

## Original Research Article

# A study on prevalence and pattern of tobacco uses and nicotine dependence among migrant labourers working in Pathanamthitta, Kerala

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### ABSTRACT

**Background:** According to domestic labour migrant report about 2.35 lakh migrant workers continue to arrive every year to Kerala and they are comparatively neglected group in the society and high level of smoking and other modes of tobacco consumption is seen in this population on general observation. Tobacco use is the leading cause of preventable death in the world and linked to 90% of oral cancer in South East Asia and cigarette smokers are 8.6 times higher risk for lung cancer than non-smokers. These are attributed to nicotine and several harmful carcinogens in tobacco products. Objectives were to study the prevalence and pattern of tobacco use among migrant labourers and to assess the associated risk factors among the study participants.

**Methods:** A cross sectional study was done in a district, Pathanamthitta, Kerala among migrant labourers over a period of 2 months using WHO steps questionnaire for tobacco consumption and Fagerstrom test for nicotine dependence.

**Results:** Majority of study participants belonged to age group of less than 25 years. 20.8% of the participants smoked nicotine products but only 1 participant had high dependence. The 75% of participants consumed smokeless tobacco products with 37% of those participants showing high dependence to the products.

**Conclusions:** A field-based study will give an in depth understanding of problems of migrant population including their environment. It will also help in application of health planning and health education at community level.

**Keywords:** Migrant worker, Tobacco, Addiction

### INTRODUCTION

The term migrant applies to persons and family members, moving to another country or region to better their material or social conditions and improve prospects for themselves or their family.<sup>6</sup> According to Census 2011 by government of India, 37% of Indian population is migrant with work and marriage being the most common cause of migration for men and women respectively.<sup>1</sup> Majority of the workers arrive from West Bengal, Assam and Orissa. (Gulati institute of finance and taxation). Among the total migrants, 60% are in the construction sector, 3% in the agriculture sector, 7% in hospitality, and 8 percent in manufacturing. Ninety percent of the total migrants are men, between the age group of 18 and 36 the high

minimum wages with comparatively better living conditions in Kerala even in the villages are often the motivating factors for migrant workers from other states as the wages are often double or even three times of the wages obtained in other major cities in India. However, Kerala-workers are paid even higher amounts and so, most of the times the local residents prefer the migrant workers because of the comparatively cheaper labour.<sup>7</sup> and this group is highly neglected and high level of smoking and other modes of tobacco consumption is seen in these population on general observation and risk is also strongly related to the number of cigarettes smoked, age of starting of smoking, smoking habit, content of the cigarette etc. Hence study related to pattern of cigarette smoking and

early detection and advice against these habits help in overall improvement in health of the population.

### ***Aim and objectives***

The aim and objectives of the study were to study the prevalence and pattern of tobacco use among migrant labourers from other states in a district Pathanamthitta, Kerala, to assess the associated risk factors among the study participants and to provide health education on the ill effects of consumption of tobacco product.

## **METHODS**

The study design used was cross sectional study. The study conducted over a period of 2 months from September-October 2018. The study population were migrant labourers working in Pathanamthitta district, Kerala.

### ***Study area***

Field practice area of our Zion medical college, Pathanamthitta.

### ***Inclusion criteria***

The inclusion criteria included labourers of 18 years and above working at least for a period of 1 month.

### ***Exclusion criteria***

Subjects who are not giving consent and workers who are mentally challenged were excluded from the study.

### ***Sample size***

The 250 (based on 28.6% prevalence as per GATS India survey 2016 and absolute precision of 20% of p).

### ***Sampling method***

The method used was convenient sampling.

### ***Study tools***

Pretested structured questionnaire for general information, WHO STEPS questionnaire for tobacco consumption.<sup>5</sup> Fagerstrom test for nicotine dependence.<sup>4</sup> Fagerstrom test for nicotine dependence for smokeless tobacco.

### ***Study procedure***

After getting permission from the concerned authorities and personnel, questionnaire was tested with 5 participants matching the inclusion criteria. The questionnaire was modified as per requirement and study was conducted using the study instruments following which health education was given to the study participants regarding the

ill effects of nicotine consumption and was encouraged to quit or reduce tobacco consumption

### ***Study analysis***

Data were entered using MS excel and IBM-SPSS software. Frequency, percentages, measures of central tendency and chi-square test was used. Nicotine dependence was assessed as per criteria.

### ***Ethical consideration***

Ethical clearance for the study given by the institutional ethical committee.

## **RESULTS**

Out of 216 study participants majority were among the age group of below 25 years (63.9%) followed by 26-30 years (13.9%). The maximum age of the migrant labourers was 58 years and minimum age of 17 years. The mean age of study participants was 26.53 years. When education was assessed, it was noted that 38.9% of the participants had education up to high school or above, followed by middle school (20.8%) and primary school (15.3%). Illiterate constituted for 25% of study participants (Table 1). The average years of migration of the study participants was 24.1 months with 55.6% of the participants had been migrating for work for less than 1 year. Majority of the study participants belonged to below poverty line and had an average monthly income of Rs.12,680 and sent 3/4<sup>th</sup> fraction of their income home on a monthly basis (48.6%). Majority of participants belonged to joint family (61.1%) and stayed here with other migrant labourers with average of 7.96 members staying in a single room (Table 1).

Among 236 study participants 36.1% gave history of current smoking among whom 46.2%, 42.3% and 11.5% gave history of smoking cigarette, bidi and both respectively. 46.2% gave history of smoking on a daily basis. Regarding attempt to quit smoking it was noted that 11.5% participants had attempted to quit smoking in the last 12 months (Table 2). When asked about others smoking in their room or in a closed workplace it was noted that 12.5% of participants gave history of passive smoking in their room and 20.8% of participants gave history of others smoking in a closed workplace where they work. Among the study subjects only 1.3% had high nicotine dependence for cigarettes (Table 3).

The 162 (75%) of the study participants were smokeless tobacco users, 61.1% consumed paan (Table 4). Among the participants 37 % had score of 5 or more which is suggestive of high nicotine dependence for smokeless tobacco and rest 160 (63%) had more of 4 or less which accounts moderate to less dependence to smokeless nicotine substances. (Table 5). Overall high nicotine dependence of smokeless tobacco was 27.8% among all study participants.

**Table 1: Table of socio-demographic profile of study participants.**

Characteristics	Frequency	%
<b>Age (Years)</b>		
Less than 25	138	63.9
26-30	30	13.9
31-35	18	8.3
6-40	18	8.3
More than 40	12	5.6
<b>Education</b>		
No formal education	54	25
Primary school	33	15.3
Middle school	45	20.8
High school and above	84	38.9
<b>Place of origin</b>		
Bihar	114	52.8
Chhattisgarh	33	15.3
West Bengal	69	31.9
<b>Type of family</b>		
Nuclear	78	36.1
Joint	132	61.1
Generation	6	2.8
<b>Marital status</b>		
Married	120	55.6
Unmarried	96	44.4
<b>Duration of stay (months)</b>		
Up to 12 months	129	59.7
123-24 months	9	4.2
25-36 months	24	11.1
Above 36 months	54	25
<b>Number of people per room</b>		
Less than 3	0	0
3-6	123	56.9
6-9	51	23.6
>9	42	19.5
<b>Income (Rs.)</b>		
5000-10,000	90	41.7
10,001-15,000	75	34.7
>15,000	51	23.6

**Table 2: Table of behavioral measurements of smoking as per WHO steps questionnaire.**

Characteristics	Frequency	%
<b>Do you currently smoke any tobacco products?</b>		
Yes	78	36.1
No	138	63.9
<b>Which among the following do you smoke?</b>		
Cigarette	39	46.2
Bidi	33	42.3
Both	9	11.5
<b>Do you smoke any tobacco products daily?</b>		
Yes	36	46.2
No	42	53.8
<b>In the last 12 months, have you ever tried to stop smoking?</b>		
Yes	9	11.5
No	69	88.5

**Table 3: Distribution of study participants according to Fagerstrom test for nicotine dependence: cigarette.**

Characteristics	Score	Frequency (%)
<b>How soon after you wake up do you smoke your first cigarette (min)</b>		
After 60	0	69 (88.5)
31-60	1	0 (0)
6-30	2	6 (7.7)
Within 5	3	3 (3.8)
<b>Do you find it difficult to refrain from smoking in places where it is forbidden?</b>		
No	0	69 (88.5)
Yes	1	9 (11.5)
<b>Which cigarette would you hate to give up?</b>		
The first in the morning	1	60 (76.9)
Any other	0	18 (23.1)
<b>How many cigarettes per day do you smoke?</b>		
10 or less	0	78 (100)
11 to 20	1	0 (0)
21 to 30	2	0 (0)
31 or more	3	0 (0)
<b>Do you smoke more frequently during the first hours after awakening than the rest of the day?</b>		
No	0	69 (88.5)
Yes	1	9 (11.5)
<b>Do you smoke even if you are so ill that you are in bed most of the day?</b>		
No	0	72 (92.3)
Yes	1	6 (7.7)

**Table 4: Table of consumption of smokeless tobacco users among study participants.**

Smokeless tobacco product	Frequency	%
Paan masala	96	44.4
Paan	132	61.1
Gutka	90	41.7
Khaini	99	45.8
Snuff	6	2.8

**Table 5: Fagerstrom test for nicotine dependence: smokeless tobacco.**

Score	Inference	Frequency (%)
<b>5 or more</b>	Significant dependence	60 (37)
<b>Less than 5</b>	Moderate to low dependence	102 (63)

The 90.9% of participants from Chhattisgarh and 81.6% of participants from Bihar had nicotine dependence to smokeless tobacco compared to only 56.5% of participants from West Bengal which was found to be statistically significant ( $p=0.000$ ). Also, it was noted that 60% of participants from Chhattisgarh who consumed smokeless tobacco products had high nicotine dependence, where as

in Bihar it was 41.9% and in West Bengal it was only 7.6% which was statistically significant ( $p=0.000$ ) (Table 6).

**Table 6: Table of association between place of origin and smokeless tobacco dependence.**

Consumption of smokeless tobacco products	Bihar	CG <sup>s</sup>	W.B.	P
Yes	93	30	39	
No	21	3	30	0.0001*
<b>Total</b>	<b>114</b>	<b>33</b>	<b>69</b>	

Chi square value=19.651, df (2),  $p=0.0001^*$  statistically significant. <sup>s</sup>CG-Chhattisgarh.

## DISCUSSION

The present study was conducted among migrants working as manual labourers in Pathanamthitta district of Kerala. Majority of study participants belong to less than 25 years and around 59.7% of participants had been here for less than 12 months. hence there is a high influx of young migrants at a contact basis to Kerala. This was in line with the report by Gulati institute which estimates an influx of 2.5 lakhs new migrant per year.<sup>2</sup>

Also, it was noted that there is overcrowding in this population with none of the participants staying in the room alone or with 1 partner. 43.1% of participants stayed in room with 5 or more roommates. This can also be a cause for passive smoking. The main reason for shifting to Kerala was high salary here compared hometown with 58.35 of participants getting a monthly income of 10000 or more .But the participants also said that there is reduced income at present due to flood. This was similar to views expressed by Saikia et al.<sup>8</sup> In our study out of the total study subjects 36.1% gave history of current smoking among whom 46.2% gave history of smoking Cigarette. This finding was higher than a study done in China where prevalence was only 28.<sup>9</sup> In a study done by Laad et al they found out that the prevalence of tobacco users was found to be 63.8%.<sup>10</sup> A study done by Akram et al in Mangalore among industrial workers they found the prevalence of tobacco use as 53.7%.<sup>11</sup> In study prevalence of smoking was higher may be due lack of knowledge, poor housing and ignorance. In a study done by Amritha et al they also reported low socioeconomic living condition, working pattern, absence of any recreational activity, and peer pressure force as the causes for higher prevalence and making them to indulge in various abuse activities.<sup>14</sup> Another study done by Garg et al about smoking prevalence among residents of resettlement colony in Delhi showed that the prevalence of smoking is higher among the illiterate population.<sup>13</sup> In our study 33.3% of participants had history of passive smoking. As per Fagerstrom nicotine test only 1 participant had high nicotine dependence for cigarette. In our study nicotine dependence was found among only one participant but in a study done by Parashar et al they found out 18% of

workers have a high level of nicotine dependence and 33% have a moderate level of nicotine dependence.<sup>12</sup> In another study done by Akram et al among industrial workers they found that 9.7% had a high level of nicotine dependence and 2.23% had moderate level of nicotine dependence.<sup>11</sup>

When it comes to smokeless tobacco 75% of participants consumed smokeless tobacco with 96 participants consuming multiple tobacco products. Also, 37% of the participants consuming smokeless products had high dependence and rest 63% had moderate to low dependence. In a study done by Parashar et al they also found out that consumption of smokeless tobacco was significantly associated with nicotine dependence and they pointed out that reasons could be due to the easy availability of smokeless tobacco and the fact that its consumption is not banned at public places.

The present study had limitation of non-inclusive North East population which was not available during study period.

## CONCLUSION

The present study showed low dependence to smoking in the study population with only 1 participant showing high dependence to smoking tobacco products but there was high proportion of participants consuming. Local self-government can play an important role in controlling drug addictions by giving awareness to all the migrant workers regarding the harmful ill effects of smoking through various methods like health education and also counseling can be given to help them to quit the habit of usage of nicotine and other products.

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