ORIGINAL ARTICLE

COMPARISON OF ORAL HYGIENE PRACTICE & AWARENESS IN RURAL LAHORE

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ABSTRACT

This study was aimed at assessing the improvement in the dental hygiene practice and subsequently the oral health among the population in outskirts of Lahore aged 12 - 79 years following the changes made in educating the population regarding oral health and its diseases, a year ago. The survey was conducted on World Oral Health Day at a Camp held in a private Dental college OPD in Lahore.

A cross-sectional survey was held in the Oral Diagnostics Department in September 2012. All new patients aged between 12 and 79 years of age, who came for the World Oral Health Day Camp were included in the sample. All other age groups and patients who were undergoing treatment in the hospital previously were excluded. The data for this study were collected by carrying out an interview with the patients using a pre-tested questionnaire. Following the interview patients also underwent an oral examination. The disease status of the patient was recorded which included oral disease and conditions such as caries, periodontal disease, attrition, TDI, oral lesions and all combinations.

Data analysis was done using the IBM SPSS version 20. The results showed the nature of dental hygiene as practiced by all patients and their current oral health status. The final sample size was 185(male 89 and female 96). The largest group was of 30-39 years. It was observed that 93% of the sample practiced daily tooth brushing and 46% had an intake of one teaspoonful of sugar in their regular tea. It was established that despite following regular regime of tooth brushing, regular dental checkups and reduced sugar consumption, the level of caries was the highest (36.2%) in all oral conditions observed. Chi-square analysis revealed a statistically significant association between gender and sugar consumption (p=0.001) and also between Tooth brushing and education (p=0.001). There was significance between education and gender and disease and tooth brushing while a high significance in gender and sugar, age and education, education and tooth brushing, and age and tooth brushing was observed in 2-tailed significance of Pearson's correlation.

It can be understood that positive changes brought in the dental hygiene knowledge and practices of the far flung and rural population can establish a marked difference in the improvement of their oral health and subsequently impact the disease trends overtime.

Key Words: *Oral Hygiene, one year after the camp.*

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INTRODUCTION

Oral health promotion focuses on enabling people to promote health oral habits. Tooth brushing is one of the most widespread habits; recommended twice daily. [1] Oral self care practices have been proved to be an effective preventive measure at individual level for maintaining good oral health as part of general health. [2] Poor oral health statuses suggest the need of oral health education and oral health promotion programs in the society. [3] One of the underlying factors that influence the pattern of health behaviour is individuals' concern about their health. Studies have shown that brushing, particularly with fluoride tooth pastes, reduces dental caries [4], but the effect of oral hygiene on periodontitis has not been clearly demonstrated. [5] It has also been observed that Traumatic Dental Injuries (TDI) may lead to restriction in biting, difficulty speaking clearly, and feeling embarrassed to show the teeth and thus proves it to be a public health problem. [6] The pattern of health behaviour contributes to the variation of disease affection among individuals exposed to similar environmental risk factors for a disease. Heightened concern is associated with improved health status and practices while low concern is associated with poor health status and practices. [7] Research has shown that the most persuasive reasons for adopting preventive dental practice behaviours are susceptibility to disease and social and aesthetic benefits.[8] It is expected that the concern of individual toward his mouth and the attitude to dentists who provide dental care would play an important role in determining their oral health condition.

METHODOLOGY

The present study was carried out in sequel to a similar study done a year ago. The aim was to observe any positive improvements in the hygiene and oral health habits of the same population.

A World Oral Health Day camp was held at a private Dental college in Lahore in September 2012. The cross-sectional survey was held in the Oral Diagnostics Department during the camp. All new patients aged between 12 and 79 years of age, who came to attend the Camp, were included in the sample. Entry to the camp for all patients along with full treatment when required was provided free of cost. Alongside treatment and examination, patients were also given health education awareness by giving them "chair-side advice" at the end of their session. Free toothpastes and toothbrushes were also distributed in all patients courtesy of Shield Corp.

Patients below or above the age range were excluded along with those who were being previously treated in the hospital. The data for this study were collected by interviewing the patients using a pre-tested questionnaire. The questionnaire included questions related to the patient's oral heath, hygiene habits including the patients' method of tooth brushing, age, gender, their education level, consumption of sugar in daily tea, and usage of other oral hygiene aids such as floss. Following the interview patients also underwent basic oral examination. The oral examination highlighted the oral health conditions present in the oral cavity such as caries, periodontal disease, trauma, attrition and oral lesions. Those patients who required treatment were referred to the concerned department.

Data entry and analysis was done using the IBM SPSS version 20. Chi-square analysis and Pearson correlation R with two-tailed test of significance were performed.

RESULTS

The final sample size was 185. Data entry and analysis were done using the IBM SPSS version 20. The results showed the improvement of dental hygiene due to increased frequency of tooth brushing, regular dental checkups and lesser consumption of sugar in daily tea. The sample comprised of 131 males and 119 females, the largest age group being 30-39 years. It was observed that 93% of the sample practiced daily tooth brushing and 47.6% had used one teaspoon of sugar in their tea as compared to 27.6% of two teaspoons sugar consumption. The level of education of 29.7% of the sample was from grade 5 to O-level/ Metric (Table 1). It was noteworthy that despite following regular regime of tooth brushing, regular dental checkups and reduced sugar consumption, the level of caries was the highest (36.2%) in all oral conditions observed (Fig 1). This was also evident by the slight shift to the right seen on the normal distribution plotted for the disease (Fig.2) present in the sample as compared to the shift to the left for tooth brushing

(Fig.3), check-up (Fig. 4), sugar (Fig.5) and education (Fig.6); demonstrating that the sample had a slight increase in the disease level despite improvements elsewhere.

The second highest observed oral disease/condition was that of caries and periodontal disease combined in each patient (20.5%) followed by periodontal disease alone (16.8%) (Fig: 1). Chi-square analysis revealed a statistically significant association between gender and sugar consumption (p=0.001). A high percentage of females were consuming one teaspoon sugar as compared to males who were utilizing two teaspoons sugar (Table 2). Tooth brushing was also observed to be highly significant with education on cross-tabulation (p=0.001) (Table 3). Significance between disease & tooth brushing and education & gender was seen. Age was highly significant with tooth brushing as was education with age and tooth brushing. There was also a high significance between gender & sugar seen in 2-tailed significance of Pearson correlation (Table 4).

TABLE 1: FREQUENCY DISTRIBUTION OF GENDER, AGE, TOOTH BRUSHING, SUGAR INTAKE IN TEA AND EDUCATION LEVEL IN THE SAMPLE (n=185)

Gender	**Frequency**	**Percent**
Male	89	48.1
Female	96	51.9
Age	**Frequency**	**Percent**
12-19	24	13.0
20-29	44	23.8
30-39	53	28.6
40-49	32	17.3
50-59	22	11.9
60-69	8	4.3
70-79	2	1.1
Tooth Brushing	**Frequency**	**Percent**
Yes	172	93.0
No	13	7.0
Sugar Intake (Tea)	**Frequency**	**Percent**
No Sugar	46	24.9
1 tea spoon	88	47.6
2 tea spoon	51	27.6
Education Level	**Frequency**	**Percent**
No Education	37	20.0
5th grade and below	48	25.9
5th to Matric/ O levels	55	29.7
FSc/FA/A-levels & above	45	24.3
Total	185	100.0

TABLE 2: GENDER & SUGAR CROSS-TABULATION (n=185)

	Sugar				
Gender	**None**	**1 tea spoon**	**2 tea spoon**	**Total**	**P-value for Chi-square**
Male	20	33	36	89	.001*
Female	26	55	15	96	
Total	46	88	51	185	

TABLE 3: EDUCATION & TOOTH BRUSHING CROSS-TABULATION (n=185)

	Tooth Brushing			
Education			**Total**	**p-value for Chi-square**
	Yes	**No**		
No education	29	8	37	.001*
5th grade and below	45	3	48	
5th to Matric/ O-levels	54	1	55	
FSc/FA/A-levels & above	44	1	45	
Total	172	13	185	

DISCUSSION

This survey was carried out to observe improvements in the hygiene and oral health habits of the group who were examined a year ago. In the previous survey, dental hygiene awareness knowledge was imparted and measures for improvement in oral hygiene were taught to all age groups. Also, oral hygiene promotion was implemented. Considerations were taken into account for the role of parents, school and media for children and the workplace, social environments, nursing homes and trained carers for adults and the elderly. Community oral hygiene promotion is extremely important and attempt must be made to

TABLE 4: PEARSON CORRELATIONS WITH 2-TAILED SIGNIFICANCE

		Age	Gender	Sugar	Education	Tooth brush-ing	Check up	Disease
Age	Pearson Correlation Sig. (2-tailed)							
Gender	Pearson Correlation Sig. (2-tailed)	.067 .363						
Sugar	Pearson Correlation Sig. (2-tailed)	-.018 .805	-.203** .006					
Education	Pearson Correlation Sig. (2-tailed)	-.226** .002	-.184* .012	.022 .770				
Tooth brushing	Pearson Correlation Sig. (2-tailed)	.315** .000	.011 .884	.019 .798	-.251** .001			
Check-up	Pearson Correlation Sig. (2-tailed)	.022 .770	.000 .995	.031 .680	.059 .425	-.089 .230		
Disease	Pearson Correlation Sig. (2-tailed)	.018 .803	-.009 .906	-.068 .356	-.073 .320	.146* .047	-.081 .271	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

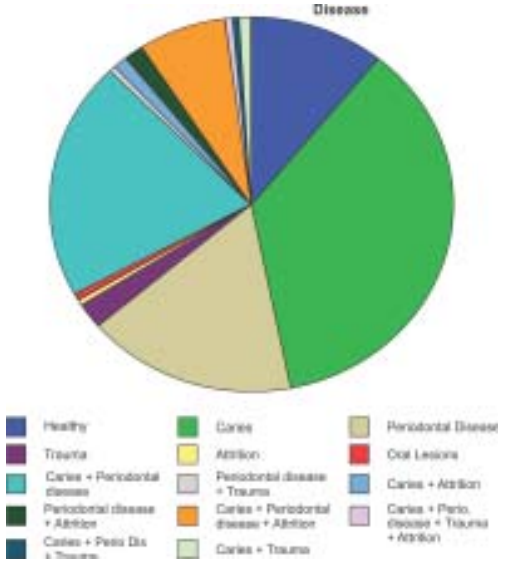

Fig 1: Distribution of Oral disease and conditions in the sample (n=185)

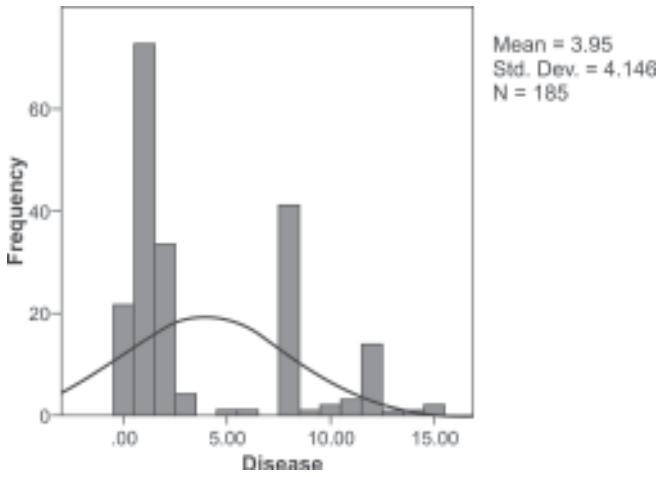

Fig 2: Normal distribution curve of Oral disease/conditions

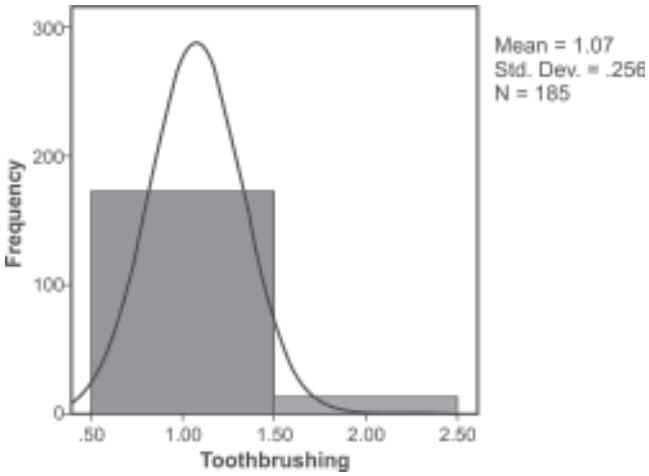

Fig 3: Normal distribution curve of tooth brushing

maximise opportunities for oral health for all and reduce inequalities by removing financial and other barriers.[9] Mechanical and chemotherapeutic approaches to oral hygiene aim to modify the oral microflora to promote healthy periodontal and dental tissues. Current oral hygiene measures, appropriately used and in conjunction with regular professional care, are capable of virtually preventing caries and most periodontal disease and maintaining oral health.[9] Tooth brushing and flossing are most commonly used,

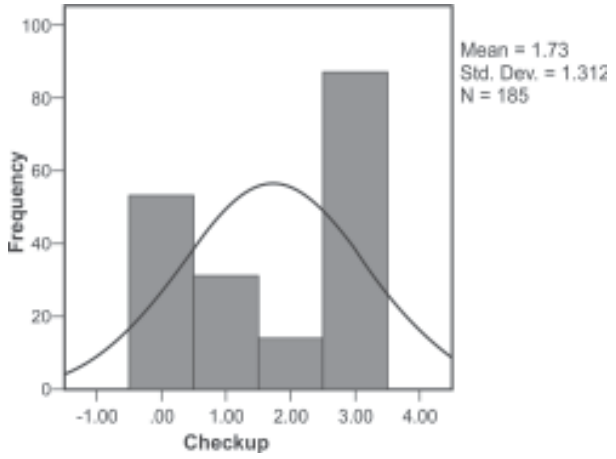

Fig 4: Normal distribution curve of check-up

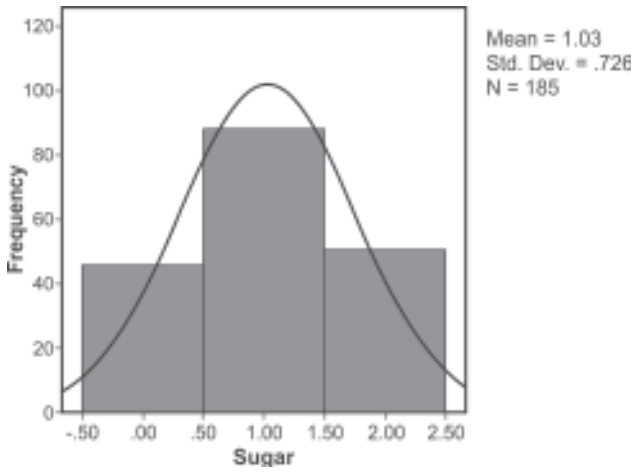

Fig 5: Normal distribution curve of sugar intake in tea

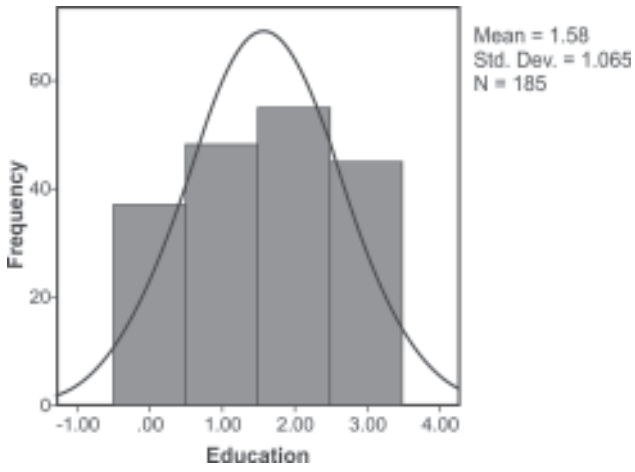

Fig 6: Normal distribution curve of education

although inter-dental brushes and wooden sticks can offer advantages in periodontally involved dentitions. Despite new products and design modifications, mechanical measures require manual dexterity and cognitive ability. Chemotherapeutic supplementation of mechanical measures using dentifrices, mouth rinses, gels and chewing gums as delivery vehicles can improve oral hygiene.[9] The list includes anticalculus, antibacterial and cariostatic agents.

The present study showed a statistically significant association of tooth brushing with age, education and disease. Despite different levels of education present, 172 out of the sample were brushing their teeth as compared to only 13 in the sample that were not. This implies that there was increasing awareness about oral hygiene and the importance of tooth brushing in the study groups. Females were found more aware and had been consuming one teaspoonful of sugar in their tea as compared to their male counterparts. Generally speaking, majority of the study subjects have been using only one teaspoonful of sugar. This implies that they were motivated to decrease their intake in their daily tea.

Normal distribution curves were plotted for disease, check-up, tooth brushing, sugar intake and education in the sample. It was interesting to note here that while all the curves for check-up, tooth brushing, sugar intake and education were shifting to the left (indicating improvement), the curve for disease was slightly shifting to the right (indicative of presence of disease conditions). The previous study results showed a shift to the right for the normal distribution curve plotted for tooth brushing whereas this year the shift was towards the left. The current study shows that regardless of the improvement in all domains of oral hygiene practices and knowledge over a year, the disease is still slightly present in the population. One is forced to reason the above. The presence of disease could be due to the non compliant behaviour of a part of the study groups. Secondly, lack of education in some could also lead to multiple problems such as poor oral hygiene and habits/practices leading to oral disease and oral lesions too. Habits that can be changed by giving proper education and awareness include tooth brushing and daily cleanliness habits, consumption of NMES (non milk extrinsic sugars) and sugar consumption in daily diet otherwise (such as tea, coffee and drinks), smoking/pan-chewing/ betel nut chewing habits and regular Dental visits. Once these habits are improved and are followed consistently, there are extremely good chances that disease trends will also improve over time.

The findings in this study conclude that there is need of persistence in oral hygiene practices and oral health promotion programs. By doing so, long term benefits can be reaped and this can eventually change the trend of Oral disease/conditions in this country.

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