Is occupation the “driving force” for tobacco consumption? A cross-sectional study to assess prevalence, patterns, and attitude towards tobacco use among long-distance bus drivers and conductors in Western Maharashtra

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ABSTRACT

Background: Tobacco use remains a major cause of preventable deaths worldwide. The recent Global Adult Tobacco Survey 2016–2017 has shown the prevalence of tobacco use among Indian population to be 28.6%. In Maharashtra, 35.5% of all adult males either smoke tobacco or use some form of smokeless tobacco. Not much data are available on tobacco use with respect to different occupations in India, though risk of tobacco use is known to be higher among individuals in certain occupations. Methods: This cross-sectional descriptive study was conducted among 190 long-distance bus drivers and conductors of long route buses departing from one of the main bus stations of the State Transport Corporation in Pune city. Data were collected using a pretested, structured questionnaire by interview method. Results: Prevalence of tobacco consumption (TC) among the respondents was 55.8% (95% confidence interval; 48.4–63). Among the tobacco users, 54% reported initiation at age < 18 years “peer pressure” and “curiosity” were the main reasons for initiation while “feeling alert” and “feeling mature” were reasons for continued use. A large proportion (74.5%) of the respondents expressed their intention to quit tobacco in the near future. Conclusion: Long-distance bus drivers and conductors showed a high prevalence of TC which may be linked to certain occupation-related factors. Targeted tobacco cessation activities at workplaces may be considered as a strategy for better impact of tobacco control activities in India.

Keywords: Long-distance bus drivers, occupation, tobacco use

Tobacco use remains a major cause of preventable deaths worldwide.[1] There is a high prevalence of both smoking and smokeless tobacco use in India, with many resorting to dual use.[2] According to Global Adult Tobacco Survey (GATS) 2016–2017, the prevalence of tobacco use among Indian population is 28.6%, a decline of 6% from 34.6% from the last survey in 2009–2010. This includes 42.4% of men and 14.2% women who currently use tobacco in some form.[2] In Maharashtra, 26.6% of all adults (35.6% of males and 17% of females) smoke or use some form of smokeless tobacco.[3] Tobacco consumption (TC) is associated with ill-health, disability and death from noncommunicable chronic diseases and can also increase risk of death from communicable diseases.[3]

Occupation is a highly relevant determinant of social disparities in health including TC. In India according to

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a study based on GATS 2009–2010, people in manual occupations were more likely to smoke than those in professional or supervisory occupations. It has also been observed that in occupational groups, agriculture and labor class had the highest prevalence as compared to other groups. Similarly, nearly nine national US studies on occupation and smoking have reported that workers in working class occupations (e.g., blue-collar jobs) are more likely to smoke.

Thus individuals in certain occupations may have higher tobacco use due to occupational and environmental contingencies. Long-distance bus drivers may belong to this category as observed in some studies in India. Other occupations like construction workers have shown a high prevalence of tobacco use among the employees. Further, a study in Kolkata on software engineers observed that 63% employees had multiple addictions like smoking and tobacco use in other forms.

Keeping mind the unique nature of their occupation, the study was planned to understand tobacco behavior, their knowledge, and attitude regarding tobacco use among “long-distance bus drivers and conductors” of Pune from the State Transport Service of Maharashtra.

METHODS

The cross-sectional descriptive study was carried out in the largest intercity bus stand of Maharashtra State Road Transport Corporation (MSRTC) in Pune, Western Maharashtra. Pune is the second-largest city in the state.

Sample size was estimated assuming that knowledge of TC among long-distance bus drivers and conductors as 0.7, absolute precision of 7%, and for 95% confidence interval (CI). The calculated sample size was 165, however, the study included 190 bus drivers and conductors of long route buses departing from the MSRTC bus station.

Long-distance bus drivers and conductors were defined as those who travel a distance of more than 200 km in a single trip. All respondents, i.e., bus drivers and conductors were regular salaried employees of the State Transport Corporation. Requisite permission was taken from the appropriate authorities at the bus station. The study was approved by the Institutional Ethics Committee. Data were collected by face to face interview schedule using a structured questionnaire.

A written consent of participants in the study was taken and confidentiality was assured. Participants were also told about the voluntary nature of the study. They were approached and interviewed individually by a single investigator to minimize the inter-rater bias. The questionnaire was adapted from the GATS 2016–2017 and was pilot tested among 20 respondents. The final analysis did not include these twenty subjects. Data on current smokers defined as those who have smoked in the last 48 h were collected. The collected data were entered in Microsoft Excel 2007 and converted into IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp. Descriptive statistics was used to describe the distribution of all variables. P = 0.05 was taken as significant.

RESULTS

The 190 respondents consisted of 126 drivers and 64 conductors – all males from 19 to 54 years (mean age: 30.8 years; standard deviation: 8). The sociodemographic characteristics are shown in Table 1.

The overall prevalence of tobacco use was found to be 55.8% (n = 106; 95% CI: 48.4–63). Regarding the most common form of tobacco, it was seen that majority of respondents used smoked forms of tobacco which included cigarettes (36.8%) and beedi (31%). Moreover, the common forms of chewable tobacco prevalent among the respondents were gutkha (16.1%) and khaini (16.1%) [Table 2].

More than half of the tobacco users, i.e., 57 users (54%; 95% CI: 43.8–63.5) reported that they started tobacco use before they were 18 years of age.

In the study, “peer pressure” was the most common reason to initiate tobacco use among 52 (49%) of tobacco users, followed by “curiosity” in 31 (29%), whereas 15 (14%) of the participants cited that there was a definite “influence from family members” like father and uncles who made them start tobacco use. Close to 10% of the tobacco users started tobacco use as it made them feel grown-up, mature, and socially acceptable, as depicted in Figure 1.

Regarding the single most important reason to continue smoking, it was observed that a feeling of “being alert” while on duty compelled the participants to continue tobacco use among 64 (61%) of participants, whereas 25% continued as tobacco use gave them a feeling of “being mature.” Close to 10% of the tobacco users continue as it provided participants relief from stress in their hectic schedule. Close to 5% cited reasons such as to “to get rid of boredom” and “to prevent feeling cold” for continuing tobacco use.

A total of 92.6% of respondents were aware that tobacco use can cause ill effects to health and they were
homogenously distributed among tobacco user and nonuser group [Table 3]. About 81.5% of them were aware that tobacco use is a risk factor for various types of cancers. However, only 10.9% of tobacco users were aware that TC can cause heart disease as compared to 20.2% among nonusers (P = 0.005). Regarding their perception about the most harmful form of tobacco, 69.8% of the tobacco users felt “cigarette” was the most harmful tobacco type, followed by “bidi” (17%) and “gutkha” (10.4%) while higher percentage of nonusers (38.1%) felt bidis most harmful form of tobacco. A total of 71.7% agreed among tobacco users that quitting tobacco will improve their health and 74.5% expressed their desire to quit tobacco use among tobacco users in the near future with medical help.

Among tobacco users, 76.4% have tried to quit tobacco at least once in the past 1 year whereas 68% have tried to reduce tobacco intake.

Table 4 shows the association of sociodemographic and occupational characteristic with TC. There was no statistical significant association between any of the characteristic variables and TC.

DISCUSSION

The study describes the patterns and prevalence of tobacco use among long-distance bus drivers and conductors in Western Maharashtra. A high proportion of tobacco use was observed among bus drivers and conductors 55.8% (n = 106; 95% CI: 48.4–63) in the study as compared to the general male population of the state (35.6%) and country (42.4%).[4] Most studies in India and abroad have found a similar result among long-distance bus drivers and conductors, though the proportions show a wide variation. The findings are comparable with the study done by Parashari et al. on bus drivers in Western Uttar Pradesh. They found the prevalence of smoked tobacco of 47.9% and smokeless tobacco of 50.1% among bus drivers.[5] Similarly, a cross-sectional study done by Lakshman et al. on the bus drivers of North Kerala has found a prevalence of smoked tobacco use of 46% and smokeless tobacco use of 15.6%.[8] However, the prevalence in the present study is lower than that seen in some other studies in India, it was 81.7% in a study conducted by Saroj et al.[7] and 93% by a study done by Goon and Bipasha.[13]

In the current study, the high prevalence may be attributed to some extent to work stress. The long-distance drivers and conductors are usually away from their home, mostly with their colleagues in the bus or in the bus station, an environment conducive for tobacco use. The present study, however, did not find an association for long distance and TC. This may be because of lower power of the study and misclassification among the groups.

![Figure 1: Reasons for initiation of tobacco use](image-url)
Table 4: Association of sociodemographic and occupational characteristics with tobacco consumption

| Variable                  | Tobacco user | P      |
|---------------------------|--------------|--------|
|                          | Yes (n=106), n (%) | No (n=84), n (%) |
| Education                 |              |        |
| Primary                   | 7 (6.6)      | 9 (10.7) | 0.053 |
| Secondary                 | 44 (41.5)    | 30 (35.7) |        |
| Higher secondary          | 49 (46.2)    | 31 (35.9) |        |
| Graduate                  | 6 (5.7)      | 14 (16.7) |        |
| Marital status            |              |        |
| Unmarried/divorced        | 52 (49.1)    | 47 (56) | 0.3    |
| Married                   | 54 (50.9)    | 37 (44) |        |
| Age                       |              |        |
| <35                       | 54 (50.9)    | 39 (46.4) | 0.5    |
| >35                       | 52 (49.1)    | 45 (53.6) |        |
| Alcohol consumption       |              |        |
| Yes                       | 63 (59.4)    | 43 (51.2) | 0.3    |
| No                        | 43 (40.6)    | 41 (48.8) |        |
| Duration of driving (h/week) |          |        |
| <60                       | 38 (35.8)    | 40 (47.6) | 0.1    |
| >60                       | 68 (64.2)    | 44 (52.4) |        |
| Daily average driving (km) |          |        |
| <250                      | 66 (62.3)    | 55 (65.5) | 0.6    |
| >250                      | 40 (37.7)    | 29 (34.5) |        |

Figure 2: Reasons for continuation of tobacco use

Although 54% of tobacco users were initiated into tobacco use before 18 years of age, i.e., prior to taking up the occupation, contingencies of long working hours and night duties may helped in continuation of its use. The major cause of continuation of TC in the current study was to be “feeling alert” which was similar to other studies. The second most common reason cited for continuation of its use is “to feel mature” (22.5%), which is also comparable with other studies. Nicotine is the primary rewarding compound in tobacco that establishes and maintains tobacco use. Factors which allow for continuation of smoking probably involve a complex interaction between aversive and rewarding influences of nicotine, as well as environmental variables including peer group approval and economics. Recent advances in molecular genetics have indicated that nicotine’s rewarding effects appear to be mediated through distinct subunits of the nicotinic acetylcholine receptor. It clearly shows a need for preventive measures like health education regarding harmful effects of tobacco use, creating tobacco-free homely environment and preventing minors from tobacco exposure.

The disparity in prevalence of TC by occupation has been observed in some more studies in India and abroad. A study in Kolkata by Jha et al. on software engineers observed that 63% employees working in the industry had multiple addictions like smoking and tobacco use in various forms. Studies have also observed that prevalence is higher in blue-collar jobs and in those with low levels of education. This has been attributed to multiple reasons, e.g., relieving boredom, isolation, increasing alertness, or facilitating camaraderie with others and also considered by many to be a quick-fix solution to stress.

Education or lack of it also seems to be a strong predictor of tobacco use. Although the present study did not find any significant association with education, numerous surveys in India have shown a greater prevalence of tobacco use among the less educated and illiterate. Tobacco use by the least educated is in large measure practiced in ignorance of the health consequences and a desire for a low-cost source of pleasure and satisfaction. It has been documented that educated people are more likely to understand the harms of tobacco use and thus decide to stay away from this habit. Education influences the treatment-seeking behavior of an individual wherein they are more likely to seek help of a counselor/doctor for quitting tobacco use. In the present study, the same was not observed this may be due to small numbers in category of primary and below as well as graduate and above.

Though high percentage of study participants had tried and expressed their desire to quit TC yet they were not succeeded, possibly due to physical and psychological dependence or feeling of addiction. Health concern was the main reason (65.3%) among those who tried to quit TC according to a study done by Saroj et al. The result of the study conducted by Echer et al. in 2011 also showed the same. Tobacco users acknowledge their addiction to nicotine and that the withdrawal symptoms hinder the achievement of success in their attempts of quitting tobacco. Tobacco users also report pressure from family and high prices of tobacco as a reason for their attempts to quit smoking.

Although India has enacted and implemented cigarettes and Other Tobacco Products Act (2003) which prohibits trade and use of tobacco products in public places including workplaces, long-distance bus drivers and conductors by virtue of their unique working requirements do not seem to be affected by it. Although workplace tobacco cessation programs are known in a few places, such opportunities
are not yet available or accessible to the general population at most workplaces or otherwise. Simple steps in assisting the quitting of tobacco especially at workplace are likely to be very effective.

Facilities to quit tobacco like cessation clinics and counseling centers near workplaces, in this case bus stands may be thought of. The possibility of provision of nicotine chewing gums at these centers, to the staff which may bring a reduction in TC may be explored and studied.\textsuperscript{[23,24]} The authors do feel that tobacco cessation activities targeted at this high risk occupational group of bus drivers and conductors pose a unique challenge even for the workplace cessation efforts. Further studies may be carried out to understand the psychology of tobacco behavior specific to this occupation and other workplaces to think of solutions.

Since the study is limited to a single bus station in Pune, it may not be possible to generalize it to all long-distance bus drivers and conductors or to other population groups.

CONCLUSION

Long-distance bus drivers and conductors have a higher prevalence of TC than the general population. Although tobacco initiation was started before getting into the occupation, for many tobacco users, occupational factors apparently drove them to continue its use. Although motivated to quit tobacco, majority had tried do so without success. Thus, in addition to the existing laws, specific tobacco cessation activities and effective behavior change communications tailor made for such occupations is the need of the hour to help them quit tobacco.

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Conflicts of interest
There are no conflicts of interest.

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