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## RESEARCH ARTICLE

### ORAL HEALTH STATUS OF BORDER SECURITY FORCE PERSONNEL IN LABANA CANTONMENT, JAIPUR, RAJASTHAN

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#### ABSTRACT

**Background:** Maintaining a high level of good oral health throughout the force is an integral part of overall combat readiness as clinical dental resources are not always readily available in the deployed environment.

**Methodology:** A total of 205 army personnel were included in this study. The interview comprised few questions to know their oral hygiene practices and deleterious oral habits. The answers to these questions as well as clinical data were recorded in the WHO form 2013.

**Results:** Mean age was  $30.4 \pm 9.2$  years among BSF personnel maximum subjects belonged to 26–30 years age group. Healthy periodontium was seen in 87(42.4%) BSF personnel.

**Conclusion:** BSF needs to strengthen their existing Oral health care delivery system by emphasizing more on to their preventive aspect.

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## INTRODUCTION

The oral health of a soldier or police personnel directly affects the routine day to day work schedule and result in the risk of dental emergency while deployed. Maintaining a high level of good oral health throughout the force is an integral part of overall combat readiness as clinical dental resources are not always readily available in the deployed environment. (WHO 5<sup>th</sup> edition) Historically, 20–25% of all soldiers will experience a dental emergency during a 1-year deployment. The largest number of soldier complaints is about lack of adequate dental support. The average time a unit loses a Soldier with a dental emergency which requires evacuation to the rear is 5 days. Liewehr calculates that this fact leads to a potential loss to a division of 18,000 man-day during a 1-year deployment. (Hyman *et al.*, 2006) Oral health is an essential part of achieving and maintaining readiness to deploy and fight. (Ahuja and Darekar, 2003) The dental health of the military personnel has a significant impact on military operations since the untreated oral conditions can result in increased prevalence of dental disease and nonbattle injury for deployed soldiers Hence assimilating epidemiological evidence for the prevalence of periodontal disease in this population is of importance. An extensive search of review of the literature has

clearly shown that no study has been done to compare the oral health status and treatment need among personnel of BSF (Border Security Force) of India. Hence, this study was undertaken to assess the oral health Status in BSF personnel in Jaipur City, and hence that a preventive protocol can be formulated in order to reduce the extent and severity of dental diseases.

## MATERIALS AND METHODS

The present study was conducted at BSF Cantonment in Labana, Jaipur. A total of 205 army personnel were included in this study. The permission was obtained from the BSF Head office. Ethical clearance was taken from the institutional review board. Convenient sampling method was followed for this study. Known case of HIV/HB + ve personnel and the subjects on immunosuppressive drugs were excluded from our study. A brief interview and clinical examination of each soldier was carried out. The interview comprised few questions to know their oral hygiene practices and deleterious oral habits. The answers to these questions as well as clinical data were recorded in the WHO form 2013. In the present study army personnel with age varying from 21 – 60 years formed the study group. Each person was examined on an upright office chair using natural light. Besides standard oral examination instruments, CPITN probe was used for measuring depth of periodontal pockets.

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### Criteria of pocket depth is as follows:

- (i) Shallow pocket - 4-5 mm (gingival margin within the band on the probe)
- (ii) Deep pocket - 6 mm or more (black band on the probe not visible)

Recording of data: The staff was firstly trained to fill the form and recording was done subsequently.

The data obtained was analyzed using the SPSS version 14.0 (IBM). Descriptive statistics was computed. The *P* value was taken as significant when  $< 0.05$  (confidence interval of 95% was taken).

## RESULTS

Mean age was  $30.4 \pm 9.2$  years among BSF personnel maximum subjects belonged to 26–30 years age group. Healthy periodontium was seen in 87(42.4%) (Table 1) army personnel however the degree of periodontal disease was severe with 21 (10.2%) pocket 4–5 mm and 14 (6.8%) pocket 6 mm or more. Bleeding gums and calculus present were present. Loss of attachment of 4–5 mm in army personnel was 9 (4.3%). Among army personnel 98(47.8%) experienced caries. Difference in Mean decayed teeth was statistically significant ( $P < 0.05$ ). The mean decay, missing and filled teeth for army personnel was  $1.30 \pm 2.33$  (Table 2). About 94 (45.8%) army personnel needed treatment out of which 17 (8.2%) needed one surface restoration, 9 (4.3%) needed two surface restoration, 8(3.9%) each needed pulp care and extraction, 4 required crown and 48 (23.4%) (Table 3) needed other care like dentures, bridges.

**Table 1. Distribution of BSF personnel according to CPI**

Codes of CPI	Number (%)
0=Healthy	87 (42.4%)
1=Bleeding	23 (11.2%)
2=Calculus	65 (31.07%)
3=Pocket 4-5 mm	21(10.2%)
4=Pocket 6 mm or more	9(4.3%)
Total	205

CPI – Community periodontal index

**Table 2. Mean number of DMFT and total DMFT**

Decay	<b>0.33±0.81</b>
Missing	0.36±1.02
Filled	0.61±1.59
DMFT	1.30±2.33

\* $P < 0.05$ . DMFT – Decay, missing and filled teeth

**Table 3. Distribution of BSF personnel according to treatment needs**

Treatment needs	Number (%) n=205
1's-filling	17
2's-filling	9
Pulp care	8
Extraction	8
Crown	4
Need for other care	48
Total treatment needed	94

## DISCUSSION

The impact of the acute stomatological conditions on the reducing of the combat readiness is an important concern for the BSF planners. Classification of dental health is the primary condition for research and assessment of the BSF dental readiness for combat Mean age of study subject from BSF were 30.4-year which is more (36-year) in the study by Sutthavong *et al.* and less (27.39-year) in study by Sandoval *et al.* (2008) and in line (32-year) with study by Dilip (2005) in Karnataka police. Amongst BSF personnel in the present study, 42.4% had healthy periodontium, 11.2% had bleeding gums which is in line with study done by Sandoval *et al.* (2008) with 10% having bleeding; 31.07% had calculus which is less when compared to the study by Sandoval *et al.* (2008) (72.6%). About 10.2% with pocket 4–5 mm and 4.3% with pocket 6 mm or more which is more when compared to 1% in the study by Dilip (2005). Caries experience was seen in 47.8% BSF personnel which are more than study by Sutthavong *et al.* (2009) (22%) whereas when compared to study by Dilip (2005) which is less (74%). The need of dental treatment is more in these personnel, for them a dental check up camp should be conducted as much as possible.

### Summary

#### Already known to this subject

There are no such studies in literature which showed the prevalence of major oral disease like dental caries and periodontitis. Lt Col Satish Chandar R (2014) showed in his study that the prevalence of the oral diseases namely dental caries and periodontal diseases was relatively high in police personnel when compared to the army personnel.

#### This study adds

The present study showed that the prevalence of the major oral diseases namely dental caries and periodontal disease is higher in BSF personnel. Improved access to dental care, as well as dental health education along with periodic dental check-up, is mandatory to ensure optimum dental health. Till such time, the authorities establish comprehensive dental care facilities, the Dental Colleges in the city can adopt the BSF Cantonment and provide the services. BSF needs to strengthen their existing Oral health care delivery system by emphasizing more on to their preventive aspect to further bring down the oral disease load by assessing their dietary consumption, life style, stress level and other associated risk factors.

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