International Journal of Community Medicine and Public Health
Rajiva et al. Int J Community Med Public Health. 2022 Jan;9(1):171-174
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20214991

Original Research Article

Tobacco consumption patterns amongst recruits at a training centre

Rajiva[1], Sukhmeet Minhas[2], Basavaraj[2], P. M. P. Singh[2]*, A. K. Yadav[2]

[1]Chief Medical Officer and Consultant (Full Time), Tehri Hill Development Corporation, Uttarakhand, India
[2]Department of Community Medicine, Armed Forces Medical College, Pune, Maharashtra, India

Received: 04 October 2021
Revised: 12 November 2021
Accepted: 07 December 2021

***Correspondence:**
Dr. P. M. P. Singh,
E-mail: ltcolpmpsingh@yahoo.com

ABSTRACT

Background: Approximately 3 million premature deaths occur every year due to tobacco. Gaps were observed in the scientific knowledge about tobacco consumption practices among armed forces personnel in our country. Keeping in view the paucity of studies in this field workers chose to undertake the present study.
Methods: A cross-sectional study was conducted among service personnel across a training centre to determine prevalence of tobacco consumption. The sample size was calculated to estimate 95% confidence interval for prevalence of tobacco consumption with 5% absolute precision. The minimum sample size was calculated to be 250, however, 285 personnel were included in the study. "Personal interview technique" was used for data and standard statistical methods were utilized for data analysis.
Results: The mean age (standard deviation) of the study subjects was 20.80 years (1.23). The overall prevalence of currently using tobacco in any form was 9.82%, mean (SD) of number of years of tobacco use was 2.33 years (1.27). Mean (SD) of number of cigarettes/bidis smoked per day was 7.52 (6.71). Average amount spent on tobacco consumption per month was Rs310.95 (2.42% of monthly salary). The commonest reasons for smoking is peer pressure, to relax and feel like hero.
Conclusions: Our study has helped to fill in the existing gaps in the scientific knowledge about tobacco consumption practices among armed forces personnel in our country.

Keywords: Consumption, Military, Population, Tobacco

INTRODUCTION

Despite its legal status, tobacco is responsible for far more deaths than all other psychoactive substances combined. Approximately 3 million premature deaths occur every year due to tobacco. In developed countries, tobacco accounts for nearly 30 per cent of all cancer deaths. Tobacco related diseases other than cancer such as stroke, myocardial infarction, aortic aneurysm and peptic ulcer account for more deaths.[1]

The researchers could obtain adequate literature prevalence of e-cigarette smoking and prevalence of exposure to e-cigarette advertisements.[2,3] However, despite extensive literature search, the researchers observed that there was very little published data available on actual prevalence of tobacco consumption both in the general population and in the military population. Gaps were observed in in the scientific knowledge about tobacco consumption practices among Armed Forces personnel in our country, which need to be filled. Keeping in view the importance of tobacco consumption due to its role as a modifiable risk factor in various diseases, and the paucity of studies in this field in the Armed Forces the researchers chose to undertake the present study. The primary objective of the study was to estimate the prevalence of tobacco consumption among recruits. The secondary objectives were to estimate number of cigarettes/bidis smoked per day and average

amount spent for purchasing of tobacco products per month.

METHODS

General settings and research design

A cross-sectional study was conducted among service personnel across a training centre to determine prevalence of tobacco consumption.[4] The study population comprised of recruits; and recruits who passed out on completion of their training.

Place of study and study period

The study was conducted in a training centre located in Western Maharashtra between April to May 2021.

Inclusion criteria

All recruits on the strength of the training centre who were available and gave their consent were included in the study sample.

Exclusion criteria

All recruits on the strength of the training centre who were available and did not give their consent were excluded from the study sample.

Ethical approval

Ethical approval was obtained from the institutional ethical committee.

Sample size and sampling technique

The sample size was calculated to estimate 95% confidence interval for prevalence of tobacco consumption with 5% absolute precision. Studies carried out by various workers in this field indicated that the prevalence of tobacco consumption among military population is around 20%.[5] The minimum sample size was calculated to be 250 assuming the prevalence to be 20%. However 285 service personnel were included in the study. The study subjects were selected using stratified random sampling, 145 and 140 service personnel were selected from two strata namely recruits (stratum 1); and recruits who passed out on completion of their training (stratum 2) respectively. Service personnel who report to the training centre for their pension documentation, prior to proceeding on pension could not be included in the study due to the raging second wave of the COVID-19 pandemic.

Instruments and techniques

Based on advice of experts from the field; and available literature, a questionnaire tool was developed. The workers pretested the tool by conducting a pilot study. The tool was suitably modified based on the findings of the pilot study. "Personal interview technique" was used for data collection from the study subjects. Standard statistical methods, SPSS-23 version were utilized to carry out the data analysis.[6,7]

RESULTS

We included 285 service personnel in the study. Stratum wise age distribution of the study subjects is tabulated in Table 1. The mean age (standard deviation) of the study subjects in the first and second stratum and overall was 20.88 years, (1.43), 20.71 years (0.98) and 20.80 years (1.23) respectively. In the first and second stratum and overall 13, and 15 were currently using tobacco in any form respectively. The overall prevalence of currently using tobacco in any form was 9.82%. All the tobacco users were smoking cigarettes of various brands. None of them were smoking bidis, or consuming smokeless tobacco in any form.

Table 1: Age distribution of each stratum.

Age group (yrs)	First stratum numbers (%)	Second stratum numbers (%)	Total
<20	025 (17.24)	014 (10.00)	039 (13.68)
20-25	120 (82.76)	126 (90.00)	246 (86.32)
Total	145 (100.00)	140 (100.00)	285 (100.00)

Table 2: Number of years of tobacco use.

Number of years of smoking	First stratum numbers (%)	Second stratum numbers (%)	Total
< 1	07 (053.85)	03 (020.00)	10 (035.71)
1-2	04 (030.77)	04 (026.66)	08 (028.57)
2-3	01 (007.69)	03 (020.00	04 (014.28)
3-4	01 (007.69)	04 (026.66)	05 (017.85)
4-5	00 (000.00)	01 (006.66)	01 (003.57)
Total	13 (100.00)	15 (100.00)	28 (100.00)

Table 2, shows the number of years of tobacco use which consists smoking cigarettes/bidis per day in each stratum; and overall, mean (SD) of number of years of tobacco use was 2.33 years (1.27).

Table 3: Quantum of smoking cigarettes/bidis per day.

Number of cigarettes/bidis smoked per day	First stratum numbers (%)	Second stratum numbers (%)	Total
<5	07 (53.85)	05 (33.33)	12 (42.85)
5-10	05 (38.46)	03 (20.00)	08 (28.57)
10-20	00 (00.00)	04 (26.67)	04 (14.28)
>20	01 (07.69)	03 (20.00)	04 (14.28)
Total	13 (100.00)	15 (100.00)	28 (100.00)

Table 3, shows the number of cigarettes/bidis smoked per day in each stratum and overall, mean (SD) of number of cigarettes/bidis smoked per day was 7.52 (6.71).

Table 4: Prevalence of current smokers in each age group.

Age group	Current smokers	Prevalence	Total
<20	03	08.10	037
20-25	25	10.08	248
Total	28	09.82	285

Chi square = 0.70, p>0.05

Table 4, shows age group wise prevalence of current smokers. Prevalence of current smokers increased from the age group of <20 years to 20-25 years. However, this increase was not statistically significant (p>0.05).

Table 5: Average amount spent on tobacco consumption per month (Percentage of monthly salary spent on tobacco consumption).

First stratum	Second stratum
220 (02.00)	410 (2.92)

In both the study strata all the subjects were able to name at least to three harmful effects of tobacco consumption.

Commonest source of information regarding harmful effects of tobacco in the first strata was television/radio, wherein 126 (86.89%); reported the source of information as television/radio. The next commonest sources of information were, internet 117 (80.68%), regimental medical officer/hospital with 108 (74.48%) followed by friend/relative 105 (72.41%). In the second strata the commonest source of information as reported by the study subjects was regimental medical officer/hospital wherein 112 (80.00%) reported this as their source of information, followed by internet, 103 (73.57%), television/radio, 97 (69.28%); and friend/relative 88 (62.85%).

Average amount spent on tobacco consumption per month across both the strata was Rs310.95 (2.42% of monthly salary). Average amount spent on tobacco consumption per month by each stratum and average percentage of monthly salary spent on tobacco consumption is presented in Table 5. The commonest reasons for smoking across all strata was peer pressure, to relax and feel like hero, wherein, 23 (89.28%), 19 (67.85%) and 15 (53.57%) out of 28 current smokers respectively gave this reason.

DISCUSSION

Several workers have reported use of smokeless tobacco in a military population ranging from 6.7% to 24.4% respectively.[8-12] Lin et al reported an alarmingly high prevalence of 32.6% and 11.6% of smokeless tobacco use in the US army and air force respectively.[13] The findings of the above studies are in stark difference from that of our study wherein prevalence of smokeless tobacco was zero percent. The findings of our study are similar to that of Rajiva et al wherein prevalence of smokeless tobacco in military population was reported to be zero percent.[5]

A high tobacco use of 27.1% by US air force trainees was reported by Little et al.[14] Chu et al reported a prevalence of smoking of 32.1%, 32.8%, and 32.4% for the army, navy, and air force, respectively.[15] Chisick et al reported the highest level of smoking (42.8%) among 18-34 year old white men on active duty. These workers also reported that the prevalence of smoking doubled for non-white/non-black men from 11.5% to 26.4% and quadrupled for black men from 5.4% to 20.4% between recruits and personnel on active duty.[12] These figures were much higher than those of the present study. A much lower prevalence of 6.5% was reported by Arlene et al in their study carried out on 473 students in a police academy.[16] The results of the above studies differ from our present study wherein 9.09% of fresh recruits were current smokers. A non-significant increase in the percentage of smokers over the years at the police academy was reported by Arlene et al.[16] This is similar to the findings of our study. The overall prevalence of smoking of 9.82% as observed in our study, is much lower than the figure of 20.81% as reported by Rajiva et al in their study carried out on 913 study subjects.[5] Nain et al also reported a decrease in prevalence of smoking in young military conscripts from 48.6% to 31% from 2006 to 2014.[15] This lower prevalence of smoking in our study could be attributed to increased awareness about the harmful effects of tobacco due to sustained continuous ongoing health education by the regimental medical officers across the country over the years.

Our study is limited in the sense that the sample may not be truly representative of the population of military recruits. Besides, personnel proceeding on pension could not be included in the study due to the raging second wave of the COVID-19 pandemic.

However, strength of our current study includes a large sample size in a military population with timely data. The current study is one of the pioneering study which has documented the decreasing prevalence of tobacco consumption in the Indian military.

CONCLUSION

Tobacco plays an important role as a modifiable risk factor in various studies. However, as observed by the researchers adequate literature in this field pertaining to the armed forces in our country was conspicuous by its absence. This prompted the researchers to carry out this study. Our study has helped to fill in the existing gaps in the scientific knowledge about tobacco consumption practices among armed forces personnel in our country.

Recommendations

We would like to recommend that more such studies be carried out across the country. This will further the cause of validating the findings of the present study. The workers would also like to recommend that extensive intervention efforts be directed at various forms of tobacco consumption to address this important public health issue for this at risk population.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Park JE, Park K, eds. Textbook of Preventive and Social Medicine. 26th edn. Jabalpur: M/s Banarsidas Bhanot publishers; 2021.
2. Hughes K, Bellis MA, Hardcastle KA, McHale P, Bennett A, Ireland R, et al. Associations between e-cigarette access and smoking and drinking behaviours in teenagers. BMC Public Health. 2015;15(1):1-9.
3. Marynak K, Gentzke A, Wang TW, Neff L, King BA. Exposure to electronic cigarette advertising among middle and high school students- United States, 2014-2016. Morbid Mortal Week Rep. 2018;67(10):294.
4. MacMahon B, Pugh TF. Epidemiology: principles and methods. 1st edn (10th Reprint). Little Brown and Co, Boston USA; 1910.
5. Rajiva K, Singh PMP, Minhas S, Basannar DR. Prevalence of tobacco consumption among military population : a multicentric study. Glob J Res Analysis. 2020;9(5), 2020.
6. Lwanga SK, Lemeshow S. Sample size determination in health studies. A practical manual. WHO Geneva; 1991.
7. Peacock JL, Peacock PL. Oxford handbook of medical statistics. 1st edn. Oxford Medical Publications: Oxford University Press; 2011.
8. Grasser JA, Childers E. Prevalence of smokeless tobacco use and clinical oral leukoplakia in a military population. Mil Med. 1997;162(6):401-4.
9. Vander Weg MW, Peterson AL, Ebbert JO, DeBon M, Klesges RC, Haddock CK. Prevalence of alternative forms of tobacco use in a population of young adult military recruits. Addict Behav. 2008;33(1):69-82.
10. Little MA, Derefinko KJ, Bursac Z, Ebbert JO, Colvin L, Talcott GW, et al. Prevalence and correlates of tobacco and nicotine containing product use in a sample of United States Air Force trainees. Nicotine Tobacco Res. 2015;18(4):416-23.
11. Lin J, Zhu K, Soliván-Ortiz AM, Larsen SL, Schneid TR, Shriver CD, et al. Deployment and smokeless tobacco use among active duty service members in the US Military. Milit Med. 2019;184(3-4):e183-90.
12. Chisick MC, Poindexter FR, York AK. Comparing tobacco use among incoming recruits and military personnel on active duty in the United States. Tobacco Control. 1998;7:236-40.
13. Lin J, Zhu K, Soliván-Ortiz AM, Larsen SL, Schneid TR, Shriver CD, et al. Smokeless tobacco use and related factors: a study in the US military population. Am J Health Behav. 2018;42(4):102-17.
14. Little MA, Bursac Z, Derefinko KJ, Ebbert JO, Talcott GW, Hryshko-Mullen A, et al. Types of dual and poly-tobacco users in the US military. Am J Epidemiol. 2016;184(3):211-8.
15. Chu NF, Lin FH, Wu YC. Prevalence and trends of cigarette smoking among military personnel in Taiwan: results of 10-year anti-smoking health promotion programs in military. Milit Med. 2017;182(7):e1933-7.
16. Perez AD, Benseñor IM. Tobacco and alcohol use, sexual behavior and common mental disorders among military students at the Police Academy, São Paulo, Brazil. A cross-sectional study. Sao Paulo Med J. 2015;133:235-44.

Cite this article as: Rajiva, Minhas S, Basavaraj, Singh PMP, Yadav AK. Tobacco consumption patterns amongst recruits at a training centre. Int J Community Med Public Health 2022;9:171-4.