

Evaluation of Oral Health Status Among Road Transport Drivers in Erode District of Tamil Nadu

John JR¹, Kesavan P², Sridharan P³, Rajendran G⁴

ABSTRACT

Introduction: The aim of this study was to analyse the oral health status, behaviours and treatment needs of drivers employed in Jeeva Transport Corporation located in Erode district of Tamil Nadu.

Materials and methods: A total of 360 workers aged 35 to 60 years were recruited in the study to evaluate their oral health status using a detailed closed-ended questionnaire.

Results: Among 360 study subjects, there was 4-5 mm loss of attachment seen in 261 (44.7%) and 6-8 mm loss of attachment was seen in 17 drivers (4.7%). 265 of them (76.1%) had smoking habits. Of these 117 (33.6%) used smoking tobacco and 126 (36.2%) used smokeless tobacco.

Conclusion: The sample of transport workers provides a good opportunity to survey a population of diverse geographic and socio-economic backgrounds. It is critical to implement oral health policies that prevent, intervene and rehabilitate tobacco consumption habits and promote oral health among them.

KEYWORDS: Oral health, Road transport workers, Periodontal Status, Oral Lesions.

¹MPH,
School of Science and Health,
Western Sydney University, Sydney,
NSW, Australia

²BDS,
Department of Public Health Dentistry,
Priyadarshini Dental College and Hospital,
Thiruvallur (Tamil Nadu), India.

³BDS,
Department of Public Health Dentistry,
Priyadarshini Dental College and Hospital,
Thiruvallur (Tamil Nadu), India.

⁴MDS,
Department of Public Health Dentistry,
Priyadarshini Dental College and Hospital,
Thiruvallur (Tamil Nadu), India

Contact Author

Dr. James Rufus John
rufus.benaud11@gmail.com

J Oral Health Comm Dent 2016;10(2)35-39

INTRODUCTION

Since the dawn of times, Adam attempted to taste the first fruit, tooth has played a primary role which has a special importance on its own. Periodontal disease, and universally prevalent chronic disease which is considered as a mammoth among dental population, results in tooth loss when left untreated. Oral health continues to be less prioritized and neglected despite continuous efforts for health promotion worldwide. Oral health is commonly taken for granted, and its significance to overall health of the body is not fully comprehended (1). Oral health plays a significant role in the general health and well-being of an individual (2).

The challenges of occupational environment are one of the major social determinants of health (3). There are some working classes such as road transport drivers who work tirelessly behind the wheels, commuting to different places without adequate food, rest and sleep. These people often have odd working hours with frequent changes to their work schedule. In addition, they are made to work in difficult climatic conditions compounded by delays and breakdowns, leading to constant changes to their sleep patterns and other regular lifestyle functions.

The prevalence of oral diseases ranging from dental caries to extensive periodontal diseases among several occupation classes at risk must be

given due importance in research. In addition, only few studies exploring the prevalence of oral diseases have been conducted among the Indian population, especially among people employed in specific occupational groups (4). For example, literature and research on the oral hygiene status and practices among road transport employees are very scarce. Thus the aim of this paper was to assess the oral health status and treatment needs of staffs of Jeeva Transport Corporation located in the Erode district of Tamil Nadu.

MATERIALS AND METHODS

This cross sectional study was conducted among the drivers in Erode district. The study was approved by Institutional Review Board of Priyadarshini Dental College and Hospital and the permission to conduct the study was obtained from Institutional Ethical committee of Priyadarshini Dental College and Hospital.

There were totally 10 depots in Erode district and the list of depots was obtained from the Jeeva transport corporation, Erode. Two depots were randomly chosen. The estimated sample size was 350 study subjects based on 80% power and 0.05 alpha error, the age ranged from 25 years to 60 years. The drivers of the depots present at the time of study were included in the study.

An official permission was taken from the respective managers of the two depots for this study. The chief investigator for the study visited the site before conducting the survey. Before the study commenced, the investigator had been recruited from the Department of Public Health Dentistry to prevent interviewer bias and to provide consistent and standardised interpretation, examination and coherent application of codes and criteria for the oral diseases to the observed participants.

Oral health status was calibrated and recorded under the guidelines of the

WHO Oral assessment of 2013 with properly sterilized instruments. The clinical parameters which were assessed were Dentition status, Periodontal status, Loss of attachment, Dental fluorosis, Traumatic injuries, Dental erosion, Oral mucosal lesions, prosthetic status and treatment needs. The examiner was helped with other dental surgeon for recording the data. On an average 45 subjects were examined per day for a time period of 15-20 minutes. As per the diagnosis, patients were prescribed with medicines and referred for further treatment.

RESULTS

The present study was conducted among the road transport drivers, working in Tamil Nadu Jeeva Transport Corporation, within Erode district. A total of 360 workers were examined in the study. The workers age group ranged from 35 to 60 years. The mean age was 46.68 years. The mean number of caries teeth were 3.66 ± 7.699 . The mean number of missing teeth was 1.21 ± 2.215 . Shallow pocket (4-5mm) and deep pocket (6mm or more) were demonstrated among 228 (77.8%) and 60 (20%) respectively. (Table 1)

Among 360 study subjects, 4-5 mm loss of attachment was seen in 261 (44.7%) and 6-8 mm loss of attachment was seen

Table 1. Prevalence of caries, missing teeth and filled teeth among drivers

Criteria	Frequencies (N)	Percentage %
Caries	133	63.1%
Missing	236	34.4%
Filled	319	11.4%

in 17 (4.7%). Majority of the drivers in the study group brushed their teeth once a day. Only 54 (15.5%) subjects cleaned their teeth twice a day and 4 (1.1%) cleaned their teeth thrice a day.

Figure 1 shows the prevalence of gingival bleeding among drivers

Frequency of cleaning teeth after every meal was very low 88(25.3%). 245 subjects (71.2%) used tooth brush for cleaning their teeth while 39 (11.2%) subjects used finger to clean their teeth. Among 360 study subjects, 265(76.1%) were having the habit of smoking. Of these 117(33.6%) used smoking tobacco and 126(36.2%) used smokeless tobacco.

Figure 2 shows the prevalence of tobacco usage among drivers. The prevalence of dental erosion and oral mucous lesion of drivers were 2 (0.6%) and 33 (9.2%) respectively.

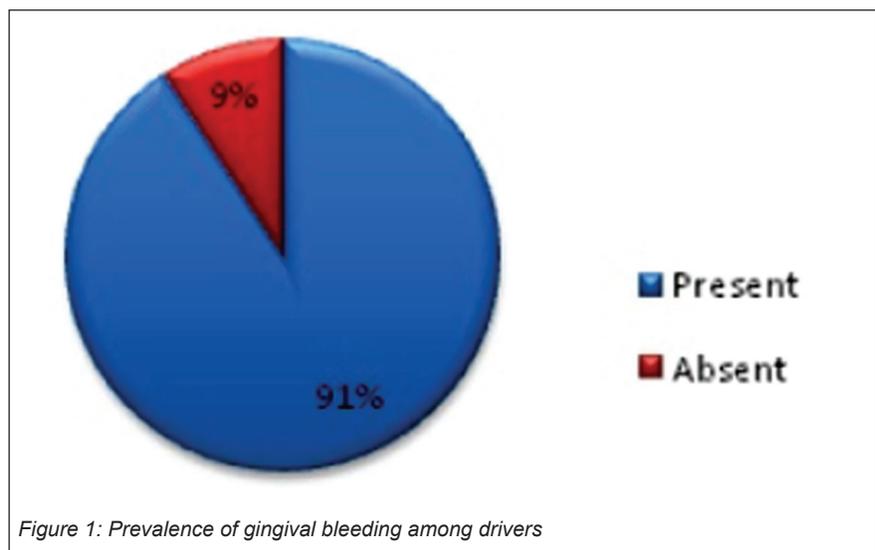


Figure 1: Prevalence of gingival bleeding among drivers

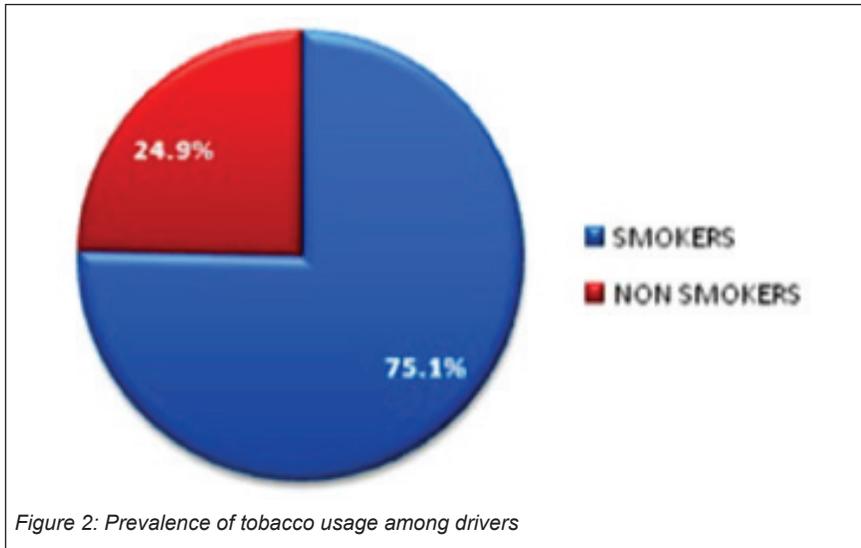


Figure 2: Prevalence of tobacco usage among drivers

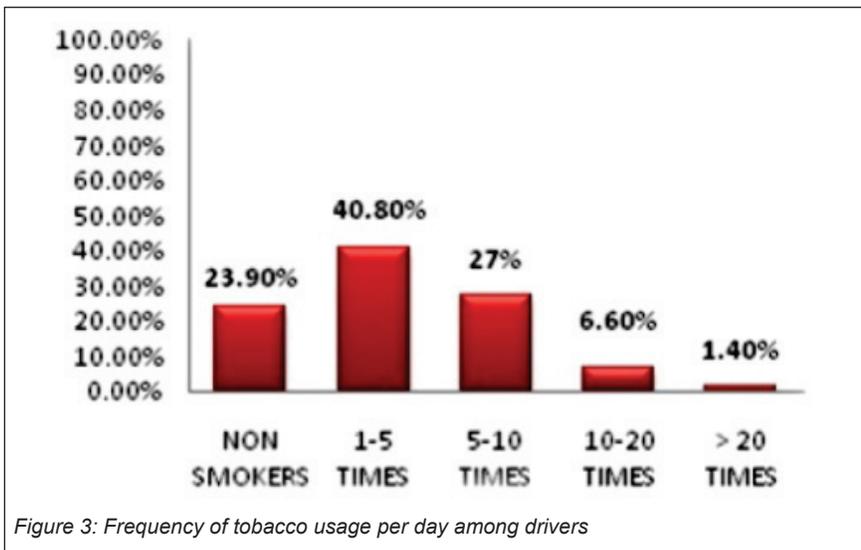


Figure 3: Frequency of tobacco usage per day among drivers

Among 360 study subjects, 18(5.2%) subjects used hard bristles, 143(41.1%) and 98(28.2%) used medium and soft bristles respectively. The prevalence of dental fluorosis among road transport drivers were 19 (5.3%)

Figure 3 shows the frequency of tobacco usage per day among drivers.

Table 2 shows the study subjects, knowledge, attitude and awareness of oral health among drivers.

DISCUSSION

The objective of study was to gather significant data on the oral health status of road transport workers and to assist in planning and evaluation of oral health promotional activities. In addition, there is no comparable prevalence data that has been previously recorded. Hence the study was conducted to gather this vital information and to compare the prevalence of oral lesions among other Indian occupational groups and even other countries. Rationale for this comparison was to assess the impact of differences in occupation, lifestyle and healthcare utilization on dental health.

It is evident that there exists a strong association between socio-economic status of individuals and their health

Table 2: Study subjects' knowledge, attitude and awareness of oral health

Cause for Dental caries?	Bacteria 138(39.7%)	Sweets 167(48.0%)	Bleeding gums 32(9.2%)	Smoking 11(3.2%)
What is the Cause for bleeding gums?	Improper brushing 19(5.5%)	Hereditary 38(10.9%)	Sweets 64(18.4%)	Bacteria 227(65.2%)
What type of bristles do you use for brushing?	Hard bristles 18(5.2%)	Soft bristles 143(41.1%)	Ultra soft 98(28.2%)	Nil 89(25.6%)
Which Technique do you use for brushing?	Horizontal 159(45.7%)	Vertical 105(30.2%)	Circular 84(24.1%)	Nil 0%
What will you do if you have black spot on your tooth?	Ignore 114(32.8%)	Brushing many times 65(18.70%)	Consult general physician 44(12.6%)	Consult dentist 125(35.9%)
What will you do if you have bleeding gums?	Brushing many times 21(6%)	Ignore 35(10.1%)	Home remedies 29(8.3%)	Consult dentist 263(75.6%)
How often do you change your tooth brush?	Once in 3 months 55(15.8%)	4-6 months 105(30.2%)	Once in 6-12 months 123(35.3%)	Nil 65(18.7%)

status. Income level is linearly correlated with health status with lower income people having lower status of health. This situation is evident due to the fact that individuals earning less are less likely to afford and gain access to good quality of health services(3).

Oral mucosal conditions and lesions were more likely to occur as a result of infection (bacterial, fungal and viral), injury or irritation (traumatic keratosis, burns and fibroma), systemic disease (metabolic or immunological), or related to lifestyle factors such as the use of tobacco, alcohol, areca nut or betel quid (4). Important oral mucosal lesions were observed in the study which is in contradiction to study reports by Kikwilu et al (5) on an adult population. Increase in prevalence of oral mucosal lesions with age was reported in the present study similar to the study conducted in Gujarat among industrial workers (6) where the most common oral mucosal lesion was found to be oral ulcer. Mandibular sulcus region was the most common site of ulceration in this study which is consistent to the research conducted by Fahmy (7) on workers engaged in some other occupation. This may be due to the habit of keeping the tobacco quid most of the times in the mandibular sulcus region.

The decayed, missing and filled surfaces / teeth (DMF) index which has been widely used for measuring caries experience in dental epidemiology was employed in this study (8). The present study can be comparable to studies done on other workers and the general adult population as there is none to less previous comparable data available for this particular occupational class. Similar prevalence of dental caries was found in the present study and in some other study conducted on two industrial population groups (8). But, a higher and a lower prevalence was noted by some authors in a study conducted on some other population group (9,10). The frequency of decayed tooth and

average DMFT in the study population was very less as compared to the findings in some mill workers (11). The mean DMFT value in the study was very less as compared to the study by Tomita et al (12) on construction workers but the DMFT index showed an increase in age in all age-groups in both the studies. The mean number of teeth lost per worker showed a significant increasing trend with age which was similar with a study conducted previously (13). Regarding the dentition status, filled teeth were the lowest in all the categories in the present study and in a study conducted on sweet and cable industry workers (14). However, decayed component in the subjects was higher as compared to a study done in some other part of India (15).

Gordon et al (16) reported in his study that oral surgical needs and fixed and removable prosthetic need increased with age, the older group requiring more treatment than the younger age-group which is in agreement with this study also. This could be due to lack of time for dental treatment and accumulation of treatment needs over a period of time.

Percentage of subjects free from any signs of periodontal disease was also similar with some other study (17). More number of subjects in the study had disease confined to reversible gingivitis which is contrary to that reported by some other studies (17,18). This could be due to the reason that large percentage of subjects used to brush their teeth at least once a day. The most prevalent treatment need in the study was plaque control and scaling which was also in agreement with the results a study conducted by Roman (19). Calculus and shallow pockets observed were comparable to other study but lesser percentage of subjects in the study had deep pockets (20).

Periodontal treatment needs increased with increasing age in the study is as similar to that reported by a study

done in Finland (21). In the current study, the prevalence of periodontal disease has led to the finding of no statistically significant difference between the smoking and non-smoking group. This was in contrast to some other study (22).

Limitations of the study are:

- Comprehensive oral health education for all the drivers was not expedient in the circumscribed time period.
- As it was a cross sectional study, review about the sequel of the health education given, could not be assessed.

Therefore, further studies should be carried out for a longer time, and the drivers should be favoured with cardinal general health and oral care.

CONCLUSION

The sample of transport workers provides a unique opportunity to study a population from diverse socio-economic and geographic backgrounds. Economic road transport is almost impossible without these people. These people take the responsibility for carrying us safe and sound from one place to another. Therefore, maintenance of general health as well as oral health of these workers falls under the responsibility of the Transport Authorities. Free dental services should be provided to these people in the government hospitals. A small health care centre should be established inside every bus terminus including a dental health centre where periodic health and oral health check-ups of drivers, conductors and their dependents can be performed along with dental health education. We conclude that there is a great need for continuous research and interventions especially in 'population at risk' groups such as the neglected occupational class of road transport drivers who are in dire need for proper oral health counselling which would eventually improve their overall health status. Thus, it is critical to implement oral

health policies that care for labourers such as road transport workers in order to prevent, intervene and rehabilitate tobacco consumption habits and to promote oral health among them.

REFERENCES

- Hawkins RP, Kreuter M, Resnicow K, Fishbein M, Dijkstra A. Understanding tailoring in communicating about health. *Health Education Research* 2008;**23**(3):454-66.
- Benyamini Y, Leventhal H, Leventhal EA. Self-rated oral health as an independent predictor of self-rated general health, self-esteem and life satisfaction. *Social Science & Medicine* 2004;**59**(5):1109-16.
- Wilkinson RG, Marmot MG. Social determinants of health: the solid facts. World Health Organization 2003.
- Gambhir RS, Sogi GM, Veerasha KL, Sohi RK, Randhawa A, Kakar H. Dental health status and treatment needs of transport workers of a northern Indian city: A cross-sectional study. *Journal of Natural Science, Biology and Medicine* 2013;**4**(2):451.
- Kikwilu EN, Masalu JR, Kahabuka FK, Senkoro AR. Prevalence of oral pain and barriers to use of emergency oral care facilities among adult Tanzanians. *BMC Oral Health* 2008;**8**:28.
- Malaowalla AM, Silverman S, Mani NJ, Billimoria KF, Smith LW. Oral cancer in 57,518 industrial workers of Gujarat, India: A prevalence and followup study. *Cancer* 1976;**37**:1882-86.
- Fahmy MS. Oral and dental affections in mercury-exposed workers. *Community Dent Oral Epidemiol* 1978;**6**:161-65.
- Broadbent JM, Thomson WM. For debate: Problems with the DMF index pertinent to dental caries data analysis. *Community Dent Oral Epidemiol* 2005;**33**:400-09.
- Masalin KE, Murtomaa HT, Sipila KP. Dental caries risk in relation to dietary habits and dental services in two industrial populations. *J Public Health Dent* 1994;**54**:160-66.
- Athanassouli T, Koletsis-Kounari H, Mamai-Homata H, Panagopoulos H. Oral health status of adult population in Athens, Greece. *Community Dent Oral Epidemiol* 1990;**18**:82-84.
- Bachanek T, Pawlowicz A, Tarczydlo B, Chalas R. Evaluation of dental health in mill workers Part I. The state of dentition. *Ann Agric Environ Med* 2001;**8**:103-05.
- Tomita NE, Chinellato LE, Lauris JR, Kussano CM, Mendes HJ, Cardoso MT. Oral health of building construction workers. *J Appl Oral Sci* 2005;**13**:252-61.
- Hayashi N, Tamagawa H, Tanaka M, Hanioka T, Maruyama S, Takeshita T, et al. Association of tooth loss with psychosocial factors in male Japanese employees. *J Occup Health* 2005;**43**:351-55.
- Tohidast Akrad Z, Beitollahi JM, Khajetorab AA. DMFT (Decayed, Missing, Filled, Teeth) Oral health index in sweets and cable industry workers. *Iran J Public Health* 2006;**35**:64-68.
- Duraiswamy P, Kumar ST, Dagli RJ, Chandrakant, Kulkarni S. Dental caries experience and treatment needs of green marble mine laborers in Udaipur district, Rajasthan, India. *Indian J Dent Res* 2008;**19**:331-34.
- Gordon M, Kusner W, Shifman A, Ronen E, Newbrun E. Assessing the dental treatment needs of an adult Israeli military population. *Community Dent Oral Epidemiol* 1986;**14**:244-49.
- Srikandi TW, Clarke NG. Periodontal status in a South Australian industrial population. *Community Dent Oral Epidemiol* 1982;**10**:272-75.
- Srikandi TW, Carey SE, Clarke NG. Utilization of dental services and its relation to the periodontal status in a group of South Australian employees. *Community Dent Oral Epidemiol* 1983;**11**:90-94.
- Roman A, Pop A. Community periodontal index and treatment needs values (CPITN) in a factory worker group in Cluj-Napoca, Romania. *Int Dent J* 1998;**48**:123-25.
- Pilot T, Lu ZY, Lin ZQ, Yen WP, Cao GR. Periodontal conditions in 35-44-year-old factory workers in Shanghai. *Community Dent Oral Epidemiol* 1989;**17**:216.
- Masalin K, Murtomaa H, Meurman JH. Oral health of workers in the modern Finnish confectionary factory. *Community Dent Oral Epidemiol* 1980;**18**:126-30.
- Shizukuishi S, Hayashi N, Tamagawa H, Hanioka T, Maruyama S, Takeshita T, et al. Lifestyle and periodontal health status of Japanese factory workers. *Ann Periodontol* 1998;**3**:303-11.