

ORIGINAL ARTICLE

ORAL HEALTH STATUS OF INDO TIBETAN BORDER POLICE FORCE PERSONNEL STATIONED AT BHANU, PANCHKULA DISTRICT (HARYANA)

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ABSTRACT:

Background: Oral health is an important part of general health and is determined by various factors such as lifestyle, dietary habits, socioeconomic conditions, occupational environment etc. Indo Tibetan Border Police Force form the backbone for the security of our country hence their oral health is of utmost importance. The purpose of the present study was to assess the oral health status of Indo Tibetan Border Police Force Personnel stationed at Bhanu, Panchkula District (Haryana). **Materials and Method:** A cross-sectional study was conducted on 700 (Male-455, Female-245) ITBP subjects, aged 18-57 years who were selected by simple random sampling. ADA Type- III examination of the subjects was conducted by a single investigator and data was recorded on World Health Organization (WHO) format 1997. A p-Value ≤ 0.05 was considered statistically significant.

Results: The results revealed that the prevalence of dental caries was 87.9%. The mean number of decayed teeth was significantly higher among males (3.30) as compared to females (1.69) and in older age group (3.78). The prevalence of periodontal disease was 84.4%. Regarding the CPI scores, (15.6%) subjects had a healthy periodontium whereas maximum subjects (43.4%) had a CPI score of 2. The highest CPI score of 4 was recorded in (4.4%) subjects in age group of 40 years and above. Healthy periodontium was found in (25.7%) of females as compared to males (10.1%). **Conclusion:** The present study revealed a compromised oral health status among ITBP Personnel as the prevalence of periodontal disease and dental caries was high. This might be primarily attributed to the stressful environment and lack of awareness of Oral hygiene among them.

Keywords: ITBP Personnel, Oral Health Status, Dentition status, Treatment needs, Periodontal status

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This article may be cited as: Sandhu KS, Gupta N, Bansal M, Arora V, Gupta P, Thakar S. Oral health status of Indo Tibetan border police force personnel stationed at Bhanu, Panchkula District (Haryana). *Int J Res Health Allied Sci* 2017;3(1):73-76.

INTRODUCTION

Health is a common theme across all cultures and is a fundamental human right without distinction of race, religion, political belief, economic and social conditions.¹ Oral health is an important part of general health and is determined by various factors such as lifestyle, dietary habits, socioeconomic conditions, occupational environment etc. Oral health means more than healthy teeth that enables an individual to speak, eat, and socialize without active disease, discomfort, or embarrassment.²

Oral health is an integral part of overall health and well being representing far more than a healthy mouth including a pleasing smile, and freedom from pain and infection. Oral cavity plays a vital role in the life of human beings through functions like mastication, aesthetics, phonetics, communication, and emotional expressions etc. It contributes positively to self esteem and personnel success.^{3,4}

The oral problems should be cured and preventive measures should be employed to maintain oral health. The influence of occupational environment on oral health is well documented. The health hazards get more severe with the difficulty of occupation. This fact is more important in situations as of the soldiers who provide continuous service to the nation.⁴

The Indo Tibetan Border Police Force (ITBP) came into existence on October 24, 1962 for the security of the frontiers along the Indo Tibetan Border covering 2115 kms from Karakoram pass to Lipulekh pass and Trijunction of India, Nepal and China.⁵

Apart from guarding the border, the forces are heavily engaged in fighting Pakistan-sponsored terrorism in the state of Jammu and Kashmir. The "Himveers" as the personnel are nicknamed, also provide security cover to installations and to VIPs in National Capital, Delhi.⁶ The WHO Basic oral health survey provides a sound basis for estimation of the present oral health status of a population and to predict its future needs for oral health care. It provides baseline data for development of programs and planning of appropriate number and type of personnel for oral care. The survey can also help us to monitor changes in levels and patterns of disease.⁷

Bhanu is an important ITBP station in Panchkula district of Haryana. No information is available regarding the oral health status of ITBP personnel stationed at Bhanu.⁷ They are the major work force and carry out operations under the instructions of officers.

It was because of the aforementioned reasons, that the present study was undertaken with the aim to assess the oral health status of ITBP Personnel stationed at Bhanu, Panchkula District of Haryana.

MATERIALS AND METHOD

A cross-sectional study was conducted on 700 (Male-455, Female-245) ITBP subjects, aged between 18-57 years stationed at Bhanu, Panchkula District of Haryana. The subjects were selected by simple random sampling method in which the list of all personnel at ITBP, Bhanu, Panchkula was prepared and the required sample was selected randomly from the list, using the table of random numbers. If the number in the table of random numbers was not present on the day of examination that number was skipped and the next number was checked. All ITBP Subjects who were 18 years and above, medically fit were included in the study. Subjects not willing to participate and undergoing any medical or orthodontic treatment were excluded from the study. The study was carried out during the months of August 2014 to November 2014. The examination was conducted on every two days a week i.e. Monday and Saturday. The study was conducted in natural day light and at a fixed time of the day i.e. 10.00 am to 1.00 pm and 2.00 pm to 4.00 pm and at a fixed place within ITBP premises. A maximum of 25 subjects were examined on each day. The ethical clearance was obtained from the ethical committee of Swami Devi Dyal Hospital and Dental College, Barwala, Panchkula prior to the onset of the study. Permission to conduct the study on Indo Tibetan Border Police Force Personnel was obtained from the Deputy Inspector General (DIG) of the Basic Training Centre of Indo Tibetan Border Police Force station at Bhanu, Panchkula District (Haryana). The written informed consent was obtained from all the study subjects after duly explaining the purpose and methodology of the study.

Prior to the main study, a pilot study was carried out on 30 subjects to assess the feasibility of the study and to develop an alternate strategy on the basis of constraints which can be adopted in the main study.

All clinical assessment was carried out in the sequence prescribed in the WHO Oral Health Assessment Form (1997) with sterilized instruments by a single trained and calibrated examiner in ITBP Premises. All the examinations were carried out by the investigator himself, to avoid inter-examiner variability a subsample of 10% of the recruits were re-examined for calibration purpose. The ADA type III examination using mouth mirror and probe in natural light was performed for each subject. The data collected was entered in the Microsoft word Excel Sheet 2007 version and processed using the SPSS v19.0 software package (SPSS Inc. Chicago, IL, U.S.A). Cohen’s kappa statistics was used to assess the

intra examiner reliability. Descriptive statistics such as mean, standard deviations and the proportions (% of subjects affected) was used. Significance level was fixed at $p \leq 0.05$.

RESULTS

A total of 700 Indo Tibetan Border Police Force Personnel were examined, out of which 455 (65.0%) were males and 245 (35.0%) were females. The age group of 20-24 years had 154 (33.8%) males and 103 (42.0%) females. The age group of 25-29 years had 102 (22.4%) males and 89 (36.3%) females. The age group of 30-34 years had 94 (20.7%) males and 43 (17.6%) females. The age group of 35-39 years had 61 (13.4%) males and 5 (2.0%) females. The age group of 40 years and above had 44 (9.7%) males and 4 (1.6%) females. Gender wise majority of the male subjects (33.8%) and female subjects (42.0%) fall in the age group of 20-24 years. **(Table-1)**

Table 2 represents the distribution of subjects according to Maximum Community Periodontal Index scores. The periodontal status based on highest CPI scores revealed that 62 (8.9%) of the subjects had shallow pockets and 8 (1.1%) had deep pockets, 217 (31.0%) of the subjects reported with bleeding and 304 (43.4%) with calculus. Only 109 (15.6%) of the subjects had healthy periodontal tissue.

Table 3 represents the distribution of subjects according to Dentition status. The mean number of decayed teeth per person was 2.74. Mean number of teeth filled with and without decay were 0.32 and 0.59, respectively. Mean number of teeth missing due to caries was 0.66 while teeth missing due to other reasons were 0.05. Mean number of teeth with bridge, abutment, special crown or implant/veneer was 0.17. Mean number of teeth with trauma were 0.20.

Table 4 represents the distribution of subjects according to Dental Treatment needs. Mean number of teeth in need of one and two surface filling was 1.46 and 0.81, respectively. Mean number of teeth in need of pulp care and restoration was 0.53. Mean number of teeth in need of extraction was 0.23.

Table 5 represents the Existing Prosthetic status of the study population. Among the maxillary dentition, 587 (83.9%) subjects were not using any type of prosthesis, 108 (15.4%) were using a single bridge and 5 (0.7%) subjects were using more than one bridge. In mandibular dentition, 630 (90.0%) subjects were not using any type of prosthesis, 64 (9.1%) subjects were using single bridge and 6 (0.9%) subjects were using more than one bridge.

Table 1: Distribution of the subjects according to Age and Gender

		<20 years	20-24 years	25-29 years	30-34 years	35-39 years	40 years and above	Total
Males	Count	0	154	102	94	61	44	455
	%	0.0%	33.8%	22.4%	20.7%	13.4%	9.7%	100.0%
Females	Count	1	103	89	43	5	4	245
	%	0.4%	42.0%	36.3%	17.6%	2.0%	1.6%	100.0%
Total	Count	1	257	191	137	66	48	700
	%	0.1%	36.7%	27.4%	19.5%	9.5%	6.8%	100

Table 2: Distribution of subjects according to Maximum Community Periodontal Index score

	Frequency	Percent
Healthy (0)	109	15.6
Bleeding (1)	217	31.0
Calculus (2)	304	43.4
Pocket 4-5mm (3)	62	8.9
Pocket 6mm or more (4)	8	1.1
Total	700	100.0

Table 3: Distribution of subjects according to Dentition Status

	Mean Number of Teeth	Std. Deviation
Decayed	2.74	2.248
Filled, with decay	0.32	.896
Filled, no decay	0.59	1.052
Missing, as a result of caries	0.66	1.268
Missing, any other reason	0.05	0.240
Bridge, abutment, special crown or implant/veneer	0.17	0.470
Trauma	0.20	0.557

Table 4: Distribution of subjects according to Dental Treatment Needs

Variable	Mean	Std. Deviation
One surface filling	1.46	0.969
Two surface filling	0.81	0.931
Pulp care and restoration	0.53	0.813
Extraction	0.23	0.579

Table 5: Distribution of subjects according to Prosthetic Status

Maxillary Dentition		
	Frequency	Percent
No prosthesis	587	83.9
Bridge	108	15.4
More than one bridge	5	0.7
Mandibular Dentition		
No prosthesis	630	90.0
Bridge	64	9.1
More than one bridge	6	0.9
Total	700	100.0

DISCUSSION

Oral health contributes to personal well being and quality of life. It plays an important role in the pursuit of health, health promotion of an individual and thus for the whole community. A good oral health among ITBP Personnel is essential for their efficient performance. Good oral health of the ITBP Personnel would reduce the number of urgent dental intervention and absence from duty. To the best of our knowledge, literature regarding the oral health status of ITBP Personnel is not available which requires the need for investigation of the oral health status of the ITBP Personnel.

Majority of the subjects were in the age group of 20-24 years i.e. 33.8% (males) and 42.0% (females). The age at entry for the recruitment starts from 18 years and the recruits after 44 weeks of training are eligible for promotion to higher ranks. This is in agreement with the findings of Ahuja A (2011)⁸ whose study had the age group of 16-23 years. The findings of Lewsey et al (2000)⁹, with the age group of 18-22 years and Bayirli SG et al (1976)¹⁰ whose study had the age group of 19-22 years among the recruits joining the army were also of the similar age group. The most probable reason for this

age group is that recruits are taken after matriculation only.

In the present study 8.9% of the subjects were having shallow pockets, 43.4% had calculus and 31.0% had bleeding. Only 15.6% of the recruits had the healthy healthy periodontium. The findings are in accordance with the findings of study carried out by Singh et al (2015)¹¹ where 31.3% of subjects had calculus. The high prevalence of periodontal disease can also be attributed to the irregular work shifts and lack of concentration on oral health in particular. Score-4 (Deep pocket) was highest in the age group of 40 years and above. The reason for this finding may be as age advances periodontal disease becomes more progressive and destructive.³

Females presented more healthy periodontal condition than males. Statistically this difference was significant. The reason why gender affects periodontal health status may be attributed to the fact that females are more conscious in maintaining a better oral hygiene practice.³ These results indicate that periodontal health was not good. The prevention and control of periodontal disease depends on daily attention to careful oral hygiene and it

should be noted that in a combat situation, the combination of poor oral hygiene and stress has been reported as the main triggers for periodontal diseases.^{2,3} In the present study, mean DMFT among subjects was 4.36 which is contrary with the study done by Lewsey JD (2000)⁹ who reported mean DMFT of 10.2 among recruits in Norway in 1990. When the present study findings were compared to those of the Indian Army recruits, the mean DMFT of the recruits was 0.91 which is less when compared to the present study. This is probably because the recruits are selected on dental criteria where the number of decayed tooth should be minimum.¹²

Mean number of teeth requiring one surface filling were 1.46, two surface fillings 0.81, pulp care and restoration 0.53 and extraction 0.23. Proportionally more elderly than younger adults needed extraction and caries was the major indication for extraction in all age groups. Restoration was most needed treatment which is in contrast to studies done by Ahuja and Darker (2003).¹³ Males had a significantly higher need for fillings and extraction of teeth. This indicates more utilization of dental health care services by females.¹¹

In the present study 183 (26.1%) subjects were using any type of prosthesis whereas 517 (73.9%) subjects were not using any prosthesis. It was seen that 236 subjects (33.7%) had need for prosthesis, and 464 (66.3%) subjects did not required any prosthesis. The treatment need for the mandibular dentition is far more than maxillary dentition. This is due the reason that any maxillary prosthesis is more stable and retentive because it usually has large surface area and there is no interference from the tongue movements.¹⁴ The results of our study are in agreement with the study done by Bhardwaj et al (2015)¹ among Police Personnel of Shimla City.

CONCLUSION

In conclusion, the findings of the present study revealed a compromised oral health status among ITBP Personnel as the prevalence of periodontal disease and dental caries was high. This might be primarily attributed to the stressful environment and lack of awareness of Oral hygiene among them. It is therefore recommended that regular oral health checkups with proper follow-up should be given to emphasize the importance of oral health among ITBP Personnel.

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