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RESEARCH ARTICLE

Oral health status of post graduate dental students in Eastern Nepal

Giri D¹, *Singh VP², Giri N³, Shah R⁴

1,3,4.Department of Periodontology, BPKIHS, Dharan, Nepal

2.Dept. of Orthodontics, BPKIHS, Dharan, Nepal

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*Corresponding Author

Giri D

Abstract

Introduction: The relation between the quality of life and oral health is defined as the evaluation, both from a personal and a medical point of view, of the way in which functional, psychological, social factors and traumatizing and uncomfortable experiences affect an individual's well-being. The purpose of the study was to determine oral health status of post graduate students in BPKIHS. **Method:** This pilot study was conducted at B.P. Koirala institute of health sciences, Dharan, Nepal between march 2013 to april 2013. The individuals were evaluated for periodontal examination. The oral hygiene of six selected teeth was assessed using plaque index (PI) and gingival index (GI). Sterile dental mouth mirrors and explorers were used to assess plaque accumulation and William's periodontal probe to assess the gingival status. The Community periodontal index was used to assess the periodontal status with a CPI probe. **Results:** In the present study a good oral hygiene was observed in most of the subjects and majority of the post-graduate students followed a good oral hygiene practice. **Conclusions:** Due to their profession, dentists are expected to exhibit meticulous oral hygiene procedures as compared to the general public.

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Introduction

According to the World Health Organization (WHO), "Oral health means being free of diseases and disorders that affect the mouth and oral cavity."^{1,2} Several factors including social³, behavioural⁴, and medical⁵ seem to play a role in oral disease progression.

Oral Health Related Quality of life has become a priority for specialists as late as the 1980's, and then they focused on evaluating the consequences of oral diseases on the life of the individual and the establishment of proper measures in order to cancel the negative effect of oral disease on the quality of life.⁶

The relation between the quality of life and oral health is defined as the evaluation, both from a personal and a medical point of view, of the way in which functional, psychological ("the looks" and the self esteem), social (interaction and perception) factors and traumatizing and uncomfortable experiences affect an individual's well-being.

The pathology of the dental-maxillary apparatus leads to the evaluation of the quality of life in report to oral health. In the purpose of evaluating this relation, there are now internationally recognized and adopted methods which materialize in social-dental indicators, designed for use on extensive social groups. These indicators are defined as "evaluations of the level to which oral status may perturb the performance of social functions and lead to major modifications of behavior such as work incapacity, school absence, parenting and home⁵.

These indicators are considered essential complementary indicators to clinical analysis and measurable in relation to specific evaluation indicators of oral health

The First International Conference on Measuring Oral Health and Quality of Life took place in 1997, at North Carolina University (U.S.A.). Ten questionnaires were presented and validated as indicators for the measurement of the relationship between quality of life and oral health.⁶

The aim of this study was to assess the oral health status and periodontal disease among postgraduate students of BPKIHS, Dharan.

Methods

The present cross sectional study was conducted in department of Periodontology and oral Implantology. The data for this research was collected by interviews and clinical oral health examination by chief investigator. The patients were given information regarding their participation in the study and an informed consent of the patients was taken prior to the study. Institutional Ethical Approval was obtained from the Institutional Ethical review board (IERB)/research committee of B P Koirala Institute of Health Sciences prior to the commencement of the study.

31 post graduate students studying in BPKIHS were included in the study.

Clinical examination

31 postgraduates dental students studying in BPKIHS were examined for clinical periodontal examination. The oral hygiene of six selected teeth was assessed using plaque index (PI) of Silness and Loe (1964), gingival index (GI) of Loe and Silness (1963). The six teeth chosen were the maxillary right first molar, the maxillary right central incisor, the maxillary left first premolar, the mandibular left first molar, the mandibular left lateral incisor and mandibular right first premolar.

Sterile dental mouth mirrors and explorers were used to assess plaque accumulation and William's periodontal probe to assess the gingival status. The surfaces examined were the four gingival areas of the tooth i.e., distal-facial, facial, mesial-facial and lingual surfaces. Unlike the buccal (facial) surface, the lingual surface will be considered as one unit. Totaling the scores around each tooth obtained the plaque index and gingival index score for the area. If the scores around each tooth are totaled and divided by four, the plaque index and gingival index score for the tooth is obtained. Similarly totaling all of the scores per tooth and dividing by the number of teeth examined will give the plaque index and gingival index score per person.

The Community periodontal index was used to assess the periodontal status with a CPI probe. The teeth examined were 16, 17, 11, 26, 27, 31, 36, 37, 46, 47.

The two molars in each posterior sextant were paired for recording and if one is missing there is no replacement. If no index teeth or tooth were present in a sextant qualifying for examination all the remaining teeth in that sextant are examined and the highest score was recorded as the score for the sextant.

Subjects were considered as having periodontitis, if the CPI score was (3 / 4) and non-periodontitis if the CPI score was (0, 1, 2).

Statistical analysis: Chi- square test was done to analyze the collected data.

Results:

The results of the present study are shown in tables below.

Table 1. Age Distribution

Characteristics	Frequency	Percentage
<30 Years	25	80.6
>30 Years	06	19.4
Total	31	100

Table 2. Sex Distribution

Characteristics	Frequency	Percentage
Male	22	71.0
Female	09	29.0
Total	31	100

Table 3. Device used for Brushing

Device	Frequency	Percentage
Tooth brush soft bristle	31	100

Tooth brush hard bristle	00	00
Total	31	100

Table 4. Frequency of Tooth Brushing

Frequency of brushing	Frequency	Percentage
Once	09	29.0
Twice	20	64.5
More	02	6.5
Total	31	100

Table 5. Method of Brushing

Method of brushing	Frequency	Percentage
Bass	07	22.6
Modified Bass	20	64.5
Others	04	12.9
Total	31	100

Table 6. Smoking

Smoking	Frequency	Percentage
Yes	11	35.5
No	20	64.5
Total	31	100

Table 6. Plaque Index Score

PI Score	Frequency	Percentage
0-3	17	54.9
4-7	11	35.4
8-11	03	9.6
Total	31	100

Table 7. Gingival Index Scores

GI Score	Frequency	Percentage
0-2	18	58
3-4	05	16.1
5-6	08	25.8
Total	31	100

Table 8. CPI Scores

CPI Score	Frequency	Percentage
Mild	09	29
Moderate	19	61.3
Severe	03	9.7
Total	31	100

Table 9. Stress

Stress	Frequency	Percentage
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No	06	19.4
Yes	25	80.6
Total	31	100

The present study comprised a total of 31 participants including 25 (80.6%) males with age less than 30 years and 6 (19.4%) females with age more than 30 years.

In the study there were 22 (71.0%) males and 9 (29%) females.

3(9.7%) subject was found to be diabetic, 28(90.3%) subjects were healthy.

All subjects were found to brush their teeth with toothbrush. 9 subjects(29%) brushed their teeth only once where as 20 subjects (64.5%) brushed their teeth twice daily. Similarly 2 subjects (6.5%) were found to brush their teeth more than twice daily.

Regarding brushing methods, 4 subjects(12.9%) brushed their teeth using vertical method, 7 (22.6%) using horizontal method of brushing where as 20 (64.5%) used both vertical and horizontal method of brushing.

11 out of 31 (35.5%) subjects were found to be smokers and 20 subjects(64.5%) were non-smokers.

17 (54.9%) subjects had plaque score of 0-3, 11 (35.4%) subjects had plaque score of 4-7 and 3 (9.6%) subjects had plaque score of 8-11.

Similarly, 18 (58%) subjects had GI score of 0-2, 5 subjects had GI score of 3-4 (16.1%) and 8 subjects had GI score of 5-6 (25.8%).

28 (90.3%) subjects out of 31 were found to have no periodontitis and only 3(9.7%) subjects had periodontitis.

25 subjects(80.6%) out of 31 had stress and 6 (19.4%) were found to have no stress.

Discussion:

Oral cavity is the mirror of our own body or in other words we can say that the oral cavity might well be considered as window to the body because oral manifestations accompany many systemic diseases.

Good oral health is essential to improve an individual's overall health and well-being. ⁷The dental community, who supposedly are the role models as far as oral health is concerned, play a pivotal role in promoting behavioral change in the society. Keeping this in mind, the study was conducted to provide an insight about the oral hygiene status, behavior and concepts among dental professionals.

It has been seen that health practices of physicians determine what they tell their patients. A similar trend can be anticipated among dental practitioners as well. Dental health practices are learned from a number of sources of which professional learning is an important component. ⁸

Oral hygiene practices

All the subjects used toothbrush with soft bristles to brush their teeth. It is believed that filament stiffness can contribute to the traumatic potential of the toothbrush, but the influence of this factor is unclear. However, hard bristled brushes have been shown to be more effective in plaque removal than one with medium bristles. ⁹ Tooth brushing is considered as the primary mechanical means of removing substantial amounts of plaque in order to prevent oral disease, including gingivitis and dental caries and halitosis while also maintaining dental esthetics. It is also used as a means of delivering chemotherapeutic agents via dentifrice.

Frequency and technique of tooth brushing

Majority of the subjects (64.5%) brushed their teeth twice daily. The results were in accordance with the studies of Ghasemi et al. (73%). ¹⁰

Majority of the dentists (64.5%) used modified Bass method for removing plaque, which is probably the most popular method taught today.

Brushing methods including Bass, Stillman's, Fones, Charter's, horizontal, vertical, scrub etc., have been taught for decades, with Bass and Roll method most commonly recommended.

However, no one method of brushing has been found superior to others. ⁹ Poyato-Ferrera et al. observed in a 3 min comparison between modified Bass and the normal brushing technique that the modified Bass method removed more supra gingival plaque for all sites and at all times examined, especially on the lingual surfaces which commonly show high plaque scores. ¹¹

However, the best method is one that suits the individual needs and abilities and it is the responsibility of the dentist to instruct the patient on performing the task thoroughly.

20 out of 31 subjects (64.5%) were non-smokers. This high percentage of dentists not consuming tobacco could be because of their knowledge regarding the consequences of tobacco consumption.

In the present study a good oral hygiene was observed in most of the subjects. This could be because of a positive attitude and adherence to good oral hygiene behavior is associated with better oral health.¹² Maatouk et al. (2006) emphasized that dental students achieved better oral health practices and status at the end of their course, highlighting the importance of dental studies on motivation and attitude towards treatment.¹³

Out of the total sample of 31 subjects, 3 were observed to have periodontitis and 28 of these had no periodontitis. It was also observed that a majority of the subjects who were examined belonged to higher socio-economic strata with higher levels of education, having good oral hygiene and minimal gingival inflammation. Most of the subjects examined belong to the university population of BPKIHS with high level of dental awareness and access to dental and medical health care facilities.

Majority (80.6%) of the students had stress this could be because Postgraduate training has always been regarded as a highly stressful environment to students.

The sample size in this pilot study was relatively small and therefore, the findings should be interpreted cautiously. Apart from that, this pilot study has provided a useful data in order to calculate an appropriate sample size for future studies.

Thus, similar studies with a larger study sample should be undertaken to give a broader perspective of the current scenario.

Conclusion:

Due to their profession, dentists are expected to exhibit meticulous oral hygiene procedures as compared to the general public. The results of the present study supports this and reveal that the oral hygiene practice of the post graduate students of BPKIHS is almost ideal.

We, as dentists, should realize our role in disseminating positive oral health concepts to their patients and the general public but before this, we ourselves should follow the ideal regimen and act as role models for the society.

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