

# Correlates of nicotine dependence among patients visiting a tobacco cessation centre in India: A retrospective analysis

PUNEET CHAHAR, VIKRANT R. MOHANTY, ASWINI Y.B., KAVITA RIJHWANI

## ABSTRACT

**Background.** We did a retrospective secondary analysis of 1-year data of a tobacco cessation clinic (TCC) to assess correlates of nicotine dependence among tobacco users visiting the TCC at a tertiary care dental hospital.

**Methods.** Secondary data were obtained from the records of patients who had visited the TCC from January to December 2019. Of the 1436 records, 1144 were found to contain all the information needed for the study. Patient records were obtained from a pre-validated standard TCC patient assessment sheet (PAS), which included various sections: Sociodemographic items, tobacco use profile items, nicotine dependence status, strategy used for cessation and follow-up details.

**Results.** Of the 1144 proformas, 97.1% ( $n=1111$ ) were of men and 2.9% ( $n=33$ ) were of women. Around 48.5% had medium nicotine dependence followed by high nicotine dependence (29.7%) and low nicotine dependence (21.8%). The mean (SD) age of initiation of tobacco use was 26.1 (9.44) years and a significantly lower age of initiation was observed in patients with high nicotine dependence. Greater number of years of tobacco use was significantly associated with high nicotine dependence. About 47% of patients had attempted to quit tobacco in the past and the quitting attempts were found to be significantly higher in patients with high dependence.

**Conclusion.** We explored crucial determinants of nicotine dependence among tobacco users reporting to the TCC. These factors may be incorporated in routine assessment of the tobacco use status and may be used in tailored cessation counselling strategies.

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## INTRODUCTION

Tobacco control efforts worldwide have seen progress with 65% of the world's population covered with at least one

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MPOWER strategy as per the WHO Framework Convention on Tobacco Control (FCTC). However, the 'O' component, i.e. 'Offer cessation' has seldom seen progress globally with only two-thirds of all the Parties including tobacco dependence diagnosis, treatment and counselling services in their national tobacco control strategies. Telephone quitline services are also offered in just 39% of the State Parties to the FCTC.<sup>1,2</sup>

Tobacco cessation is complex with strategies to target both behavioural and biological phenomena of tobacco, which also exist in the wider sociocultural milieu. Though India has seen a major decline in the tobacco prevalence since a decade with data suggesting 6% decrease between the two Global Adult Tobacco Surveys (GATS), a huge absolute count (>266 million, GATS-2) still poses a challenge.<sup>3</sup>

The primary substance responsible for sustained dependence and tobacco use is nicotine, which is a highly addictive psychomotor stimulant.<sup>4</sup> It is often compared with the addiction potential of cocaine, heroin and other substances. Data from the National Comorbidity Survey showed that 32% of all people who ever tried tobacco progressed to nicotine dependence; comparable statistics for heroin, cocaine and alcohol were 23%, 17% and 15%, respectively.<sup>5</sup>

The existing data for nicotine dependence and its associated factors are usually available for smoking and come from American and European countries.<sup>6–8</sup> The problem of tobacco is not as straight as cigarettes in Southeast Asian countries and further made complex with the existing burden of smokeless tobacco (SLT) users and dual users. Therefore, the conventional cessation strategies may need to be modified and thus demand understanding the larger domains that influence the addictive nature of nicotine, which is critical to plan appropriate cessation strategies.

## METHODS

Our study reports the findings of 1-year data available at the tobacco cessation clinic (TCC) of a tertiary care public dental hospital. The clinic caters to an average of 5–10 patients per working day and is operational 5 days a week. The clinic was set up in 2011 with an objective to provide brief cessation services to patients visiting the outpatient department of the institute. Tobacco users who attended the clinic over a 12-month period were included in this retrospective cross-sectional study.

Secondary data were obtained from the patient records who had visited the TCC from January to December 2019. The records were initially screened for completeness, accuracy and eligible recorded forms were included in the study. Of the 1436 records, 1144 had all the information needed for the study.

Patient records were obtained from a pre-validated standard TCC patient assessment sheet (PAS), which included various

sections: Sociodemographic items (age, gender, educational attainment, place of residence, occupation and marital status, socioeconomic scale as per Kuppuswamy),<sup>9</sup> tobacco use profile items (type of tobacco, age at initiation, duration of tobacco use, past quit attempts, relapse and current usage per day), nicotine dependence status, strategy used for cessation and follow-up details. For the purpose of the current study, cessation strategies and follow-up details were not included in the final analysis.

Nicotine dependence was assessed by a revised version of the Fagerström test for nicotine dependence (FTND) among smokers<sup>10</sup> and among smokeless tobacco users (FTND-ST).<sup>11</sup> The maximum scores were 10 and 16 for the two scales, respectively. Information was collected on self-use of other addictive substances (e.g. alcohol) and family history of tobacco use. A score of 1–3 was considered as low nicotine dependence, a score of 4–6 indicated medium nicotine dependence and a score of 7–10 was categorized as high nicotine dependence.<sup>12</sup>

The proforma was coded with pre-specified criteria and entered into a digital spreadsheet. Data were analysed using SPSS (version 21.0). Descriptive statistics (proportions or means) along with inferential testing using *F*-tests and  $\chi^2$  tests were used for the outcomes of interest; a *p* < 0.05 was significant.

## RESULTS

Of the 1144 proformas, 97.1% (1111) were of men and 2.9% (33) were of women. The mean (SD) age of the sample was 39.8 (11.4) years and of women visiting the TCC was 45.6 (10.1) years.

The majority (83.9%) were married and belonged to the upper lower/lower scale (50.4%) followed by lower middle (33.1%) socioeconomic class. About half of them were semi-skilled or skilled workers and 8.7% were unemployed. The average working hours were 9.55 (2.75). No significant association was observed

with any of the sociodemographic variables and level of nicotine dependence (Table I). Over three-fourths (78.3%; 781) of the sample were either SLT/dual users and the distribution was similar among women with 81.8% (27) being SLT users.

Of 1144 tobacco patients, 48.5% had medium nicotine dependence followed by high nicotine dependence (29.7%) and low nicotine dependence (21.8%). The mean (SD) age of initiation of tobacco for the sample was 26.1 (9.44) years. Women had a higher age of initiation of tobacco (30.9 [12.29] years) compared to the overall sample. A significantly early age of initiation was observed in patients with high nicotine dependence. A similar significant association was observed when greater number of years of tobacco use was associated with high nicotine dependence. The mean (SD) years of tobacco use was 13.6 (10.25) in the sample.

Family history and reason to quit tobacco in the past were not significantly associated with nicotine dependence. However, consuming SLT and use of dual form of tobacco was significantly associated with a higher level of dependence.

About 47% of patients had attempted to quit tobacco in the past and these attempts were significantly higher in patients with high dependence. Alcohol use was reported by only 3.8% of the sample population, however its use was significantly associated with higher level of nicotine dependence (Table II).

## DISCUSSION

We assessed the correlates of nicotine dependence among tobacco users visiting the TCC of a tertiary care dental public hospital. The mean age of the patients was 39.8 years with only a small number of women visiting the TCC. The women showed higher age of initiation of tobacco with the majority using SLT. The tobacco use (mainly SLT) among women in Southeast Asian

TABLE I. Sociodemographic characteristics and association with level of nicotine dependence

Variable	Total	Dependence			p value
		Low	Medium	High	
<i>Gender</i> †					0.88
Men	1111 (97.1)	243 (97.6)	538 (96.9)	330 (97.1)	
Women	33 (2.9)	6 (2.4)	17 (3.1)	10 (2.9)	
Mean (SD) age*	39.8 (11.40)	39.4 (12.41)	39.4 (11.02)	40.6 (11.22)	0.29
<i>Education</i> †					0.30
Illiterate	253 (22.1)	54 (21.7)	129 (23.2)	70 (20.6)	
Primary and middle	310 (27.1)	58 (23.2)	159 (28.6)	93 (27.4)	
High and intermediate	378 (33)	97 (39.0)	171 (30.8)	110 (32.6)	
Graduate and postgraduate	203 (17.7)	40 (16.1)	96 (17.3)	67 (19.7)	
<i>Socioeconomic status</i> †					0.74
Upper and upper middle	189 (16.5)	43 (17.3)	87 (15.7)	59 (17.4)	
Lower middle	379 (33.1)	84 (33.7)	177 (31.9)	118 (34.7)	
Upper lower and lower	576 (50.4)	122 (49.0)	291 (52.4)	163 (47.9)	
<i>Occupation</i> †					0.64
Unemployed	99 (8.7)	25 (10.0)	45 (8.1)	29 (8.5)	
Unskilled	207 (18.1)	43 (17.3)	99 (17.8)	65 (19.1)	
Semi-skilled and skilled	598 (52.3)	131 (52.6)	304 (54.8)	163 (47.9)	
Clerical/shop/farmer	210 (18.4)	43 (17.3)	93 (16.8)	74 (21.8)	
Semi-professional and professional	30 (2.6)	7 (2.8)	14 (2.5)	9 (2.6)	
Mean (SD) working hours*	9.55 (2.75)	9.32 (2.69)	9.58 (2.81)	9.67 (2.69)	0.33
<i>Marital status</i> †					0.63
Married	960 (83.9)	190 (76.3)	482 (86.8)	288 (84.7)	
Unmarried	164 (14.3)	53 (21.3)	65 (11.7)	46 (13.5)	
Others	20 (1.7)	6 (2.4)	8 (1.4)	6 (1.8)	

\* (n=1045) ANOVA test of significance † Chi-square test of significance Level of significance at 5%

TABLE II. Tobacco use profile and its association with level of nicotine dependence

Variable	Total	Dependence			p value
		Low	Medium	High	
Dependence	1144	249 (21.8)	555 (48.5)	340 (29.7)	–
Mean (SD) age of initiation*	26.1 (9.44)	26.9 (9.91)	26.6 (9.58)	24.8 (8.71)	0.008
Mean (SD) years of habit*	13.63 (10.25)	12.44 (10.76)	12.85 (9.70)	15.76 (10.46)	<0.001
<i>Family history</i> †					0.37
Yes	517 (45.2)	104 (41.8)	251 (45.2)	162 (47.6)	
No	627 (54.8)	145 (58.2)	304 (54.8)	178 (52.4)	
<i>Tobacco type</i> †					<0.001
Smoke form	363 (31.7)	130 (52.2)	168 (30.3)	65 (19.1)	
Smokeless	585 (51.1)	84 (33.7)	302 (54.4)	199 (58.5)	
Dual	196 (17.2)	35 (14.4)	85 (15.3)	76 (22.4)	
<i>Previous attempts at quitting tobacco</i> †					0.001
Yes	537 (46.9)	94 (37.8)	260 (46.8)	183 (53.8)	
No	607 (53.1)	155 (62.2)	295 (53.2)	157 (46.2)	
<i>Reason for relapse</i> †					0.11
Craving	355 (31.0)	72 (28.9)	167 (30.1)	116 (34.1)	
Social/peer pressure	132 (11.5)	19 (7.6)	66 (11.9)	47 (13.8)	
Others	50 (4.4)	3 (1.2)	27 (4.9)	20 (5.9)	
Not applicable	607 (53.1)	155 (62.2)	295 (53.2)	157 (46.2)	
<i>Alcohol use</i> †					0.002
No	1101 (96.2)	243 (97.6)	541 (97.5)	317 (93.2)	
Yes	43 (3.8)	6 (2.4)	14 (2.5)	23 (6.8)	

\* ANOVA test of significance † Chi-square test of significance Level of significance at 5%

countries including India, is chiefly poverty driven, associated with lower social stigma compared to smoking/drinking, which leads to social/cultural acceptability in women.<sup>13,14</sup>

The use of cessation services by women was lower than that by men<sup>15</sup> and a similar pattern has been observed in the use of inpatient healthcare services as well in India.<sup>16</sup> The reasons for such a pattern of healthcare utilization may be too much household responsibilities along with lack of decision-making power and control over resources in the family.<sup>17</sup> Lower utilization of tobacco cessation services may be linked with under-reporting of the habit which is often associated with social and cultural stigma. The lower proportion of women reporting to TCC is in line with studies done by D'Souza *et al.* and Mony *et al.* in Bengaluru and Saha *et al.* in West Bengal.<sup>18–20</sup>

The majority of the sample had medium dependence. This was similar to the findings of Parashar *et al.*<sup>21</sup>

The level of education, socioeconomic status and marital status were not significantly related to nicotine dependence in our study. This is in contrast to the findings of Parashar *et al.*, who reported the lower education and income group being significantly associated with higher nicotine dependence.<sup>21</sup> The age of initiation was higher compared to findings of GATS-2 (2016–17), India.<sup>22</sup> This observation may be due to geographical and sampling differences in our study where the source of data was hospital (TCC) records. Further high dependence group showed significantly lower age of initiation of tobacco use, which was in line with the findings of Sharapova *et al.*<sup>23</sup> and Ali *et al.*<sup>24</sup> who did studies among US adolescents.

The SLT and dual users constituted the major proportion of tobacco users in our study, which was in line with national representative data from GATS-2 (2016–17) in India where SLT users were 21.4% compared to smokers (10.7%). The high burden of SLT use in the Southeast Asian region is established, which is home to almost 90% (250 millions) of global SLT use.<sup>25,26</sup> Our study reported that higher proportions of SLT and dual

users were classified as medium or high level of dependence compared to smokers. The amount of nicotine delivered in SLT products is extremely high and may range from 1.7 to 76.2 mg per product,<sup>27</sup> though there is paucity of laboratory data on SLT and its nicotine dependence.

Overall, less than 50% of users reported family tobacco use, which was in contrast with the findings of Dwivedi *et al.* who reported 81% users with a family history of tobacco use.<sup>28</sup> The family history of tobacco use was higher in the medium and high dependence; however, it was not significant. A positive family history increases the likelihood of uptake of tobacco and thus higher risk of nicotine dependence is already well established.<sup>1,29</sup> The use of tobacco in the family led to normalization of smoke and SLT use; however, due to cultural values/norms the young may not smoke but the same is not applicable to SLT use.<sup>30</sup>

Around 47% of the participants had made a quit attempt in the past; however, the proportion was slightly higher than the reported national quit attempt rate of 42% for 21 years or older, as per GATS-2. The past quit attempt rate was significantly higher in the high and medium dependence compared to low dependence, which is in line with the findings of John *et al.* in Germany and Layoun *et al.* in Lebanon, who reported nicotine dependence was related to a higher number of quit attempts and remaining a smoker.<sup>31,32</sup> A higher nicotine dependence may lead to difficult sustained abstinence and frequent relapse and thus more quit attempts. However, some studies have also reported that low nicotine dependence was an independent predictor of reporting a past quit attempt.<sup>33</sup> A secondary analysis of GATS-2 has also shown that those with past quit attempts had higher odds of willingness to quit in the near future.<sup>34</sup>

Cessation is a continuous process and relapse is considered a component of it. Nicotine withdrawal is considered an important reason for persistent relapse episodes in tobacco users.<sup>35</sup> In our study, craving followed by social/peer pressure was the main reason for episodes of relapse. A greater nicotine dependence

has been shown to be associated with tobacco relapse.<sup>36</sup> A higher self-reported relapse rate (47%) in our study was similar to the 1-year risk of smoking relapse as reported in a national epidemiological survey.<sup>37</sup> Relapse is a common finding in the cessation process and a higher relapse in our study signifies the importance and need of tobacco cessation services in India.

Only a fraction of our sample reported alcohol use, which was low compared to the findings of Gupta *et al.* in Mumbai who reported 35.6% and 51.1% alcohol use in SLT and smokers.<sup>38</sup> The high nicotine dependence group showed greater alcohol consumption compared to the low and medium groups, however the association was not significant.

Though our study presents insights into the factors affecting nicotine dependence in India where tobacco use is made complex by dual use of smoke and SLT products, it presents data from a single TCC and thus may not be extrapolated at the national level. The data were chiefly self-reported and contain inherent social desirability and selective memory bias.

Our study represents itself as a template for further exploring the determinants and correlates of tobacco use and cessation, which may be used at the individual as well as the policy level for effective tobacco cessation strategies among Indians.

### Conclusion

Our study explored crucial determinants of nicotine dependence among tobacco users reporting to the TCC. Early age of initiation of tobacco, SLT, greater number of years of tobacco use, presence of previous attempts to quit and alcohol use were significant determinants of higher nicotine dependence. These factors may be incorporated in routine assessment of the tobacco use status and may be used in tailored cessation counselling strategies.

*Conflicts of interest.* None declared

### REFERENCES

- Kalan ME, Bahelah R, Bursac Z, Taleb ZB, DiFranza JR, Tleis M. *et al.* Predictors of nicotine dependence among adolescent waterpipe and cigarette smokers: A 6-year longitudinal analysis. *Drug Alcohol Depend* 2020;**217**:108346.
- Global progress report on implementation of the WHO framework convention on tobacco control. Geneva:WHO; 2018. Available at [www.who.int/fctc/reporting/summary\\_analysis/en/](http://www.who.int/fctc/reporting/summary_analysis/en/) (accessed on 18 Aug 2021).
- Racicot S, McGrath JJ, Karp I, O'Loughlin J. Predictors of nicotine dependence symptoms among never-smoking adolescents: A longitudinal analysis from the Nicotine Dependence in Teens Study. *Drug Alcohol Depend* 2013;**130**:38–44.
- Benowitz NL. Nicotine addiction. *N Engl J Med* 2010;**362**:2295–303.
- Substance Abuse and Mental Health Services Administration. Results from the 2013 National Survey on Drug Use and Health: Summary of national findings. NSDUH Series H-48, HHS Publication No. (SMA) 14-4863. 2014;1–43.
- Hu MC, Davies M, Kandel DB. Epidemiology and correlates of daily smoking and nicotine dependence among young adults in the United States. *Am J Public Health* 2006;**96**:299–308.
- Kandel DB, Griesler PC, Hu MC. Intergenerational patterns of smoking and nicotine dependence among US adolescents. *Am J Public Health*. 2015;**105**:e63–72.
- Kaleta D, Polańska K, Korytkowski P, Usidame B, B<sup>1</sup>k-Romaniszyn L. Patterns of nicotine dependence in four Eastern European countries. *BMC Public Health*. 2015;**15**:1–2.
- Socioeconomic scale K, Varma A, Shaikh Z. Modified Kuppuswamy socioeconomic scale updated for the. *Indian J Forensic Comm Med* 2020;**7**:1–3.
- Heatherton TF, Kozlowski LT, Frecker RC, Fagerström KO. The Fagerström test for nicotine dependence: A revision of the Fagerström tolerance questionnaire. *Br J Addict* 1991;**86**:1119–27.
- Ebbert JO, Patten CA, Schroeder DR. The Fagerström test for nicotine dependence-smokeless tobacco (FTND-ST). *Addict Behav* 2006;**31**:1716–21.
- Rahman AU, Mohamed MH, Jamshed S, Mahmood S, Baig MA. The development and assessment of modified Fagerstrom test for nicotine dependence scale among Malaysian single electronic cigarette users. *J Pharm Bioallied Sci* 2020;**12** (Suppl):S671–S675.
- Aghi M, Gupta R. 'Why the issue of women and tobacco needs a focused, multi-sectoral, consultative, community level interventions?'. *EC Clin Med Case Reports* 2021;**4**:44–6.
- Ruhil R. Sociodemographic determinants of tobacco use in India: Risks of risk factor—An analysis of global adult tobacco survey India 2016–2017. *SAGE Open* 2019;**9**.
- Allen AM, Yuan NP, Wertheim BC, Krupski L, Bell ML, Nair U. Gender differences in utilization of services and tobacco cessation outcomes at a state quitline. *Transl Behavior Med* 2019;**9**:663–8.
- Patel R, Chauhan S. Gender differential in health care utilisation in India. *Clin Epidemiol Global Health* 2020;**8**:526–30.
- Ram Prakash R, Lingam L. Why is women's utilization of a publicly funded health insurance low?: A qualitative study in Tamil Nadu, India. *BMC Public Health* 2021;**21**:1–21.
- D'Souza G, Rekha DP, Sreedaran P, Srinivasan K, Mony PK. Clinico-epidemiological profile of tobacco users attending a tobacco cessation clinic in a teaching hospital in Bangalore city. *Lung India* 2012;**29**:137–42.
- Mony PK, Rose DP, Sreedaran P, D'Souza G, Srinivasan K. Tobacco cessation outcomes in a cohort of patients attending a chest medicine outpatient clinic in Bangalore city, southern India. *Indian J Med Res* 2014;**139**:523–30.
- Saha I, Islam K, Paul B, Som TK. Nicotine dependence and its correlates among the adult tobacco users in a slum of Burdwan district, West Bengal, India. *J Family Med Prim Care* 2017;**6**:813–18.
- Parashar M, Agarwalla R, Mallik P, Dwivedi S, Patvagekar B, Pathak R. Prevalence and correlates of nicotine dependence among construction site workers: A cross-sectional study in Delhi. *Lung India* 2016;**33**:496–501.
- World Health Organization. Global Adult Tobacco Survey 2016–17. Available at [www.who.int/tobacco/surveillance/gats/en/index.html](http://www.who.int/tobacco/surveillance/gats/en/index.html) (accessed on 12 Aug 2021).
- Sharapova S, Reyes-Guzman C, Singh T, Phillips E, Marynak KL, Agaku I. Age of tobacco use initiation and association with current use and nicotine dependence among US middle and high school students, 2014–2016. *Tob Control*. 2020;**29**:49–54.
- Ali FR, Agaku IT, Sharapova SR, Reimels EA, Homa DM. Peer reviewed: Onset of regular smoking before age 21 and subsequent nicotine dependence and cessation behavior among US adult smokers. *Prev Chronic Dis* 2020;**17**:1–6.
- Sinha DN, Gupta PC, Ray C, Singh PK. Prevalence of smokeless tobacco use among adults in WHO South-East Asia. *Indian J Cancer* 2012;**49**:342–6.
- Zhao L, Mbulo L, Twentymen E, Palipudi K, King BA. Disparities in smokeless tobacco use in Bangladesh, India, and Pakistan: Findings from the Global Adult Tobacco Survey, 2014–2017. *Plos One* 2021;**16**:e0250144.
- Reddy SS, Ali KS. Estimation of nicotine content in popular Indian brands of smoking and chewing tobacco products. *Indian J Dent Res* 2008;**19**:88–91.
- Dwivedi S, Pathak R, Agarwalla R, Ali W. The intergenerational transmission of tobacco habit: Role of parents and the family. *J Family Med Prim Care* 2016;**5**:373–77.
- Sharma R, Martins N, Tripathi A, Caponnetto P, Garg N, Nepovimova E, *et al.* Influence of family environment and tobacco addiction: A short report from a post-graduate teaching hospital, India. *Int J Environ Res Public Health* 2020;**17**:2868.
- Chadda RK, Sengupta SN. Tobacco use by Indian adolescents. *Tob Induc Dis* 2002;**1**:111–19.
- John U, Meyer C, Hapke U, Rumpf HJ, Schumann A. Nicotine dependence, quit attempts, and quitting among smokers in a regional population sample from a country with a high prevalence of tobacco smoking. *Prev Med* 2004;**38**:350–8.
- Layoun N, Hallit S, Waked M, Bacha ZA, Godin I, Levêque A, *et al.* Predictors of past quit attempts and duration of abstinence among cigarette smokers. *J Epidemiol Glob Health* 2017;**7**:199–206.
- Ayo-Yusuf OA, Omole OB. Nicotine dependence, socioeconomic status, lifestyle behaviours and lifetime quit attempts among adult smokers in South Africa. *S Afr Med J* 2020;**110**:796–801.
- Kar SS, Sivanantham P, Rehman T, Chinnakali P, Thiagarajan S. Willingness to quit tobacco and its correlates among Indian tobacco users—Findings from the Global Adult Tobacco Survey India, 2016–17. *J Postgrad Med* 2020;**66**:141–8.
- Caponnetto P, Keller E, Bruno CM, Polosa R. Handling relapse in smoking cessation: Strategies and recommendations. *Intern Emerg Med* 2013;**8**:7–12.
- Edwards KC, Kasza KA, Tang Z, Stanton CA, Sharma E, Halenar MJ, *et al.* Correlates of tobacco product reuptake and relapse among youth and adults in the USA: Findings from the PATH Study Waves 1–3 (2013–2016). *Tob Control* 2020;**29** (Suppl 3):S216–S226.
- García-Rodríguez O, Secades-Villa R, Flórez-Salamanca L, Okuda M, Liu SM, Blanco C. Probability and predictors of relapse to smoking: Results of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). *Drug Alcohol Depend* 2013;**132**:479–85.
- Gupta PC, Maulik PK, Pednekar MS, Saxena S. Concurrent alcohol and tobacco use among a middle-aged and elderly population in Mumbai. *Natl Med J India* 2005;**18**:88–91.