation, number of family members, blood group, area of residence, level of education were included.

MEDICAL HISTORY

Medical history of the subjects was comprised of following questions: (1) What type of dental problem are you currently suffering from? (2) Have you undergone any tooth treatment during the past year? (3) If yes, specify? (4) Does any of your family members suffer from dental problems? (5) How many members of your family are suffering from dental problem? (6) Do you suffer from any chronic disease? (6) If yes, specify which one?

LIFESTYLE AND BEHAVIOR

For lifestyle they were asked for (1) What do you use for dental hygiene? (2) When do you brush your teeth? (3) How often do you visit your dentist? (4) Do you smoke?

DIETARY HISTORY

Dietary history of the subjects included the questions (1) Do you find difficulty in having certain foods because of tooth/ gum problems? (2) If yes, what type of food item

creates the problem? (3) Do you use any artificial sweetener? (4) Do you use flavored cereals? (5) How often do you drink carbonated beverages? (6) How often do you eat cheese? (7) How often do you eat candy? (8) How often do you eat ice cream or butter? (9) How often do you eat meat and eggs?

STATISTICAL ANALYSIS

The data were collected and compiled on MS Excel 2010 derived from questionnaires. This data was analyzed through one way analysis of variance (ANOVA) by using SPSS the Statistical Package of Social Science version 20.00.

RESULTS

This epidemiological survey was consisted of (n= 62), 11-56 years old dental subjects from Jinnah hospital, Lahore for oral examination. Of these forty six (74.19%) were females and sixteen (25.81%) were male subjects. Their age ranges were $\leq 20y$ of 14 (22.58%) subjects, 21-30y of 19 (30.65%), 31-40y of 15 (24.19%) and $>40y$ of 14 (22.58%) of subjects. Of the total subjects 53.23% were housewife, 29% were students and 17.74% were related to different occupations of teacher, baker, painter, clerk, shopkeeper, fisherman, cook, driver, musician and employee at Wapda. Literacy rate was 82.3% and 17.7% were illiterate. The prevalence of cavities was high 82.3% among dental patients and remaining 17.7% have swollen gums, abscess, infection and pain and of them 75.8% were underwent through past treatment of dental filling, implant, extraction and root canal. Among the dental patients with cavities 46.8% have had family history of dental cavities and 53.2 % had not. Percentage of subjects for teeth sensitivity and chewing difficulty was same 88.71%. They have sensitivity to hot, cold, sweets, hard and chewy food. Among the dental enrolled subjects 30.6% patients have chronic diseases which included kidney dysfunction, digestive problems, respiratory diseases, Diabetes mellitus, bone and joint problems and hypertension and 69.4% have not. For dental hygiene, tooth brushing was carried out by 85.5%, miswak (traditional tree-twig) by 9.7% and low percentage of rinsing of teeth that was 4.8%. (Table 1). Frequency of oral hygiene was that 85.5% of the subjects did their teeth cleaning before breakfast, 11.3% before bed, 1.61% after breakfast and 1.61% five times. 93.55% of the subjects have visited the dentist when needed and the remaining percentage have practice of dentist visit one month (1.61%), two months (1.61%), 1 year (1.61%) and never (1.61%). Only 8% of subjects were smoking and remaining were not. About dietary history of usage of artificial sweetener, flavored cereals, candies, ice-cream, rusk/naan/bread, cakes, bakery products, fast foods, carbonated beverages, chewing gums, cookies, snakes, eggs, meat, milk, cheese, yogurt/

lassi, fresh, canned and dried fruits, nuts, jam, fruit juices, vegetables, chewing gums, sweetened drinks etc. was varied among subjects with respect to daily, weekly and never use (Table 2). A significant difference was found among all the variables $p < 0.05$.

Table 1: History of patients with tooth problem.

| Parameters | Yes | Yes (%) | No | No (%) |
|------------------------------|-----|---------|----|--------|
| Smoking | 5 | 8.06 | 57 | 91.94 |
| Chewing difficulty | 7 | 11.29 | 55 | 88.71 |
| Use of artificial sweeteners | 2 | 3.23 | 60 | 96.77 |
| Past Treatment | 46 | 74.19 | 16 | 25.81 |
| Family History | 29 | 46.77 | 33 | 53.23 |
| Chronic Disease | 19 | 30.65 | 43 | 69.35 |
| Teeth Sensitivity | 7 | 11.29 | 55 | 88.71 |

$P = 0.0042 < .05$, Significant

Table 2: Effect of junk food on patient's dental health.

| Parameters | Daily | Weekly <1 | Weekly 1 | Weekly >1 | Never |
|-----------------------------|-------|-----------|----------|-----------|-------|
| Use of Bread/Rusk/Naan | 31 | 9 | 15 | 5 | 2 |
| Use of Snacks | 5 | 29 | 9 | 10 | 9 |
| Use of Cookies | 4 | 29 | 13 | 10 | 6 |
| Use of Flavored cereals | 1 | 33 | 7 | 5 | 16 |
| Use of Cakes | 1 | 28 | 12 | 10 | 11 |
| Use of Bakery products | 1 | 24 | 6 | 8 | 23 |
| Use of Fast food | 12 | 32 | 11 | 5 | 2 |
| Use of Fresh fruits | 14 | 6 | 13 | 26 | 3 |
| Use of Canned fruits | 33 | 13 | 7 | 6 | 3 |
| Use of Dried fruits | 5 | 30 | 8 | 6 | 13 |
| Use of Nuts | 8 | 32 | 6 | 5 | 11 |
| Use of Jam | 1 | 22 | 6 | 3 | 30 |
| Use of Fruit juice | 5 | 30 | 4 | 9 | 14 |
| Use of Raw vegetables | 6 | 20 | 12 | 17 | 7 |
| Use of Milk | 23 | 14 | 7 | 10 | 8 |
| Use of Yougurt/Lassi | 11 | 15 | 8 | 16 | 12 |
| Use of Cheese | 1 | 6 | 4 | 8 | 43 |
| Use of Meat | 8 | 11 | 9 | 29 | 5 |
| Use of Eggs | 9 | 13 | 12 | 24 | 4 |
| Use of Carbonated beverages | 3 | 24 | 8 | 15 | 12 |

| | | | | | |
|-------------------------|------|-------|------|-------|-------|
| Use of Sweetened drinks | 2 | 19 | 12 | 13 | 16 |
| Use of Ice cream | 3 | 34 | 7 | 5 | 13 |
| Use of Candies | 3 | 16 | 4 | 7 | 32 |
| Use of Chewing gums | 3 | 11 | 1 | 4 | 43 |
| Average | 8.04 | 20.83 | 8.38 | 10.67 | 14.08 |

$P = 0.0000 < .05$, Significant

DISCUSSION

The survey has provided a wide-ranging indication of dental hygiene practices, awareness and lifestyle of people related to their oral health. About eighty percent (80%) of Jordanian people went through dental checkup and treatment on an uneven basis and visited the dentist only for emergencies (Taani, 2002). This percentage is near about to our percentage that 93.55% subjects only visited dentists when they needed. This demonstrated that people do not have awareness of their regular dental examination. It was observed in past study that majority of the enrolled subjects used tooth brush and tooth paste to clean their teeth (Goel et al., 2015; Kumar et al., 2017; Zaborskyte, 2003). This investigation is correlated to our study that 95.2% of the subjects did teeth cleaning with brush and miswak. This could probably reflect the awareness or affordability for tooth brush and paste among the study population or this indicated that participants do have basic knowledge about teeth cleaning. In a previous study carried out in Chennai reported that children used charcoal as a medium to brush their teeth than the tooth brush (Mahesh, 2005). Tooth brush usage is key measure of oral health hygiene (Hitz, 2011). However, in another study miswak using subjects were higher (59%) as compared to our study (Okemwa et al., 2010).

Major percentage (92.4%) of students was reported for their teeth cleaning and among them 48.7% of students cleaning teeth once daily. 55.8% of them having a dental check-up in the last 6 months. Concerning smoking, 63.4% stated to have never smoked though 17.3% described that frequent smoking (Shah, 2017; Sreenivasan, 2016). These findings are correlated to present study. Oral health practices including diet, actual oral hygiene and smoking are pivotal to the occurrence of oral diseases.

Enrolled subjects of the present study have dental associated problems and past studies have proven that poor oral hygiene persons had increased risk of developing several oral health complications (Axelsson et al., 2004).

Results of present study declared the fact that participants are unaware of the ways of practicing good oral hygiene.

These findings presents a challenge to improvement of oral health in the 21st century. Dental service utilization, patients' compliance, and aprofessional style oriented strategies toward prevention might be useful to improve the oral health (Rimondini et al., 2001; Yin et al., 2017). Kressin et al. (2003) studied that multiple hygiene behaviors were associated with greater tooth retention. So, dental health education can only be tailored if there is a baseline data about people's current oral hygiene behavior.

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CONFLICT OF INTEREST

The authors declared that they have no conflict of interests.

AUTHORS CONTRIBUTION

All the authors contributed equally

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