Original Research Article

A Cross-Sectional Study on Practice of Smoking among Rickshaw-Pullers in Malda Town, West Bengal

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Abstract
Introduction: *Tobacco use is a major preventable cause of premature death and diseases. It is an additional financial burden and yet many sections of the society are getting attracted to this habit, especially the lower income group in whom the consequences are even worse. So through this study we want to assess the prevalence of tobacco consumption and the associated factors involve in its consumption.*
Objectives: *To assess the prevalence on practice of smoking among the rickshaw pullers in Malda town and to study socio-economic and demographic factors related to it.*
Material & Methods: *A cross sectional, descriptive study was done among rickshaw-pullers of Malda town, West Bengal, from May 2016 July 2016 with a sample size of 160. Fagerstrom Test for nicotine Dependence scale was used to assess addiction level of rickshaw-pullers. The collected data was analysed using SPSS software.*
Results: *Study finding shows that Prevalence of smoking among rickshaw-pullers was very high (80.6%). Rickshaw-pullers were mostly used tobacco (smoke) in the form of Bidi or Cigarette, followed by Khaini (50.6%) and Guthka (25.6%). Evaluation of the nicotine dependency rate showed that 35.7% of the smokers had moderate dependency.*
Conclusion: *Prevalence of smoking among rickshaw-pullers was very high. Rickshaw-pullers were mostly used tobacco in the form of Bidi or Cigarette (smoke), Khaini and Gutkha (smokeless) in comparison to other products.*
Keywords: *Rickshaw-pullers, Tobacco, Smoking, Addiction, Fagerstrom.*

Introduction

The word *rickshaw* originates from the Japanese word *jinrikisha* which means power or force (riki) and vehicle (sha) which literally means "human-powered vehicle".[1] The number of rickshaw pullers is also increasing day by day. As rickshaw pullers are from very poor families and earning is too low and much of their earnings goes towards tobacco and alcohol.

Consumption of tobacco is the most significant preventable cause of premature morbidity. It is the first cause of preventable carcinomas which are mostly prevalent in our country. Tobacco causes five million deaths annually in the world and is estimated to cause about eight million deaths by 2030. India, the second largest consumer of tobacco, surely will bear the most of them.[2]

Health apart, tobacco is a source of additional financial burden, a cause of familial disharmony and a trigger for many other conflicts. Yet many sections of the society are getting attracted to this habit, such as teenagers, womenfolk and the lower income group in whom the consequences are even worse.

Rickshaw pullers of the urban area are one such group who are at greater risk of developing adverse effects of tobacco given the fact that they are exposed various other pollutants of the roads and their obvious lack of access to quality preventive and curative care. In a study conducted in the city of Dhaka, Bangladesh, it was found that 75.9% of the rickshaw pullers were smokers; the prevalence being much higher than the general population.[3]

So, as an important public health topic, the present study was conducted among the Rickshaw-pullers of Malda town to have an idea about not only the magnitude of the population indulged in this habit, but the gravity of the study would further enlight an area where an urgent redreseal is needed.

Material and Methods

It was a community based descriptive type of study with cross-sectional design, conducted during May 2016 to July 2016 in the Malda Town, West Bengal. Objectives of the study were to assess the prevalence of practice of smoking among the rickshaw pullers and to study socio-economic and demographic factors related to it. The study populations for this study were rickshaw-Pullers of the Malda Town. Unwilling Rickshaw Pullers, who refused to give their consent to participate were excluded from the study. Sample size (N) = Z^2PQ/d^2 with a

prevalence of 75.9%,[3] 95% Confidence Interval, absolute error of 5% and adding 10% non-response rate, the sample size was calculated as 157. However, it was rounded off to 160. Convenience sampling was applied to choose 160 rickshaw-pullers from different areas of the Malda town. Fagerstrom Test for Nicotine Dependence scale[4] was used to assess addiction level of rickshaw-pullers. On the basis of Fagerstrom questionnaire test scores, we categorized the participants into three groups including: i) test scores 1-2 low dependence ii) 3-4 low to moderate dependence iii) 5-7 moderate dependence and iv) test scores 8 and above high dependence to nicotine.[5]

Data Collection

After getting permission from the Institutional ethics committee, pilot testing of the questionnaire was done among a small sub-sample of rickshaw-pullers, to check for consistency. Data collection was done at the rickshaw stands using a predesigned and pre-tested semi structured questionnaire, which was developed in local language Bengali. The study subjects were briefed about the purpose of the study and informed consent was obtained from them after assuring confidentiality and anonymity. Data was collected by face to face interview with the respondents.

Data Analysis

Collected data was checked for consistency and entered in Microsoft Excel data sheet and it was analyzed by IBM Statistical Package for Social Sciences (SPSS) version 20. It was organized and presented using the principles of descriptive statistics. All analysis was done with the test of significance (*P* value, chi-square).

Result

The present study includes 160 Rickshaw pullers, out of which 95 (59.4%) were Hindu, while 65 (40.6%) were Muslim; 40.0% of the total Rickshaw pullers belonged to the middle (34-40 years') age group, while the 16.2% belonged to

the late (50 & above) age group; 39.4% had a schooling upto primary level and 33.1% were in middle school. Only 1.3% of Rickshaw pullers had studied upto secondary and above. 100% of the Rickshaw pullers were from the Class V socioeconomic status and 66.2% of the Rickshaw pullers were in this profession for more than 10 years [Table 1].

Table 1: Distribution of Rickshaw pullers as per Socio-Demographic Characteristics

Characteristics	Frequency N=160	%
Age (in years)		
21-30	27	16.9
31-40	64	40.0
41-50	43	26.9
51 & above	26	16.2
Religion		
Hindu	95	59.4
Muslim	65	40.6
Education level		
Illiterate	23	14.4
Primary	63	39.4
Middle	53	33.1
High	19	11.9
Secondary & above	2	1.2
Socio-Economic Class as per Modified Prasad's Scale		
Class-V	160	100
Duration in this profession(Rickshaw pulling)		
10 years	54	33.8
More than 10 years	106	66.2

The overall Prevalence of Smoking was found 80.6% in our study area; 57.5% Rickshaw pullers smoked Bidi, 23.1% of them smoked both (Bidi & Cigarette) followed by Khaini (50.6%), Guthka (25.6%) and Alcohol (18.7%) [Table2].

Table-2: Habits of smoking and Addiction pattern among Rickshaw pullers

Characteristics	Frequency N=160	%
Smoking Habit		
Smoker	129	80.6
Non-smoker	31	19.4
Addiction Pattern*		
Bidi	92	57.5
Cigarette	00	00
Both(Bidi & Cigarette)	37	23.1
Khaini	81	50.6
Guthka	41	25.6
Alcohol	30	18.7

*Multiple responses

It was observed that maximum Rickshaw pullers who were smoking tobacco belonged to group who had primary level of education (32.5%) followed by middle school (27.5%), illiterate and high school i.e. 10.0% each. Only 0.6% of them had smoking habit who had education level secondary and above. The education level of Rickshaw pullers was statistically associated with smoking ($\chi2$=79.750, df=4, p value=0.001). About 50.0% of Hindu rickshaw pullers had habit of smoking compared to 30.6% of Muslim and it was found to be not significantly different ($\chi2$=1.925, df=1, p value=0.165) [Table 3].

Table-3: Distribution of Rickshaw pullers as per Socio-Demographic characteristics and smoking habits

Education level	Smoker		Non-smoker		Total	
	No.	%	No.	%	No.	%
Illiterate	16	10.0	7	4.4	23	14.4
Primary	52	32.5	11	6.9	63	39.4
Middle School	44	27.5	9	5.6	53	33.1
High School	16	10.0	3	1.9	19	11.9
Secondary & above	1	0.6	1	0.6	2	1.2
Total	**129**	**80.6**	**31**	**19.4**	**160**	**100**
Religion						
Hindu	80	50.0	15	9.4	95	59.4
Muslim	49	30.6	16	10.0	65	40.6
Total	**129**	**80.6**	**31**	**19.4**	**160**	**100**

It was observed that the maximum 37.9% of Rickshaw pullers had low to moderate dependence to Nicotine followed by 35.9% and 24.8% had moderate and low dependence to Nicotine respectively. Only 1.6% of them had high dependence to Nicotine [Table 4].

Table-4: Distribution of smokers as per Fagerstrom Test of Nicotine Dependence

Fagerstrom Nicotine Test	Frequency	%
Low Dependence	32	24.8
Low to Moderate	49	37.9
Moderate Dependence	46	35.7
High Dependence	2	1.6
Total	129	100

Discussion

Study finding indicates that the majority of the rickshaw-pullers were tobacco users. In the current study majority of the rickshaw-puller were present in the age group of 31-40 years. About 39.4% of the rickshaw-pullers had schooling upto primary school. The overall Prevalence of Smoking among rickshaw-pullers was 80.6%, which was much higher as compared to the studies conducted by *Rahman et al., Jabir et al.,* and *Kuar et al.,* showing Prevalence of Smoking 75.9%, 47% and 76.4% respectively.[3,6,7] While the prevalence of Khaini, Guthka and Alcohol were 50.6%, 25.6% and 18.7% respectively. These findings were similar to the findings conducted in the other parts of the country and south-east Asia.[3,6,7] The prevalence of Bidi, and both (Bidi & Cigarette) smokers was 57.5% and 23.1% respectively, which was higher than the study conducted by *Rahman et al* showing prevalence 15.7%, 39.2% and 20.9% respectively.[3] Whereas study done by *Kuar et al* bidi smoking was 86.8% followed by cigarette 39.5%. About 40.2% rickshaw pullers had a habit of tobacco chewing. While 35.14% were smokers and 34.12% were alcohol consumers.[7] The study done by *Rewar et al* in Jaipure city among auto rickshaw drivers shows 87.2% were using tobacco products in some of its forms. Smoke 28%, smokeless 38% and both 36%.[8] In the study conducted by *Chaudhary et al* shows that the 40.2% subjects had a habit of tobacco chewing; while 35.2% were smokers and 34.2% were alcohol consumers.[9] In another study conducted by Islam et al the prevalence of smoking was 94% among rickshaw pullers followed by 20% alcohol drinkers and 4% had no bad habits.[10]

Various methods are used to estimate the level of nicotine dependence such as the Fagerstrom tolerance questionnaire and the Fagerstrom Test of Nicotine Dependency (FTND), the tobacco dependence screener, the Wisconsin inventory of smoking dependence motives, the cigarette dependence scale and the nicotine dependence syndrome scale.[11] Among various methods mentioned above we used FTND, as it is a simple, reliable tool and easy to follow in assessing nicotine dependence.[12] In the study conducted by *HelleSoll-Johanning et al* the health problem were the commonest (39.6%) associated with nicotine dependence.[13] In spite of the growing social and legal restrictions on tobacco consumption, people are consuming tobacco in various forms.[14]

Our study has some limitations. Convenience sampling technique was applied to select the study subjects. The study was a cross-sectional and that does not infer causal relationships. Furthermore, we examined only one town of India; caution should be taken to generalize the data for other zones outside Malda town.

Conclusion

Prevalence among Rickshaw pullers of consumption of smoking was very high. Rickshaw pullers were mostly used tobacco in the form of Bidi (smoke) and Khaini (smokeless) and in comparison to other products. It also shows that they use cheap tobacco products. Many of the rickshaw pullers were not aware of the deleterious effects of smoking. Expenditure on tobacco cause a major burden for impoverished Rickshaw pullers. By monitoring tobacco use and prevention policies; protecting people from tobacco use; offering help to quit tobacco use; warning about the dangers of tobacco; enforcing bans on tobacco advertising, promotion, and sponsorship; and raising taxes on tobacco, prevalence of smoking would be controlled.

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