

Social determinants in access to tobacco prevention and cessation support services among migrant construction workers in Urban Chennai, India

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ABSTRACT

Context: In spite of the high burden of tobacco consumption among migrants, disparities in the awareness of tobacco-related harms, health-seeking behaviors, and intention to switch to lower risk alternatives remain understudied area. **Aims:** Assess the social determinants in access to tobacco prevention and cessation support services among migrant construction workers in urban Chennai, India. **Settings and Designs:** A community-based, cross-sectional study design. **Materials and Methods:** A questionnaire adapted from GATS survey was used among migrants working across 13 construction sites of Chennai during May–September 2019. A counseling session was provided for the migrant workers who were willing to quit. **Statistical Analysis Used:** Data entered in MS Excel was analyzed using SPSS and multivariate analysis was performed. **Results:** Among 345 migrants, 338 (98%) were currently using tobacco and smokeless tobacco (57.4%) consumers. In spite of awareness (84.6%) about tobacco ill-effects on health, only 48% care providers enquired of the tobacco use in the previous one year. Pictorial health warnings were seen by 315 migrants (91.3%) in the past one month, but only 110 migrants (34.9%) considered quitting. The majority (341 migrants, 98.4%) have not heard of the lower risk alternatives such as nicotine gums and lozenges and only 89 migrants (26.33%) agreed to try lower risk alternatives for tobacco on trial basis. Migrant construction workers who were using tobacco less than 5 years ($P = 0.001$) were more likely to try lower risk alternatives. **Conclusions:** Reappraising social determinants in access to tobacco prevention and cessation support services to migrant construction workers may be a promising strategy to reduce health harms of tobacco intake.

Keywords: Health seeking behavior, lower risk tobacco alternatives, migrant construction workers, pictorial warnings, tobacco usage

Introduction

Tobacco is the leading preventable risk factor for major non-communicable diseases including cancers and cardiovascular diseases.^[1] India accounts for 12% of the world's smokers;

24.9% (232.4 million) adults are daily tobacco users and another 21.4% (199 million) adults use smokeless tobacco.^[2,3] Awareness creation among masses with poor education and low-income groups remains the mainstay of tobacco prevention and it is now mandated by Supreme Court of India that 85% of the tobacco packages should include pictorial health warnings.^[4]

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Internal migration from various north and north-eastern states of India to south India including Chennai is on the rise since a decade. The prevalence rates of tobacco consumption among

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migrants were identified to be higher compared to the general male population in their native states.^[2] Tobacco consumption among migrants is reportedly of silent epidemic proportions however remains a neglected area of focus in national tobacco prevention and control policies.^[5-9] Greater Chennai Corporation including Kancheepuram, Chennai, and Tiruvallur districts is destination choice for 51.3% of the migrant population in the state.^[10] Poor quality of life and unhygienic living conditions act as additional stressors to disrupted family and cultural support systems, thus amplifying the psycho-social stress of these migrants and contribute to high rates of tobacco use.^[11-14] Health seeking behavior of migrants is limited to acute trauma care and lacks in promotive and preventive health services due to the demanding work schedules and language barriers in accessing health services. Multiple studies across India cited poor awareness about health hazards involved with tobacco consumption in spite of research proving there is no safer form of tobacco including smokeless tobacco.^[15-17]

The majority of tobacco control programs are aimed at the general population through primary health care centers. Primary care aims to provide health promotion and prevention services through health education and awareness campaigns aimed at the targeted population. Awareness creation among the target groups is essential to facilitate positive attitude changes which are critical in the transition to lower risk alternatives to tobacco such as nicotine replacement therapies (NRT), behavior counseling, and medical prescription in cases of nicotine dependence. The clinical practice guideline to implement tobacco treatment model described as “5-A”s: 1A—ask patients about smoking at every visit, 2A—advise all tobacco users to quit, 3A—assess smokers’ willingness to try to quit, 4A—assist smokers’ efforts with treatment and referrals, and 5A—arrange follow-up contacts to support cessation efforts was recommended for modifications to fit in the primary health care settings in the Indian context.^[18,19] Multi-country study across eleven low and middle income countries (LMIC) including India cites lack of clear evidence about the influence of socio-economic disparities in intention to quit tobacco among consumers.^[20] Documenting the socio-economic and environmental disparities to tobacco-related health services is critical to advance corrective policy measures.

Research on the full spectrum of factors, i.e. socio-economic and environment impact in the initiation of tobacco consumption and continuation as habit, has not kept up in this vulnerable population group. As primary care service delivery approach is designed to improve access to health promotion and prevention services through universal health coverage, our study aims to provide insights to address these gaps. To our knowledge, this is the first study among migrant construction workers exploring the access to health care services related to tobacco prevention and cessation in Tamil Nadu. The objective of this study is to assess the socio-economic disparities in awareness of harms of tobacco on health, health-seeking behaviors, and willingness to try lower risk alternatives among migrant construction workers in Chennai.

Materials and Methods

This cross-sectional study was conducted to identify socio-economic factors influencing tobacco-related health services among interstate migrant construction workers in Chennai during May–September 2019. A sample size of 300 was estimated with a prevalence of tobacco use among adult males in India 42.4% (GATS-2) with 6% absolute precision and 10% non-response rate. We completed survey among 345 migrant construction workers currently working at thirteen construction sites in Chennai metropolitan city covering Old Mahabalipuram Road, Kolapakkam, Chromepet, Pallavaram, Palavanthangal, Perungudi in the range of 30 km distance from rural and urban health and training centers attached to Department of Community Medicine, Tagore Medical College and Hospital, Rathinamangalam, Chennai.

A pretested structured questionnaire was adapted from Global Adult Tobacco Survey Version 2.1—June 2014.^[21]

The questionnaire consists of the sections as listed below:

1. Socio-demographic profile: questions on age, sex, education, occupation, income, marital status, and migrant status with duration.
2. Tobacco use status in any form: questions on current and former tobacco use, form of tobacco used, frequency of use, age at which tobacco use was initiated, and how soon they were consuming tobacco after waking up.
3. Tobacco cessation: questions related to visiting health care settings in the past one year, advice to quit smoking by healthcare providers, number of attempts to quit in the past one year, methods to quit smoking, intention to quit in the future, and health care information and pictorial warnings on the tobacco packets.
4. Knowledge, attitude, and perceptions about tobacco harms: questions related to the health effects of tobacco use.
5. Awareness about lower risk alternatives to current tobacco products, and willingness to try lower risk alternatives if provided on a trial basis.

Data collection method

Required permissions from the Institution Ethics Committee (IEC) of Tagore Medical College Hospital, Chennai and construction site were obtained (27.09.2019). Trained researchers speaking in Hindi language including principal investigator and trained interns from the Department of Community Medicine, Tagore Medical College Hospital, Chennai conducted personal interviews after obtaining informed verbal consent from the migrants.

Translation was required for few migrants (Orissa and Bengal states) who were unable to understand Hindi language and co-workers fluent in Hindi and other regional languages aided in this.

After the interviews, a group health education session was conducted on the survey day at the construction site on the harmful effects of tobacco and migrants were actively encouraged to quit the usage of tobacco.

Statistical analysis

The data collected was entered in Standard Microsoft Excel 2007 and statistical analysis was conducted using SPSS computer package version 21.0 (SPSS Inc., IL, USA). The descriptive statistics were measured and differences between socio-economic variables and tobacco consumption were assessed by Chi-Square test and a significance level of $P < 0.05$ was set.

Results

Demographic profile and patterns of tobacco consumption

About 345 male, interstate migrants to Chennai from native rural parts of northern (Orissa, Bihar, Jharkhand, and Bengal) and north-eastern states (Assam) of India were surveyed. Mean age of the subjects was 28.42 ± 8.7 years, 175 (50.7%) were illiterate with no formal schooling, and 228 (66.1%) earn a monthly income less than 10000 Indian rupees, and another 33.6% earned incomes in the ranges of 10000–20000 Indian rupees. The majority of migrants 224 (64.9%) were married, 114 (33.1%) were unmarried, and a significantly high number 148 (42.9%) of migrants in this study population migrated to Chennai under less than one year.

Migrants currently using tobacco were 338 (98%); 198 (58.6%) used smokeless forms of tobacco, 98 (29%) were smokers, and 42 (12.4%) were dual users, i.e. both cigarettes and beedis. Khaini (57%) is the dominant form of tobacco used among migrant construction workers. The mean age of initiation of tobacco use was 21.58 years and 21.17, and 22.73, and 19.5 years for smoking, SLT, and dual users, respectively. The majority of the study population 197 (57.1%) were smoking tobacco in the range of 1 to 5 years, mean duration for smokers, smokeless tobacco, and dual users is 7.06, 6.04, and 6.13 years, respectively.

Awareness about ill-effects of tobacco and lower risk alternatives

The majority 292 (84.6%) of migrants were aware that tobacco causes ill-effects on health. However, 24 (7.0%) said that tobacco does not cause any harm to health and 28 (8.1%) were unaware of its harmful effects. About 318 (92.1%), 304 (88.1%), 221 (64.05%), 84 (24.35%), and 228 (66.08%) migrants were unaware that using tobacco causes stroke, heart attack, and cancers of esophageal, lung, and oral cavity, respectively [Figure 1].

Health seeking behavior and attempts to quit and attitudes to quitting tobacco use

Only 93 (27.5%) migrants using tobacco have visited a doctor in the previous one year of whom 45 (48.39%) were enquired about their history of tobacco consumption and were advised to quit tobacco. In addition, 85 (25.14%) have tried to quit tobacco usage earlier of whom 5 (1.5%) have tried to quit for years, 20 (6%) have tried quitting for months, and 13 (3.8%) for about weeks. However, 169 (50%) of migrants mentioned that they are not ready to quit tobacco use. Around 34 (10.05%) and 42 (12.42%)

have admitted that they would quit within the next one month and twelve months, respectively. 53 people (15.69%) have little hope that they would quit tobacco someday [Figure 2].

Tobacco cessation efforts among the study population

Among migrants, six (7.05%) members have tried to quit tobacco usage by attending counseling in a clinic, obtaining a medical prescription, using nicotine replacement therapies such as nicotine gums and by chocolates/mints/bubble gums (1.17%) each.

Notice of health warnings/pictorial health warning labels

During the previous month, the majority of migrants noticed health warnings about tobacco in magazines (258, 74.8%), in television (245, 71%), and in social media-WhatsApp messages (158, 45.8%) and few of them (49, 14.2%) have noticed it on the large billboards. Migrant tobacco users 315 (91.3%) had noticed the pictorial warning labels (PWL) on the tobacco packets; however, only 110 (31.9%) migrants considered quitting of tobacco due to these labels. The majority of ever tobacco using migrants (341, 98.4%) have not heard of the lower risk alternatives to the current tobacco products such as nicotine gums and lozenges available in the pharmacies. Only 89 (26.33%) migrants have agreed to try lower risk alternatives (nicotine gums and lozenges) for tobacco on trial basis, 129 (38.16%) refused to try, and 109 (32.24%) have no opinion about trying the alternatives [Figure 3].

Multivariate analysis was performed to assess the association of socio-demographic variables and intention to quit tobacco use with the cut off value of $P < 0.05$. The migrant construction workers who are married ($P = 0.000$) are more likely to remain non-quitters and non-daily users of tobacco ($P = 0.001$) more likely to have the intention to quit [Table 1].

The migrant construction workers consuming tobacco less than 5 years ($P = 0.001$) were more likely to try lower risk alternatives [Table 2].

Discussion

The current study describes the socio-economic disparities in access to tobacco prevention and cessation services including awareness on the health risk of tobacco use and lower risk alternatives, and health-seeking behavior for cessation among 345 migrant construction site workers in Chennai. The high prevalence of current tobacco use (98%) among migrant construction site workers is twice than national averages 29.6% for SLT among adult men as reported in global adult tobacco survey-2 and similar to higher rates reported among migrants across India.^[5-9,16,22] Smokeless tobacco use among migrants in this study (198, 58.6%) is higher than the prevalence of SLT and smoking in the states of Assam (41.7%/13.3%), Bihar (23.5%/5.1%), West Bengal (20.1%/16.7%), Orissa (42.9%/7%), and Jharkhand (35.4%/11.1%) and is of

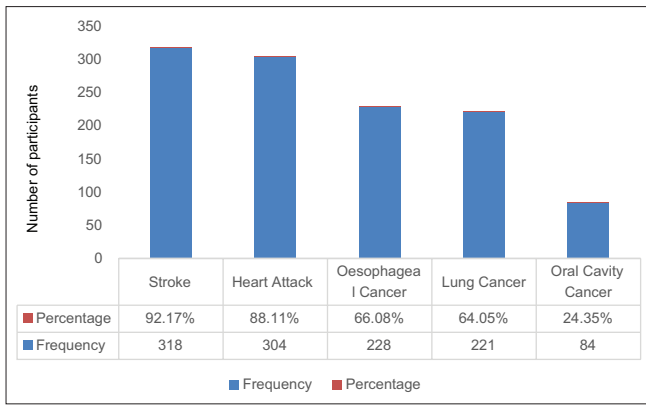


Figure 1: Lack of awareness about health effects of tobacco use among migrants (n = 345)

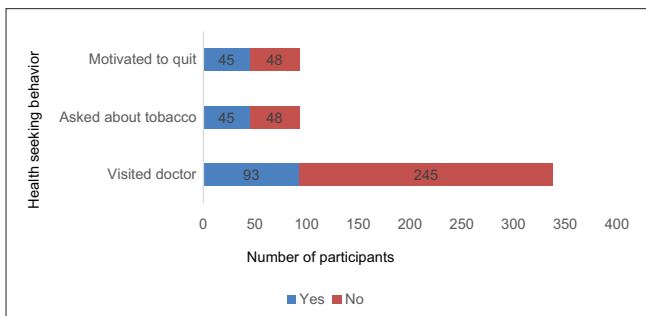


Figure 2: Health seeking behavior of the current tobacco users in the past one year (n = 338)

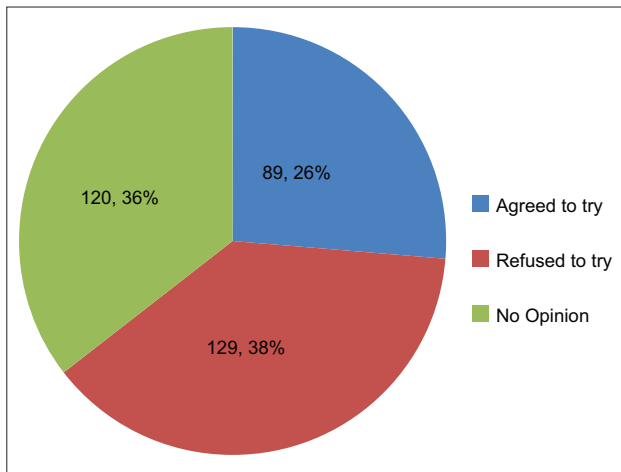


Figure 3: Willingness to try lower risk alternatives for tobacco among current tobacco using migrants (n = 338)

great concern from public health outcomes related to tobacco use such as cancer and cardiovascular disease.^[2] This could be due to easy availability of a wide range of low-cost, regional SLT products across states, which have an established toxicity profile containing 69 major carcinogens listed in IARC.^[17,23-25]

Awareness about ill-effects of tobacco on health

High level of awareness (84.6%) was prevalent about ill-effects to tobacco on health of the migrant tobacco users but poor

awareness about oral health issues such as pre-cancerous condition such as oral sub-mucous fibrosis, especially among SLT users, and cardiovascular morbidities in concordance to other Indian studies.^[19,26-28] Indian government and its states have imposed a permanent ban on sale, manufacture, production, and consumption of SLT forms such as khaini, ghutkha, etc., Studies identified surrogate advertising, aggressive marketing, low pricing strategies, and misleading information combined with poor government surveillance as the main factors for increased SLT use and poor awareness among low socioeconomic groups in India.^[29-31]

Health seeking behavior

Low rates of health visits (27%) to the doctor in the previous year were reported by the migrants and of whom, 48.4% were enquired about their history of tobacco consumption and advised to quit comparable to GATS-2 survey findings and other studies.^[2,32-36] Poor health-seeking behavior may be due to lack of awareness about harms of SLT use as its use is cited to relieve boredom, peer influence and is culturally acceptable norm and non-stigmatising compared to smoking tobacco.^[32]

In the context of a high burden of tobacco consumption among migrants, the involvement of primary health care providers by sensitizing them about the tobacco trends among low socioeconomic groups is essential. Initiating tobacco cessation support services including behavioral counseling, pharmacotherapies, follow-up care, and community-based care models by care providers is linked to lack of training and undermines the potential of controlling tobacco epidemic and, thus, calls for medical education reforms and revisions to guidelines such as 5 A's and assessing provider adherence to behavioral health programs through patient surveys.^[19,32] As it was identified that migrants are poorly covered in health care delivery system, it is a moral duty to sensitize the care providers not to miss the opportunity to deliver comprehensive tobacco-related services to migrants seeking care for any health-related issues.^[37]

Noticed health warning labels

Migrants (91.3%) noticed health warnings about tobacco similar to the survey findings from GATS-2 (71.6% for SLT and 78.4% for Bidi, 83% for cigarette consumers). Supreme Court of India mandated pictorial warnings about tobacco harms to occupy 85% of packaging space and Asian studies concluded PWLs stimulate smoking cessation among current smokers and deter initiation by non-smokers.^[38,39] However, studies also identified the inadequate impact of these warnings on the public due to poor understanding of the message from pictorial warnings and, thus, remain ineffective.^[40,41] Among migrant construction site workers in Chennai despite having a greater awareness of pictorial warning labels tobacco use remains alarmingly high which requires the strict implementation of the guidelines with improved picture quality through effective monitoring by concerned authorities.

Table 1: Association of sociodemographic variables and intention to quit tobacco use

Variable	No intention to quit	Intention to quit	Chi square	P	Odds ratio	Lower Limit	Upper Limit
Age group							
Less than 30 years	168 (66.4%)	63 (74.1%)	1.75	0.225	1.449	0.835	2.514
More than 30 years	85 (33.6%)	22 (25.9%)					
Total	253 (100%)	85 (100%)					
Literacy							
Literate	119 (47.0%)	47 (55.3%)	1.736	0.211	1.393	0.850	2.282
Illiterate	134 (53.0%)	38 (44.7%)					
Total	253 (100%)	85 (100%)					
Income group							
Less than 10000 rupees	167 (66.0%)	57 (67.1%)	0.031	0.895	1.048	0.622	1.766
More than 10000 rupees	86 (34.0%)	28 (32.9%)					
Total	253 (100%)	85 (100%)					
*Marital status							
Single	69 (27.3%)	50 (58.8%)	27.764	0.000	3.810	2.281	6.363
Married	184 (72.7%)	35 (41.2%)					
Total	253 (100%)	85 (100%)					
Duration of migration							
Less than 5 years	101 (39.9%)	42 (49.4%)	2.348	0.130	1.470	0.897	2.409
More than 5 years	152 (60.1%)	43 (50.6%)					
Total	253 (100%)	85 (100%)					
*Daily users							
Yes	29 (11.5%)	23 (27.1%)	11.889	0.001	2.865	1.549	5.302
No	224 (88.5%)	62 (72.9%)					
Total	253 (100%)	85 (100%)					
Years of consumption							
Less than 5 years	160 (63.2%)	50 (58.8%)	0.528	0.519	0.830	0.503	1.372
More than 5 years	93 (36.8%)	35 (41.2%)					
Total	253 (100%)	85 (100%)					

Table 2: Association of sociodemographic variables and willingness to try lower risk alternatives

Variable	Willing to try	Not willing to try	Chi square	P	Odds ratio	Lower Limit	Upper Limit
Age group							
Less than 30 years	63 (70.8%)	168 (67.5%)	0.333	0.598	1.168	0.689	1.981
More than 30 years	26 (29.2%)	81 (32.5%)					
Total	89 (100%)	249 (100%)					
Literacy							
Literate	44 (49.4%)	122 (49.0%)	0.005	1.000	1.018	0.627	1.652
Illiterate	55 (50.6%)	127 (51.0%)					
Total	89 (100%)	249 (100%)					
Income group							
Less than 10000 rupees	60 (67.4%)	164 (65.9%)	0.71	0.896	1.072	0.641	1.794
More than 10000 rupees	29 (32.6%)	85 (34.1%)					
Total	89 (100%)	249 (100%)					
Marital status							
Single	30 (33.7%)	89 (35.7%)	0.119	0.796	0.914	0.549	1.523
Married	59 (66.3%)	160 (64.3%)					
Total	89 (100%)	249 (100%)					
Duration of migration							
Less than 5 years	41 (46.1%)	102 (41.0%)	0.700	0.454	1.231	0.756	2.004
More than 5 years	48 (53.9%)	147 (59.0%)					
Total	89 (100%)	249 (100%)					
*Daily users							
Yes	8 (9.0%)	44 (17.7%)	3.796	0.060	0.460	0.208	1.020
No	81 (91.0%)	205 (82.3%)					
Total	89 (100%)	249 (100%)					
*Years of consumption							
Less than 5 years	69 (77.5%)	141 (56.6%)	12.174	0.001	2.643	1.514	4.614
More than 5 years	20 (22.5%)	108 (43.4%)					
Total	89 (100%)	249 (100%)					

Quit attempts

A quarter (24.6%) of migrants have tried to quit tobacco usage in the past; however, 169 (49%) expressed that they are not ready to quit tobacco use comparable to migrants in Kerala (88.83% never tried quitting and 58.09% were not willing to quit tobacco).^[6] Only 24.6% migrant construction site workers expressed an intention to quit in a year compared to 73% (56.5% smokers and 81% SLT users) in Delhi and 46% in Mysore.^[42,43]

In GATS-2 survey, overall quit attempts were 38.5%, 39.8% (ages 15–24 years) and 38.4% (ages 25 and above years) which are for general population but our findings reflect the quit attempts and intentions among migrant workers who have different predictors for this low rates of intention to quit such as migrant state which removes them from familiar support systems of family, nativity, and increases the emotional and mental stress experiences.^[44] We also found that in our study, migrants are initiating tobacco use after arriving in the city in search of jobs. Depression and poor quality of life are associated with higher odds of initiation of smoking and with negative relationship between smoking and quality of life.^[8,45]

In this study, married migrant construction workers are more likely to become non-quitters ($P = 0.000$) and those who are not daily users of tobacco ($P = 0.001$) more likely to have quitting behaviors. The majority of the tobacco using migrants in Parashar *et al.* study intending to quit were literate (75.0%), started tobacco use >15 years of age (75.4%), occasional tobacco users (78.9%), and less dependent on nicotine (74.4%).^[42] In West Bengal, Islam *et al.* identified age above 40 years, illiteracy, initiation of tobacco use between 11 and 15 years of age, daily tobacco users, duration of use above 20 years, and high self-reported nicotine dependency as characteristics associated with no intention of quitting tobacco and SLT users were associated with an odds ratio (OR) of 2.05 for “setting a quit date” when compared to smokers.^[26] Panda *et al.* in a study among patients attending public health facilities in Andhra Pradesh report 12% of patients intended to quit tobacco within 30 days and only about 11% of them were ready to set a quit date.^[19]

A minimal number of migrants were using nicotine gums and counseling as tobacco cessation aids which reveals the lack of awareness, accessibility, and affordability to tobacco cessation support services to this study population. In this study migrants who use tobacco less than 5 years ($P = 0.001$) were more likely to try lower risk alternatives. In a study done in rural Tamil Nadu, participants demanded supply-side interventions like a ban on tobacco and some participants believed that tobacco addiction can only be overcome through medication.^[27] Thus, this high rates of disinterest in quitting tobacco can be attributed to the above socio-economic and environmental factors and, thus, emphasis should be made on designing tobacco policies which address these factors among vulnerable population groups such as migrants.

Conclusions

The findings highlight inequities including rural nativity, poor education, and poor health awareness on risks of smokeless tobacco in specific in access to tobacco prevention and cessation support services among migrant construction workers in Chennai. Increasing awareness about health risks of smokeless tobacco use, access to behavioral change counseling, availability of nicotine replacement therapies such as nicotine gums and lozenges at an affordable cost in the public sector hospitals and private pharmacies are urgently needed to cater to their unique needs for tobacco cessation.

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Conflicts of interest

There are no conflicts of interest.

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