Original Article

Assessment of Tobacco Dependence among Dairy Workers, Salem, Tamil Nadu

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Abstract

Aims: This study aims to assess the tobacco dependence level among dairy workers in Salem city, Tamil Nadu, using Fagerstrom Test for Nicotine Dependence. **Settings and Design:** Dairy plant, Salem; cross-sectional study. **Subjects and Methods:** A cross-sectional study was conducted among 750 dairy workers to assess their nicotine dependence using Fagerstrom Test for Nicotine dependence. **Statistical Analysis Used:** Chi-square test and Fisher's exact test. **Results:** The prevalence of tobacco usage among dairy workers was 14%. Among the participants, a high level of nicotine dependence in smoking and smokeless form was found to be 36% and 73.6%, respectively. Age-wise distribution showed tobacco usage of smoking and smokeless form was 52.8% and 54% among 46–55 years of age ($P > 0.309$) was not statistically significant. **Conclusions:** The findings of the present study revealed that tobacco usage among dairy workers need greater motivation and quitting programs to create awareness about the ill effects of tobacco usage.

Keywords: *Dairy workers, Fagerstrom questionnaire, tobacco*

Introduction

Oral health care is a matter of continuing neglect by most people owing primarily to lack of awareness about its links with general health particularly in factory workers. Dairy factory is the area where milk is processed and packed for daily consumption, and the excess procured milk are converted into dairy products such as milk cream, butter, ghee, flavored milk, milk powder, and confectionary. Basic oral health surveys are used to collect information about the oral health status and treatment needs of a population, and subsequently, to monitor changes in levels and patterns of disease.[1]

Salem district is one of the industrial hubs of Tamil Nadu state in which dairy workers in dairy plant often go uncared due to their stressful working conditions, busy schedules, dietary habits, and poor economic conditions. Tobacco dependence increases the risk of illnesses such as cancer, respiratory tract diseases, and cardiovascular diseases.[2] Hence, this study is done to assess the dependence level of tobacco usage among dairy plant workers in Salem city which provided valuable information about the prevailing tobacco dependence and gives knowledge for oral health planning and to suggest suitable remedial measures.

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Subjects and Methods

A descriptive cross-sectional study was conducted to find out the prevalence of tobacco usage among dairy workers at Salem Dairy Plant, Salem. The study was carried out after obtaining the prior permission from the authority of the dairy plant and obtaining clearance from the Ethics Committee in the institution. Investigator collected data by interviews and observations. The study was carried out using cluster sampling method among the dairy workers. Participants of 103 among 750 participants who were having the habit of tobacco using were included in the study. Data were collected from the subject using Fagerstrom Test for Nicotine Dependence (FTND) questionnaire.[3] Data obtained were coded statically

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analyzed using Open Epi version 3.03. The level of statistically significance was kept at $P < 0.05$. Total enumeration was done to select the study participants hence considered to be the representative of the target population.

Selection bias was controlled using probability sampling technique. Participants were not exposed to any intervention as this is an observational study carried out by trained investigator under expert supervision. This study helped to assess the tobacco dependence level among dairy workers in dairy plant and for future implementation of oral health programs to provide dental services at their doorsteps. Informed consent (bilingual) obtained from the participants of the study after the patient has duly read the information sheet.

Results

The conducted study showed the prevalence rate of tobacco usage among dairy workers was overall 14% of total population. Participants with of high level of nicotine dependence in smoking and smokeless form were found to be 36% and 73.6%, respectively [Figure 1]. The high level of tobacco dependence was in male of 74.4% and 71.4% in female participants [Table 1 and Figure 2]. Among males, in the age group of more than 55 years, 85.7% were found to be high level of tobacco dependence for smoking form [Table 2]. None of the female participants was found to be a smoker among dairy workers. Smokeless form of tobacco dependence was found to be 52.8% in the age group of 46–55 years whereas 20% of smoking form of

Table 1: Smokeless form of tobacco dependence

Tobacco dependence	Gender		
	Male, *n* (%)	Female, *n* (%)	Total, *n* (%)
Very low	0	0	0
Medium	9 (23.1)	4 (28.6)	13 (24.5)
High	29 (74.4)	10 (71.4)	39 (73.6)
Very high	1 (2.6)	0	1 (1.9)
Total	39 (100.0)	14 (100.0)	53 (100.0)

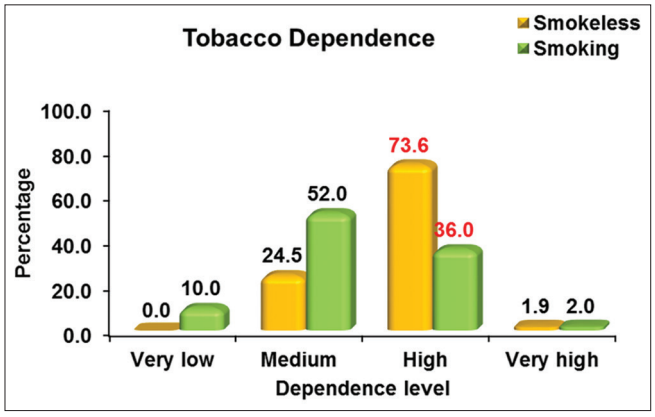

Figure 1: Distribution of tobacco dependence (both smoking and smokeless) in percentage

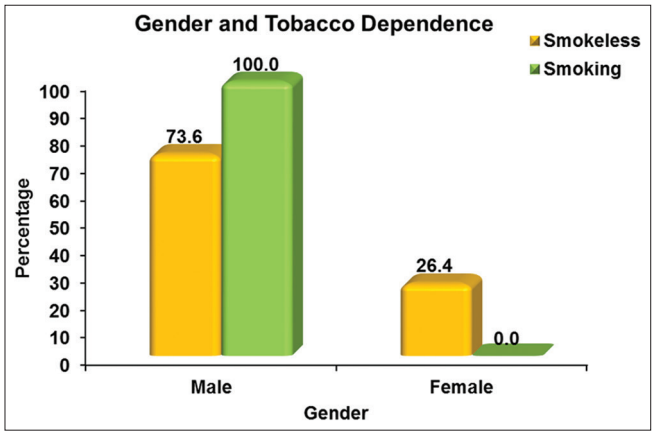

Figure 3: Gender-wise distribution of Tobacco dependence (both smoking and smokeless) in percentage

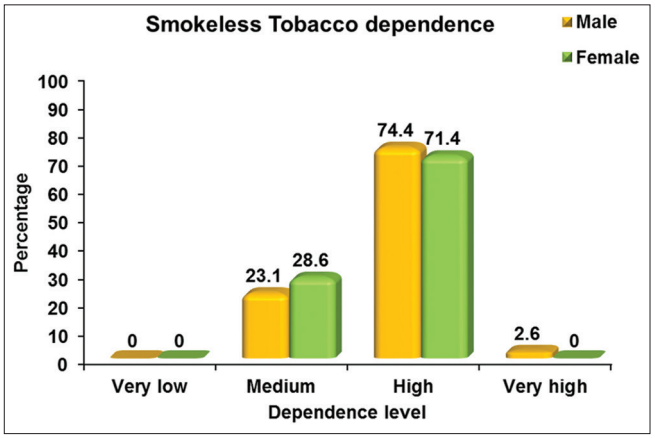

Figure 2: Gender-wise distribution of tobacco dependence level (smokeless) in percentage

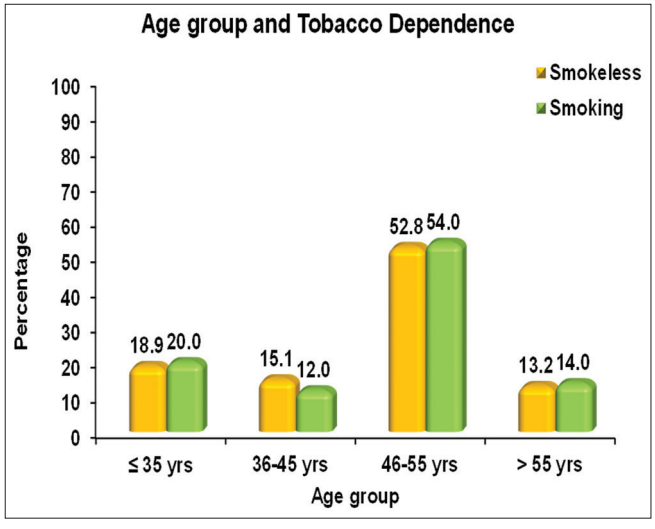

Figure 4: Age-wise distribution of Tobacco among male in percentage (both smoking and smokeless)

Table 2: Distribution of smoking form of tobacco dependence (age wise)

Tobacco dependence	Age group (year)				
	≤35, *n* (%)	36-45, *n* (%)	46-55, *n* (%)	>55, *n* (%)	Total, *n* (%)
Very low	0	0	0	0	0
Medium	5 (50.0)	3 (37.5)	4 (14.3)	1 (14.3)	13 (24.5)
High	5 (50.0)	5 (62.5)	23 (82.1)	6 (85.7)	39 (73.6)
Very high	0	0	1 (3.6)	0	1 (1.9)
Total	10 (100.0)	8 (100.0)	28 (100.0)	7 (100.0)	53 (100.0)

tobacco dependence was found to be in the age group of <35 years of participants [Table 3, Figures 3 and 4]. In our study, it was found to be 52% of medium level of tobacco dependence among male [Table 4]. High level of smokeless tobacco dependence was found to be 74.4% and 71.4% in male and female, respectively [Table 5].

Discussion

Dairy technology has been defined as that branch of dairy science which deals with milk on an industrial scale. Dairy plant has got many divisions where milk is collected, stored, processed, and converted into different dairy products. Factors more commonly held responsible for the impact of oral health diseases is less access and utilization of health-care services with lesser awareness about the oral hygiene importance among the industrial dairy workers.

The sector of dairy workers needs to be made aware of the ill-effects of their habits and approach towards the oral health as a needful one. Consequently, health-care workers must bear the greatest responsibility in the war against smoking despite high rates of tobacco usage both smoking and smokeless form among these group of people. Nicotine sustains tobacco addiction, a major cause of disability and premature death, by acting on nicotinic cholinergic receptors in the brain to trigger the release of dopamine and other neurotransmitters.[4] Administrators of dairy plant must also be informed by the public health personnel about effective programs for smoking cessation and provide continuing education programs relating to their roles as important influences in society.

The findings of nicotine dependence in the present study is compared to the study done by Leyla Saglam, Ravza Bayraktar in 2010[5] which showed 35% of smokers had very low levels of dependence and 11.9% had very high levels dependence, whereas the present study shows participants with of high level of nicotine dependence in smoking and smokeless form was found to be 36% and 73.6%, respectively. Study done by Thankappan and Thresia[6] in rural population of Thiruvananthapuram district Kerala, showed overall smoking prevalence of tobacco among men in the age group of 15 years

Table 3: Distribution of smokeless and smoking dependence of tobacco based on age and gender

	Smokeless (%)	Smoking (%)
Age group (years)		
≤35	18.9	20.0
36-45	15.1	12.0
46-55	52.8	14.0
More than 55	13.2	14.0
Gender		
Male	73.6	100.0
Female	26.4	0

Table 4: Distribution of level of tobacco dependence (smoking) among male in percentage

Level of tobacco dependence	Percentage
Very low	10.0
Medium	52.0
High	36.0
Very high	2.0

Table 5: Distribution of level of tobacco dependence (smokeless) among male in percentage

Smokeless tobacco dependence level	Male (%)	Female (%)
Very low	0	0
Medium	23.1	28.6
High	74.4	71.4
Very high	2.6	0

and above was 28% and chewing tobacco is more common among women of about 10.5%. In the present study with gender-specific FTND scores, males had higher scores than females which is also similar to the study done by Rani *et al*., 2003[7] in which comparing to the younger population (15–24 years), the older population (25+ years) had a greater likelihood of both chewing and smoking tobacco was observed. Future studies can be done to investigate the association factors for tobacco dependence such as socioeconomic status and educational attainment. Among factors considered as primary reasons for initial cigarette use are curiosity and attention. In our study, the most common reason for smoking was to reduce stress due to workload and more dependence toward tobacco habits. Smoking

exhibits time-lagged, reciprocal relationships with craving and restlessness and a one-way predictive relationship with negative affect. Temporal patterns of craving and restlessness may aid in the design of smoking cessation interventions.[8] Every individual who uses tobacco is at an increased risk for general and oral diseases including cardiovascular disease, oral cancer, and periodontitis. Dental health-care professionals have the knowledge, opportunity, and ethical responsibility to offer an appropriate, patient-centered tobacco cessation intervention as normal patient care.[9]

Conclusions

The findings of the study highlight that an agenda to improve health outcomes among dairy workers must include effective interventions to control tobacco use. Failure to do so would most likely result in increasing the burden of diseases. There is a need for periodical surveys using more consistent definitions of tobacco use and eliciting information on different types of tobacco consumed.

Public health significance of this study is working toward the mitigation of factors affecting tobacco threat at the individual level as well as at the institutionalized level should be implemented as a part of a long-term commitment to safeguard public health. Anti-tobacco initiatives are thus warranted. Further comparative studies with a larger sample size and with the addition of more number of similar institutionalized settings are recommended to focus on a broader assessment of tobacco dependence correlating it with possible associating factors.

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Nil.

Conflicts of interest

There are no conflicts of interest.

References

1. World Health Organization. Oral Health Surveys: Basic methods, 4th ed. Geneva: World Health Organization; 1997.
2. Fagerström K, Furberg H. A comparison of the Fagerström Test for Nicotine Dependence and smoking prevalence across countries. Addiction 2008;103:841-5.
3. Ebbert JO, Patten CA, Schroeder DR. The Fagerstrom Test for Nicotine Dependence-Smokeless Tobacco (FTND-ST). NIH public access. Addict Behav 2006;31:1716-21.
4. Benowitz NL. Nicotine addiction. N Engl J Med 2010;362:2295-303.
5. Saglam L, Bayraktar R, Kadioglu EE, Acemoglu H. Smoking prevalance and the degree of nicotine dependence among healthcare workers at the Ataturk university medical facility. Eurasian J Med 2010;42:74-7.
6. Thankappan KR, Thresia CU. Tobacco use & social status in Kerala. Indian J Med Res 2007;126:300-8.
7. Rani M, Bonu S, Jha P, Nguyen SN, Jamjoum L. Tobacco use in India: Prevalence and predictors of smoking and chewing in a national cross sectional household survey. Tob Control 2003;12:e4.
8. Chandra S, Scharf D, Shiffman S. Within-day temporal patterns of smoking, withdrawal symptoms, and craving. Drug Alcohol Depend 2011;117:118-25.
9. Harris NO. Primary Preventive Dentistry. 7th ed. New Jersey: Pearson; 2009.