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Research Article

Self-Perceived Oral Health among Autorickshaw Drivers in Davanagere City - A Cross Sectional Survey

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Abstract

Context: Prevalence of various health complaints is quite high among auto rickshaw drivers. Assessing self- perceived oral health among Autorickshaw drivers in Davanagere city would provide baseline data which will help plan preventive services targeted at this population.

Aims: To assess the self-perceived oral health among autorickshaw drivers in Davanagere city.

Settings and Design: A cross sectional questionnaire study was done among a randomly selected sample of 400 Autorickshaw drivers at their respective workplaces in Davanagere city. Data was collected using self - perceived oral health questionnaire.

Methods and Material: Descriptive data was generated in percentages and tables and graphs was used to describe the data. Descriptive data was generated in percentages and tables and graphs was used to describe the data.

Results: Majority of the study population perceived their teeth status as average and above (97%) whereas only 6.7% of them perceived it as poor. Many drivers perceived their state of gum as average or above (88.8%) whereas only 9.4% of them considered it as poor. Oral health problems frequently experienced by subjects were difficulty in biting (70%), difficulty in speech (18%), dry mouth (21.3%), and embarrassment due to appearance of teeth (22.3%), smile avoidance (20.3%), interrupted sleep (21.3%), absenteeism from work (21.5%). Daily around 28.7% of subjects smoked cigarettes, 23% of them used chewing form of tobacco and 4.8% of them used snuff and 1% of them used other forms of tobacco and 50.6% consumed alcohol.

Conclusions: High consumption rates of tobacco and alcohol among Autorickshaw drivers point out towards the need for oral health awareness programmes.

Keywords: Oral Health; Self-Perceived; Autorickshaw Drivers; Cross-Sectional; Perception

Introduction

In India auto-rickshaws are main mode of public transport in urban and semi-urban areas as they are cheap and easily available. Environment in which drivers spend the majority of their time is polluted, noisy and exposed to harmful environmental pollutants like pollutant gases, continuous noise and whole-body vibration as well as harmful lifestyle like irregularity of meals, bad posture while driving and stressful occupational conditions due to their working conditions [1]. These work factors may be associated with various gastro musculo-skeletal, cardio-vascular, respiratory, hearing and other problems which can have driving safety implications [1,2]. There have been lots of studies on the health profile of long distance truck bus drivers and factors influencing them [3]; but there have been very few studies among short distance taxi and auto-rickshaw drivers and that too rarely done in India [4].

A recent study among autorickshaw drivers showed that prevalence of tobacco use was very high among them [5]. The overall prevalence of tobacco use among auto drivers was 84.25%. In another study prevalence of smoking and tobacco chewing was high among autorickshaw drivers. Night shifts and longer waiting hours were associated with increased trend towards tobacco consumption [6]. In a study done in Bangalore city it was observed that magnitude of Stress among Autorickshaw drivers was high [7]. As the prevalence of various health complaints is quite high among auto rickshaw drivers; there is a need for regular health check-ups and appropriate preventive and promotive health related interventions [8].

Clinical measures are related to disease indicators (e.g., tooth loss, number of decayed teeth, need for prostheses, etc.) and are thought to be difficult to interpret in the planning and evaluation of public health programs, as it is impossible to determine who among a large number of affected subjects will seek care [9]. Although self-perceived oral health is related to clinical measures [10], discrepant results are reported and the evidence suggests that individuals place more importance on factors related to the psychosocial and functional impact of oral health on quality of life when self-assessing their own oral health. In the same vein, some authors [10] have suggested that the differences between self-perceived oral health and clinical indicators may be the main reason for individuals not seeking oral health care when it is available. There is an increasing interest in studying self-perceived oral health as a way of complementing information obtained from clinical indicators and allowing for better planning of health services [11]. Literature search revealed no study assessing the self- perceived oral health among Autorickshaw drivers in Davanagere city. Hence, a cross sectional survey was planned to assess self- perceived oral health among Autorickshaw drivers in Davanagere city.

Materials and Methods

This descriptive cross sectional questionnaire survey was carried out from June 15 to September 15, 2018, among randomly selected sample of auto rickshaw drivers registered in the Regional Transport Office of Davanagere city. A multistage stratified random sampling technique was followed to select a sample of 400 Autorickshaw drivers. The investigator administered questionnaire was filled after interviewing the auto rickshaw drivers at the premises of their auto stands. Permission was obtained from the chief officer of Regional Transport Office and Institutional Review Board of the college (BDC/Exam/383/2017-18) to conduct the survey before the start of the study. Voluntary written informed consent was obtained from the study participants after explaining them about the purpose of conducting the study in the language understood by them using a participant information form.

Sample for survey was calculated using online sample size calculator. The following formula was used to calculate sample size. Sample Size =

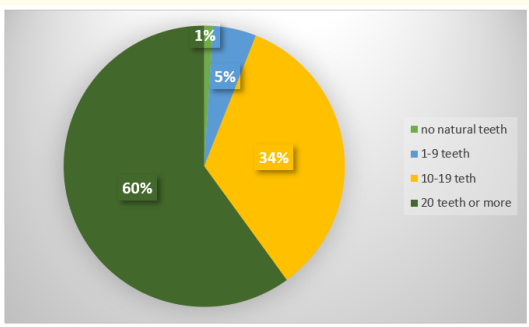
$$\frac{\frac{z^2 \times p(1-p)}{e^2}}{1+(\frac{z^2 \times p(1-p)}{e^2 N})}$$

Where, N=population size = 9500, e = Margin of error = 0.05, Z = z-score at 95% confidence level =1.96 e is percentage, put into decimal form (for example, 3% = 0.03). The sample size estimated was 370 which was rounded of to 400. WHO standardized questionnaire for assessment of self-perceived oral health for adults was used to collect data which was translated to local language. The questionnaire was designed in Kannada language and the translation checked by back translation method by a Kannada Lecturer. 20 minutes time was taken by the investigator to read out the questions to each participant in the language understandable by them and record their responses on the questionnaire sheet. The data was compiled systematically in Microsoft Excel spreadsheet and subjected to statistical analysis using Statistical Package for Social Sciences (SPSS) software. Descriptive statistics was expressed in terms of percentages.

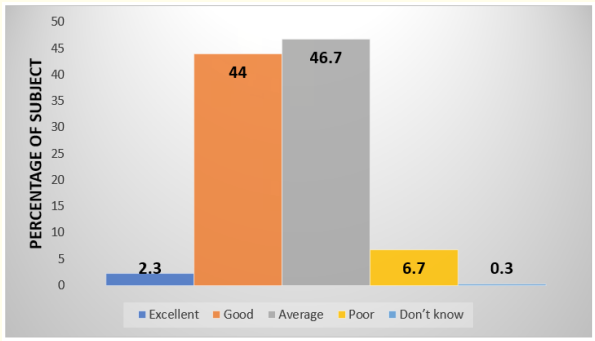
Results

Mean age of the study population was 48.4 with majority of the study population (48.4%) belonging to 38-57 year old age group. Majority of the study population had 20 or more teeth (59.7%) with only 1.5% of them being completely edentulous (Graph 1). 56.7% of them had not experienced any oral pain or damage in the past 1 year where as 24% had experienced oral pain. Majority of the study population perceived their teeth status as average and above (97%) whereas only 6.7% of them perceived it as poor (Graph 2). Many drivers perceived state of gum as average or above (88.8%) whereas only 9.4% of them considered it as poor (Graph 3). Around

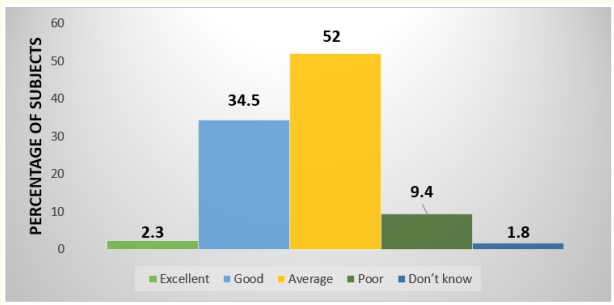
86.7% of the study population brushed their teeth regularly, 10.8% of them occasionally where as 2.5% of them never brushed their teeth. Approximately 94% of the subjects used toothbrush, 15% of them used toothpicks whereas approximately 6% of them used indigenous aids like charcoal, chewsticks and miswak sticks to clean their teeth. 31.7% of them used fluoridated paste but majority of them were unaware of fluoride content in their paste (45.5%). Around 15% of the subjects had visited the dentist within a year and for majority of them (44%) had been more than a year since their last visited a dentist.However41% of them never visited a dentist. Most common reason for last dental visit was pain in teeth (22.5%), gums or mouth followed by routine check-up (12.3%) follow up treatment (9.3%) and consultation (8.5%). However, 46.5% did not remember the reason or last dental visit. Very often oral health problems experienced by subjects were difficulty in biting (70%). Around 18-21% of the subjects experienced difficulty in speech, dry mouth, embarrassed due to appearance of teeth, smile avoidance, interrupted sleep, absenteeism from work and less tolerance with spouse. Around 13.5% of subjects reported reduced social participation (Table 1). Majority of the subjects (65-71%) consumed tea and coffee with sugar daily. Around 21-26% of subjects consumed fresh fruits, biscuits and cakes daily and 16% of them consumed lemonade and coca cola daily. Around 8-11% of subjects consumed sweets daily (Table 2). Daily around 28.7% of subjects smoked cigarettes, 23% of them used chewing form of tobacco and 4.8% of them used snuff and 1% of them used other forms of tobacco (Table 3). On a daily basis 49.4% of them never had drinks in the past one month, however 29.3% of them had around 2 drinks per day and 21.3% had more than 5 drinks per day. Majority of the subjects had completed primary level of education. 21.4% of subjects were illiterates while 1.3% were pre university college graduates.



Graph 1: Pie chart showing distribution of retained tooth among study population.



Graph 2: Bar graph showing state of teeth as perceived by the study population.



Graph 3: Bar graph showing state of gums as perceived by the study population.

Variable	Often	Sometimes	No	Total
Difficulty in biting food	280(70%)	78(19.5%)	42(10.5%)	400(100%)
Difficulty chewing food	25(6.3%)	60(15%)	315(78.8%)	400(100%)
Difficulty with speech, trouble pronouncing words	74(18.5%)	90(22.5)	236(59%)	400(100%)
Dry mouth	85(21.3%)	107(26.7%)	208(52%)	400(100%)
Felt embarrassed due to appearance of teeth	89(22.3%)	82(20.4%)	229(57.3%)	400(100%)
Felt tense because of problems with teeth and mouth	62(15.5%)	115(28.7%)	223(55.8%)	400(100%)
Have avoided smiling because of teeth	81(20.3%)	91(22.7%)	228(57%)	400(100%)
Had sleep that is often interrupted	85(21.3%)	73(18.3%)	242(60.4%)	400(100%)
Have taken days off work	86(21.5%)	83(20.8%)	231(57.7%)	400(100%)
Difficulties doing usual activities	84(21%)	81(20.3%)	235(58.7%)	400(100%)
Felt less tolerant of spouse	76(19%)	62(15.5%)	261(65.3%)	400(100%)
Have reduced participation in social activities	54(13.5%)	70(17.5%)	276(69%)	400(100%)

Table 1: Problems experienced in the past 12 months by the study subjects.

Variables	Never/seldom	Several times a month	Weekly	Daily	Total
Fresh fruits	60(15%)	42(10.4%)	193(48.3%)	105(26.3%)	400(100%)
Biscuits, cakes	46(11.5%)	63(15.7%)	207(51.7%)	84(21.1%)	400(100%)
Sweet pies, buns	86(21.5%)	77(19.3%)	195(48.7%)	42(10.5%)	400(100%)
Jam, honey	176(44%)	69(17.3%)	116(29%)	39(9.7%)	400(100%)
Chewing gums containing sugar	181(45.3%)	68(17%)	106(26.4%)	45(11.3%)	400(100%)
Sweet/candy	92(23%)	85(21.3%)	188(47%)	35(8.7%)	400(100%)
Lemonade, coca cola	58(14.5%)	75(18.7%)	203(50.8%)	64(16%)	400(100%)
Tea with sugar	33(8.3%)	16(4%)	66(16.5%)	285(71.2%)	400(100%)
Coffee with sugar	40(10%)	16(4%)	84(21%)	260(65%)	400(100%)

Table 2: Frequency of the food consumed by the subjects in small quantities.

Variables	Never	Occasionally	Every day	Total
Cigarettes	156(39%)	129(32.35%)	115(28.7%)	400(100%)
Cigars	287(71.7%)	91(22.8%)	22(5.5%)	400(100%)
Pipe	294(73.4%)	101(25.3%)	5(1.3%)	400(100%)
Chewing tobacco	155(38.7%)	153(38.3%)	92(23%)	400(100%)
Use snuff	315(78.8%)	66(16.4%)	19(4.8%)	400(100%)
Others	346(86.5%)	50(12.5%)	4(1%)	400(100%)

Table 3: Frequency of different types of tobacco being used by the study subjects.

Discussion

The present study describes the self-perceived oral health among Autorickshaw drivers in Davanagere city. Majority of the Autorickshaw drivers in Davangere city perceived their state of teeth and gums as average. The results of the present study could not be compared with other studies as on literature search authors could not find any study done on Autorickshaw drivers assessing their self-perceived oral health status.

When data regarding self-perceived oral health was collected, it was observed that majority of the subjects did not complain of any type of oral pain or missing teeth. Few studies done among Autorickshaw drivers assessing their occupational health problems indicated that the predominant health problems among Autorickshaw drivers were musculoskeletal problems, ocular problems, respiratory problems and hypertension and very few reported oral health related problems [8,15].

Majority of the drivers brushed their teeth regularly using toothbrush and toothpaste but unaware of the fluoride content in the toothpaste. Very few used indigenous oral hygiene aids. This result is in line with the results of the study done by Ganesh., *et al*. where majority of drivers brushed their teeth twice daily with tooth brush and paste [13]. Contrary to this finding only few auto drivers brushed their teeth regularly as seen in a study done by Raja Padium., *et al*. [16] Many drivers had never visited a dentist and frequently visited general medical practitioner for problems related to their oral health. Most common reason for visit to a dentist was oral pain.

The most common oral health problem faced by the drivers was difficulty in biting food and difficulty in speech and dry mouth. Around 20-30% of drivers were engaged in tobacco related habits like smoking and chewing tobacco. Study done by Manohar Bhatia., *et al*. in 2014 showed that prevalence of tobacco use among Autorickshaw drivers was 84.25% while prevalence of smoking and tobacco chewing were 58.25% and 70.25% respectively among Autorickshaw drivers of North India [6].

Study done by Veena Malwani., *et al*. in 2018 among Autorickshaw drivers in Bhopal revealed that 32% of them were engaged in tobacco chewing and 26% smoked and 20% engaged in both smoking and tobacco chewing [15]. Study done by Kirkorowiz., *et al*. found that smoking was a part of driver public social interaction perhaps the long working hours, night shifts and systemic problems imposed stress among Autorickshaw drivers which force them towards tobacco consumption [17]. A study done by Shashikala Amit Kumar in Bangalore revealed that the magnitude of stress among Autorickshaw drivers was 31.2%. [7]. Inspite of having awareness regarding tobacco use and oral cancer among Autorickshaw drivers engaged in tobacco consumption. Around 63.7% of Autorickshaw drivers were aware of that tobacco consumption leads to cancer according to study done by Ganesh., *et al*. [13].

Based on the study done by Manohar Bhatia in 2014, Autorickshaw drivers had good knowledge about harmful effects of tobacco, law on tobacco ban and Gutka ban. However, 84.25%of drivers used tobacco and reported that the most influencing factor for tobacco use was peer pressure [6].

Dietary habits among Autorickshaw drivers was not satisfactory as 65-71% of them frequently consumed tea or coffee with sugar as this could increase risk of dental caries. Around 16% of them consumed acidic beverages which could increase the risk of erosion of teeth.

Around 50.6% consumed alcohol daily which was very high. According to study done by Melwani., *et al*. in 2018, around 1.67% consumed alcohol daily which was very less compared to present study [15].

WHO standardized questionnaire for assessment of self-perceived oral health for adults was used in the study for ease of comparison of findings with other studies. The utility value of self-reported oral health measures is still largely unexplored. The self-assessment of oral health tools can be used as indicators of treatment needs or to estimate population level of effects of oral health problems on daily life. They may be used to evaluate improvements in oral health conditions of populations. They may also point out towards resources needed to care for a specific group of people. Studies should be directed to know whether interventions that improve self-perceived oral health also positively influence oral health and functional status.

Limitation of the study is that the study was a cross sectional questionnaire study and the subjective findings based on responses of the participants were not ascertained by the clinical oral examination. Further studies which linked self-reported oral health, quality of life measures and clinical indicators are recommended. Such studies may provide useful baseline data which can act as

indicators for improvement of oral health status by interventions targeted at Autorickshaw drivers [18].

Conclusion

Autorickshaw drivers in Davanagere city perceived their state of teeth and gums as average. Majority of drivers never visited a dentist and the most common reason for visiting a dentist was oral pain. The most common oral health problem was difficulty in biting food, difficulty in speech and dry mouth. Around 20-30% of drivers were engaged in tobacco related habits like smoking and chewing tobacco.

Conflict of Interest

None.

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Volume 3 Issue 9 September 2019