

Utilization of Dental Services and Oral Health Status among Police Personnel in Virajpet, South India

¹S Supreetha, ²K Prathima, ³George Sam, ⁴Narendra V Penumatsa, ⁵Sneha Khanapure, ⁶KN Jagadeesh

ABSTRACT

Background: Police personnel are a group of professionals who have all together a different working environment with 24 hours duty and often being exposed to highest physical strain and mental stress. Because of their odd working pattern, they often miss timely food, sleep, rest, and recreation and family contacts. This complicates their life and pulls down their level of living.

Aim: The present study was aimed to assess the utilization of dental services and oral health status among police personnel in Virajpet, South India.

Materials and methods: A total of 172 participants were recruited in this study. Most of them were male (n=154, 89.5%) and only 18 participants (10.5%) were females. Their mean age was 38.02 ± 9.08. The caries prevalence was assessed by using Dentition status and Treatment need and periodontal status was assessed by using community periodontal index (CPI) and Loss of Attachment, part of World Health Organization (WHO) Oral Health Survey Proforma (1997). Chi-square test was used to explore the association between the variables.

Results: The association between Missing teeth, filled teeth and utilization of dental service shows a statistically significant association (p<0.05). 124 (72.09%), 40 (23.2%) of the participants have one surface filling, two surface filling respectively. A total of 51 (29.7%) were had calculus, 48 (27.9%) were had 4 to 5 mm of loss of attachment.

Conclusion: The present study concludes that the prevalence of dental caries among police personnel is very high. Prevention oriented health education lectures should be delivered and possibly, should also from part of their training curriculum.

Keywords: Community periodontal index, Dental care, Dental caries, Loss of attachment, Oral health survey, Police personnel.

How to cite this article: Supreetha S, Prathima K, Sam G, Penumatsa NV, Khanapure S, Jagadeesh KN. Utilization of Dental Services and Oral Health Status among Police Personnel in Virajpet, South India. *Int J Oral Care Res* 2016;4(2):87-90.

Source of support: Nil

Conflict of interest: None

INTRODUCTION

Health is a common theme in most cultures and is a fundamental human right without distinction of race, religion, political belief, and economic and social condition. Oral health is an integral part of general health and is one of the determinants of quality of life.¹

People's oral health status can affect them physically and psychologically and influence how they enjoy life, how they look, speak, socialize, and chew, taste, and enjoy their food. It also affects their self-esteem, self-image, and feelings of social well-being. Successful aging is related to maintaining one's quality of life, which in turn is dependent on how well individuals can fulfill these day-to-day activities.²

Occupational environment plays a major role in the health of the exposed. The health hazards get more severe with the difficulty of job. This fact is more important in situations of police personnel, who provide continuous service to the civilians. Policing is a complex occupation. Owing to the complexity of policing, risks and exposures may vary within forces, between forces, and internationally. Officers' involvement ranges from general, daily, proactive patrol activities to specific criminal activities, such as narcotic investigations. Because there is such a wide range of activities involved in police work, there are many health and safety issues surrounding policing as an occupation.³

The mission of the state police is to help the common people, to provide them security, and to create a peaceful and law-abiding community with their cooperation. The place, i.e., occupied by the police in a state is similar to the place occupied by the military in a nation. Police personnel are state government employees who have access to free medical care at government hospitals and privileges for leave on medical grounds.⁴ This warrants good general as well as oral health. On the contrary, police personnel are a group of professionals who have altogether a different working environment with 24 hours' duty and often being exposed to the highest physical strain and mental stress. Because of their odd working pattern, they often miss timely food, sleep, rest, recreation, and family contacts. This complicates their life and pulls down their standard of living.⁵

¹Reader, ^{2,5}Senior Lecturer, ^{3,4}Lecturer, ⁶Associate Professor

¹Department of Public Health Dentistry, St. Gregorios Dental College, Kothamangalam, Ernakulam, Kerala, India

^{2,6}Department of Prosthodontics, Krishnadevaraya College of Dental Sciences and Hospital, Bengaluru, Karnataka, India

^{3,4}Department of Preventive Dental Sciences, College of Dentistry, Prince Sattam Bin Abdulaziz University, Al Kharj Kingdom of Saudi Arabia

⁵Department of Public Health Dentistry, Maharashtra Institute of Dental Sciences and Research, Latur, Maharashtra, India

Corresponding Author: S Supreetha, Reader, Department of Public Health Dentistry, St. Gregorios Dental College Kothamangalam, Ernakulam, Kerala, India, e-mail: dr.supreetha@yahoo.com

An extensive search of review of the literature has clearly shown that no study has been done on the utilization of dental services among police personnel in Virajpet. Hence, this study was undertaken to know the utilization of dental services and oral health status among police personnel in Virajpet, South India, so that a preventive protocol can be formulated in order to reduce the extent and severity of dental diseases.

MATERIALS AND METHODS

Virajpet is a hilly area and the taluk comes under the Coorg district. A list of police stations in the Virajpet taluk and the number of police personnel in these stations was obtained from the Deputy Superintendent of Police (DySP) office, Virajpet. There are a total of six police stations consisting of 296 police personnel in this taluk. A simple random sampling was used for the study.

Sample-size Determination

The sample size was calculated using the relation

$$n = \frac{N}{1 + Ne^2}$$

where the confidence interval chosen was 95%, i.e., $e = 0.05$

The total number of police personnel was $n = 296$; therefore, the sample size was 172.

The ethical approval for the study was obtained from the Institutional Review Board of Coorg Institute of Dental Sciences, Virajpet. And informed consent was obtained from the study participants.

The questionnaire consisted of questions on socio-demographic factors that recorded sex, age, and income and questions were regarding whether they had attended any oral health awareness programs and had undergone any oral treatment.

The police personnel were explained about the study, and only those who were willing to participate in the study were included. Questionnaires were distributed to the police personnel personally, and they were given sufficient time to answer; the questionnaire was collected back on the same day. After receiving the filled questionnaires from the participants, the police personnel were examined to assess their caries prevalence by using dentition status and treatment need, and periodontal status was assessed by using CPI and loss of attachment, part of WHO Oral Health Survey Proforma (1997). Intraoral examination of the study subjects was carried out by a sterile mouth mirror and CPI probe.

Statistical Analysis

The collected data was classified and tabulated in Microsoft Office excel. Statistical Package for the Social

Sciences (SPSS) for windows version 20.0 software was employed for statistical analysis. Frequency distributions of responses to the questions were produced. In addition to descriptive statistics, chi-square test was used to explore the association between the variables. A $p < 0.05$ was selected in describing the levels of significance.

RESULTS

A total of 172 participants were recruited in this study. Most of them were males ($n = 154$, 89.5%), and only 18 participants (10.5%) were females. Their mean age was 38.02 ± 9.08 years, and their age ranged from 20 to greater than 50 years, as in Table 1.

Tables 2 and 3 reveal that the association between missing teeth, filled teeth, and utilization of dental service is statistically significant ($p < 0.05$).

Graph 1 shows that 124 (72.09%) of the participants had one surface filling, whereas 40 (23.2%) of the participants had two surface fillings.

It is evident from Graphs 2 and 3 that out of the total 172 study participants, 13 (7.5%) required pulp care and 11 (6.3%) required extraction.

Table 1: Distribution of study subjects according to age and sex

Sociodemographic variables	No. of study subjects n (%)
Age	
20–29 years	29 (16.9)
30–39 years	75 (43.6)
40–49 years	43 (25.0)
> 50 years	25 (14.5)
Sex	
Male	154 (89.5)
Female	18 (10.5)

Table 2: Association between missing teeth and utilization of dental service

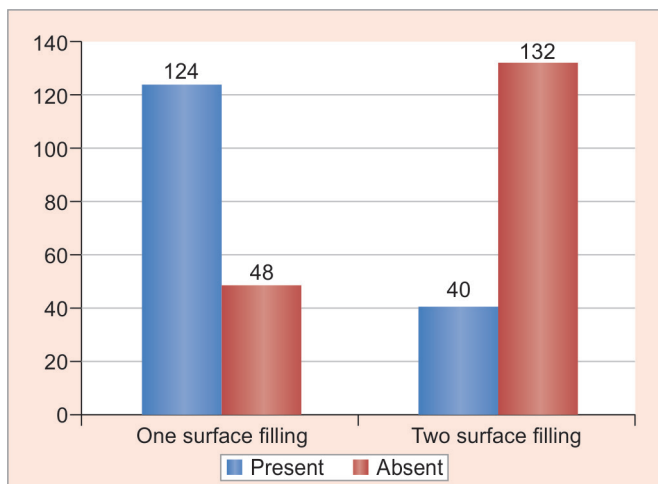
		Utilization of dental service			χ^2 value	p-value
		Attended	Not attended	Total		
Missing teeth	Present	42	16	58	6.23	0.014*
	Absent	60	54	114		
Total		102	70	172		

*Significant

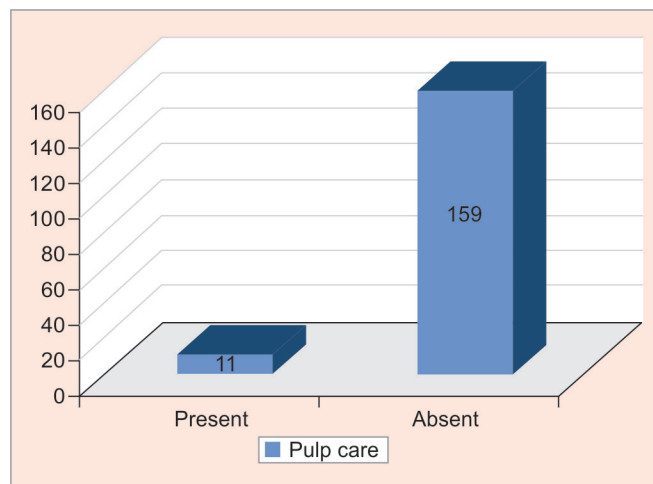
Table 3: Association between filled teeth and utilization of dental service

		Utilization of dental service			χ^2 value	p-value
		Attended	Not attended	Total		
Filled Teeth	Present	34	07	41	12.44	0.0001*
	Absent	68	63	131		
Total		102	70	172		

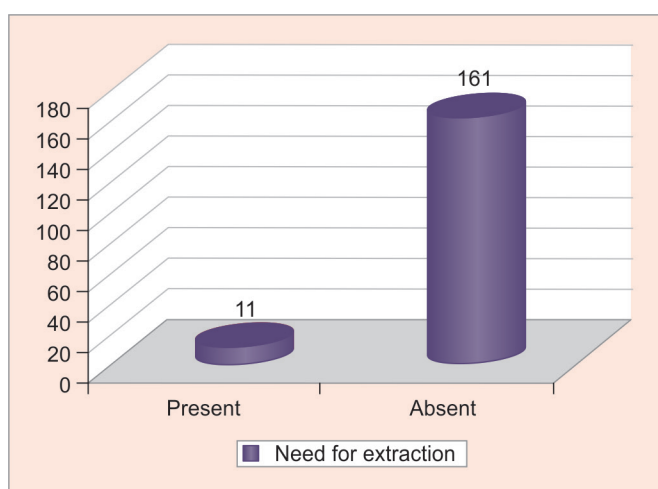
*Highly significant



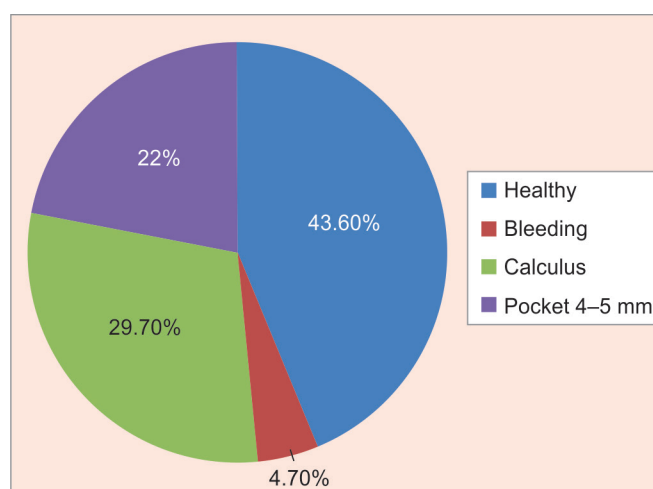
Graph 1: Distribution of study subjects based on the number of surface filling



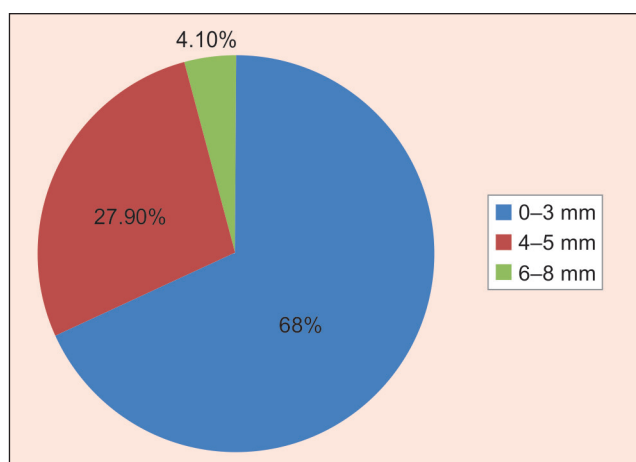
Graph 2: Distribution of study subjects based on pulp care



Graph 3: Distribution of study subjects based on need for extraction



Graph 4: Distribution of study subjects according to CPI scores



Graph 5: Distribution of study subjects according to loss of attachment scores

Among 172 participants, 75 (43.6%) were healthy, 8 (4.7%) had bleeding, 51 (29.7%) had calculus, and 38 (22%) had pocket 4 to 5 mm, as shown in Graph 4.

Graph 5 shows 117 (68%) had 3 mm, 48 (27.9%) had 4 to 5 mm, and 7 (4.1%) had 6 to 8 mm loss of attachment.

DISCUSSION

Occupational environment plays a major role in an individual’s health. The fact that police personnel are quite often engaged in 24-hour duty puts them under a lot of physical, as well as mental, strain.⁶ The present cross-sectional study was undertaken to assess the oral health status and treatment needs of police personnel in Virajpet.

The sample of police personnel provides a unique opportunity to study a large population from diverse socioeconomic and geographic backgrounds. Police personnel form the backbone for safety and security of a community; hence their health is of utmost importance, not only for them and their families but also for the entire nation. The adverse outlook of this occupation makes it necessary for the government to either build health care, general and oral, clinics equipped with efficient workforce, especially for the police personnel, or regularly organize treatment camps at various police stations.

In the present study, a total of 172 police personnel were selected, out of which 29(16.9%) were in the age group 20 to 29 years, 75 (43.6%) were in the age group 30 to 39 years, 43 (25%) were in the age group above 40 to 49 years and 25 (14.5%) were in the age group above 50 years. The mean age of the study subjects was 38.02 ± 9.08 years; it is similar to few studies.^{7,8}

In the present study, mean the DMFT among study subjects was found to be 3.77 ± 3.4 . Increase in the mean DMFT may be due to cumulative effect of different diseases and also to the more missed teeth and removal of teeth in the older age groups. However, mean DMFT was 1.02 ± 0.94 , 2.98 ± 3.12 , and 2.69 in the studies conducted by Sohi et al,⁴ Bhardwaj et al,¹ and Naveen and Reddy⁹ respectively, and lower DMFT was reported by Wang et al¹⁰ in China. This difference may be attributed to different geographical, ethnical, and cultural variations and fluoride contents of drinking water.

Among the police personnel, 43.6% had healthy periodontium, which is much more than the study by Dilip⁵ (9%); about 4.7% had bleeding gums, which is less than the study by Dilip⁵ (37%); 29.7% had calculus, which is less than the study by Dilip⁵ (53%); about 22% had pocket 4 to 5 mm, which is more when compared to 1% in the study by Dilip.⁵ This shows that either police personnel have less knowledge about the maintenance of oral hygiene or oral prophylaxis has not been availed.¹¹

The present study found that regular dental check-up is not a norm among police personnel. Only 59.3% had utilized dental service. Most would only come when they have a dental problem. It appears that dental check-up in the service does not necessarily lead to preventive dental utilization behavior. Many studies have shown the benefit of regular dental check-ups. For example, subjects with more frequent dental visits were found to have lower rates of tooth loss and fewer numbers of teeth with active caries.¹² Regular attendees also tend to have a significant positive impact on dental health.¹³

Improved access to dental care, as well as dental health education along with periodic dental check-up, is mandatory to ensure optimum dental health especially for the Karnataka police service. Till that time, the authorities should establish comprehensive dental care facilities for the policemen; the dental colleges in the city can adopt police training schools and provide the services.¹⁴

CONCLUSION

The present study concludes that the prevalence of dental caries among police personnel is very high. Prevention-oriented health education lectures should be delivered

and, possibly, should also from part of their training curriculum. Regular recruitments of police personnel with good educational background (graduation) and proper gender ratio could be helpful in managing deficiencies at workplace and vocational effectiveness.

REFERENCES

1. Bhardwaj VK, Sharma KR, Jhingta P, Luthra RP, Sharma D. Assessment of oral health status and treatment needs of police personnel in Shimla city, Himachal Pradesh: a cross-sectional study. *Int J Health Allied Sci* 2012;1(1):20-24.
2. Abhishek KN, Shamarao S, Jain J, Haridas R, Ajagannavar SL, Khanapure SC. Impact of caries prevalence on oral health-related quality of life among police personnel in Virajpet, South India. *J Int Soc Prevent Community Dent* 2014 Sep;4(3):188-192.
3. Singh A, Bhambal A, Saxena S, Tiwari V, Tiwari U. Assessment of dentition status and treatment needs of police personnel in Bhopal city, Central India. *Int J Med Sci Public Health* 2015;4(6):829-834.
4. Sohi R, Bansal V, Veerasha K, Gambhir R. Assessment of oral health status and treatment needs of police personnel of Haryana, India. *Internet J Epidemiol* 2009;9(1):1-6.
5. Dilip CL. Health status, treatment requirements and knowledge and attitudes towards oral health of police recruits in Karnataka. *J Indian Assoc Pub Health Dent* 2005;5:20-34.
6. Abhishek KN, Jain J, Shamarao S, Khanapure SC. Impact of periodontal status on oral health related quality of life among police personnel in Virajpet, India. *J Investig Clin Dent* 2016 May;7(2):193-197.
7. Bhalla M, Ingle NA, Kaur N, Ingle E, Chandan D, Charania Z. Oral health status and treatment needs of police personnel in Mathura city. *J Int Oral Health* 2015 Sep;7(9):51-53.
8. Spalj J, Peric D, Zrinski MM, Bulj M, Plancak D. Predictive value of dental readiness and psychological dimensions for oral health related quality of life in Croatian soldiers: a cross-sectional study. *Croat Med J* 2012 Oct;53(5):461-469.
9. Naveen N, Reddy CV. Oral health status and treatment needs of police personal in Mysore city, Karnataka. SRM University. *J Dent Sci* 2010;1(2):156-160.
10. Wang HY, Petersen PE, Bian JY, Zhang BX. The second national survey of oral health status of children and adults in China. *Int Dent J* 2002 Aug;52(4):283-290.
11. Aggnur M, Garg S, Veerasha K, Gambhir R. Oral health status, treatment needs and knowledge, attitude and practice of health care workers of Ambala, India – a cross-sectional study. *Ann Med Health Sci Res* 2014 Sep;4(5):676-681.
12. Sheiham A, Maizels J, Cushing A, Holmes J. Dental attendance and dental status. *Community Dent Oral Epidemiol* 1985 Dec;13(6):304-309.
13. Richards W, Ameen J. The impact of attendance patterns on oral health in a general dental practice. *Br Dent J* 2002 Dec 21;193(12):697-702.
14. Chandar RS, Patankar SP. Comparison of oral diseases status and treatment needs between armed forces personnel and Karnataka police service in Bengaluru city. *J Indian Assoc Public Health Dent* 2014;12(4):268-271.