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A study on pattern of Tobacco use among Rickshaw pullers of district Gorakhpur, Uttar Pradesh, India

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Abstract
The present study was undertaken to determine the associated factor related to tobacco chewing and to assess the physical problems due to tobacco chewing by using descriptive survey design and sample size 181 respondents were taken from population of research area and overall prevalence of tobacco use in the present study was 90.60% among all tobacco users, 20.4% workers use only khaini, 26.5% uses only chewing gutkha, zarda and khaini, and 64.60% workers used both. The maximum number of respondent aged between 20-30 year of age for tobacco use (47.5%) while the lowest number of respondent belong from above 50 year of age group (5.5%) and 25.4% belong from the 31-40 year of age group. There was higher rate of health problem among aged people as compared to other and daily income to 200-300 Rs. i.e. 66.9% fallowed by 23.2% earn only 200Rs. Daily while 2.8% earn rupees 300 and above. Among all the respondent earning 300 and less than this replied that they were not satisfied by their daily income. As per the data 16% of respondents were suffered by general problem, 10.5% suffered from malaria, 8.3% from UTI,6.6% respondents from piles, fallowed by typhoid 6.1% and 2.8% from tuberculosis and only 45.6% of respondents have taken the treatment regarding their problem while the others i.e. 21.7% have not taken the treatment.

Keywords: descriptive survey, tobacco chewing, prevalence of tobacco

1. Introduction
WHO defines global burden of NCDs continues to be a significant public health issue and a priority of the World Health Organization (WHO).Currently, NCD's are the leading cause of death globally: in 2012, they were responsible for 38 million (68%) of the world's total of 56 million deaths among that 75% of all deaths due to non-communicable diseases, and the majority of premature deaths (82%), occur in low- and middle-income countries (WHO, 2014) [25].

Non-communicable diseases (NCDs) comprising heart diseases, diabetes, cancer, respiratory diseases, and others contributed to 63% of the 57 million global deaths in 2008 Eighty percent of all of these deaths occurred in low- and middle-income countries. These deaths are projected to rise by 15% globally between 2010 and 2020 and with the greatest increases expected to be in low- and middle-income regions (Sreevani, 2004) [44].

The illicit drug trade touches millions of lives in both developed and developing countries. It's most negative impact is concentrated amongst vulnerable and marginalized of our societies. UN estimates that some 185 million people world i.e. 3.1% of global population were consuming the drugs in late 1990's. The figure including 147 million consuming cannabis, 33 million people taking amphetamine, 7 million people using ecstasy, 13 million taking cocaine and 9 million taking heroin. Globally 0.4% death (0.2 million) and 0.8% DALY (11.2 million) are attributed to overall illicit drug (WHO, 2011) [48].

India is also one of the top exporters of raw tobacco. Tobacco is used in both smoking and smokeless forms. Smoking forms include cigarettes, *bidis*, *hukka*, pipes and *chilam* (*ganja*). Smokeless tobacco products include tobacco that is used in *pan*, *gutkha*, *zarda*, *khaini* etc. In India chewing form of tobacco (Gutkha) is most commonly used followed by Bidis. In India Bidis are the most heavily consumed smoked tobacco product. Despite their small size bidis deliver more tar and carbon mono-oxide than manufactured cigarettes because users are forced to puff harder to keep bidis lit (Harvard University, 2013) [14].

All forms of tobacco are harmful. Smoking tobacco is the major cause of lung cancer, chronic obstructive pulmonary disease (COPD), peripheral vascular disease, and various throat and mouth cancers. Tobacco smoking is a known cause of stroke, coronary heart disease, bladder cancer, aortic aneurysm, perinatal mortality, cervical cancer, and leukemia (Nair, 2014) [37].

India is undergoing an epidemiological transition with changing patterns of diseases. According to a report, NCDs accounted for a 53% of all deaths and 44% of the disability adjusted life years (DALYs) lost in the year 2005. The age standardized mortality rate for the NCDs for males and females has been reported to be 757.7 and 537.9 deaths per 100000, respectively (Kumar & Gupta 2015) [20].

It is estimated to cause nearly 10% of CVD. Risks to health from tobacco use result not only from direct consumption of tobacco, but also from exposure to second-hand smoke. Nearly six million people die from tobacco use and exposure to second hand smoke each year, accounting for 6% of all female and 12% of all male deaths in the world (Shokeen & Aeri 2015) [43].

By 2030, tobacco-related deaths are projected to increase to more than eight million deaths every year. In 2003, 34.6% of men and 3.4% of women and in 2008, 25% of men and 4% of women aged 18 years and over smoked across India respectively. Among adolescents, 12.9% of those aged 13-15 years reported being current smokers in 2000–2003, and 21.9% were past smokers. Oral smokeless tobacco is the dominant form of tobacco use in India. A major category of commercially manufactured oral smokeless tobacco in India is termed gutka. Over the past decade, the rate of growth of gutka use has overtaken that of smoking forms of tobacco, which may impact rates of smoking related CVD (Sharma, 2013) [42].The Global Adult Tobacco Survey (GATS, 2006) reported that in Uttar Pradesh current tobacco use in any form among adults is 33.9%. Average age at daily initiation of tobacco use is reported 17.6 years in adults (17.5 years in males and 17.7 years in females). Almost 62.7% of adults were exposed to second hand smoke at home and 29.1% of adults were exposed to second hand smoke at public places (GATS Report, 2006).

in Uttar Pradesh among young people in the age group of 13-15 years, indicator related to ever smoked cigarettes and early initiation of smoking is highest (>70%). In Uttar Pradesh in same age group (13-15 years) the prevalence of current cigarette smokers is estimated to be 7.9%. Nearly 43.4% young people are exposed to smoking from others at home in the past 7 days and almost 49.3% are exposed to smoke in public places in the past 7 days. Almost 65.8% students in India who currently smoke reported that they "usually" bought their tobacco paan shops was above 70% in Uttar Pradesh (GYTS report, 2009).

Jha *et al*. (2008) [18]; have estimated that around 1 million deaths a year in India will be attributable to smoking by the early 2010s.

NFHS-3 survey (2005–06); tobacco use is more prevalent among men, rural population, illiterates, poor and vulnerable section of the society.

Gupta *et al*. (2005) [13]; have estimated the tobacco-attributable mortality among Indian men and women.

2. Material and Methods

Study design taken was descriptive survey design and study area was purposively selected fallowed data collection period of 31 day.

Sample population will be Rickshaw puller, on the behalf of recent study by (Bhatia *et.al*. 2014), had reported 84% prevalence of tobacco use based on WHO formula we have derived 181 sample size at standard normal variate usually set at 1.96 which corresponds to a confidence interval of 95%

2.1 Sampling procedure

Four stage sampling was used and final selection of blocks were Khorabar, Sahajanwa, Sardarnagar, Kauriram i.e. 46,45,45,45, respondents respectively.

2.2 Tools and Technique for data collection

Per –tested interview questionnaire (have four parts i.e. Socio-demographic profile, Fooding pattern of Rickshaw pullers, factor associated to tobacco chewing, Impact of tobacco chewing on health) was used for the data collection.

Collected data were compiled and coded in SPSS software version 16.

Analysis and interpretation of data were done in diagrammatic form, tables, and tested for the significance by using statistical test.

3. Results

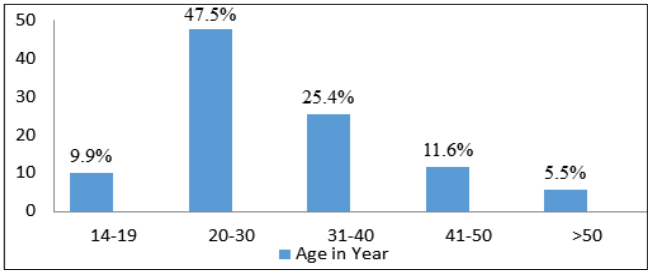

Fig 1: Age wise distribution of respondent

Figure 1 shows that the maximum number of respondents belongs to the age group of 20-30 years i.e. 47.5% and the minimum number of respondents belong to the age group of above 50 years i.e. 5.5%

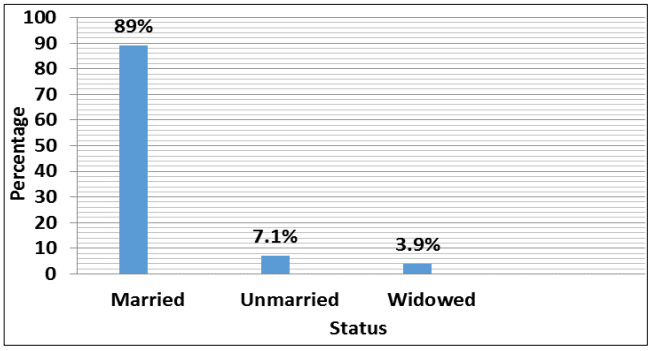

Fig 2: Marital Status wise distribution

Figure 2 shows that maximum number of respondents were married i.e. 89% followed by 7.1% and the minimum number of respondents belongs to the widowed group i.e. 3.9%

Table 1: Religion wise distribution

Religion	Frequency	Percentage
Islam	51	28.2
Hindu	127	70.2
Christian	2	1.1
Others	1	0.6
Total	181	100.0

Table 1 As per religion wise distribution the maximum number of respondents belong to the Hindu group i.e. 70.2% followed by Islam i.e. 28.2% and then the minimum number of respondents are from Christian i.e. 1.1%.

Table 2: Dependent members in family wise distribution

Dependent (Members of Family)	Frequency	Percentage
2 or less	11	6.1
3-4	22	12.2
5 ≥ 5	146	80.7
None	2	1.1
Total	181	100.0

Table 2 The maximum number of respondents are having 5 or more than 5 dependent member in family i.e. 80.7% and the minimum number of respondent are having 2 or less dependent member in family i.e. 6.1%.

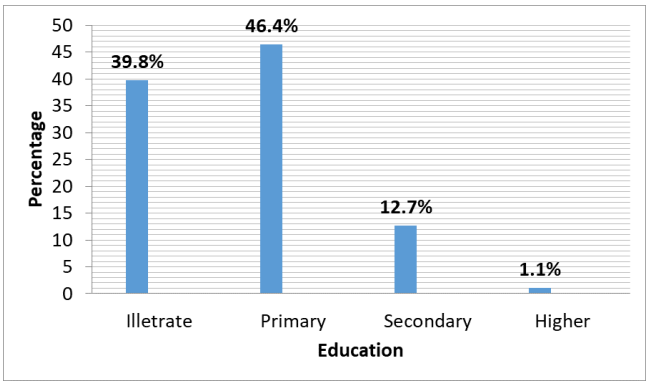

Fig 3: Education wise distribution

Figure 3 As per education wise distribution the maximum number of respondents were having their primary education only i.e. 46.4% followed by 39.8% are illiterate and minimum number approx. 1% respondents are having Higher secondary education.

Table 3: Daily Income wise distribution

Daily Income(Rs.)	Frequency	Percentage
100-150	13	7.2
150-200	42	23.2
200-300	121	66.9
300 and above	5	2.8
Total	181	100.0

Table 3 As per daily income wise distribution the maximum number of respondents are earning 200-300 Rs. Only i.e. 66.9% followed by 23.2%, earning 150-200 Rs. Only and the minimum number of respondents earning 300 and above i.e. 2.8%.

Table 4: Satisfied by monthly income wise distribution

Satisfied	Frequency	Percentage
Yes	92	50.8
no	89	49.2
Total	181	100.0

Table 4 As per Satisfied by monthly income wise distribution, 92 respondents were satisfied by their income while 89 respondents were not satisfied by their income.

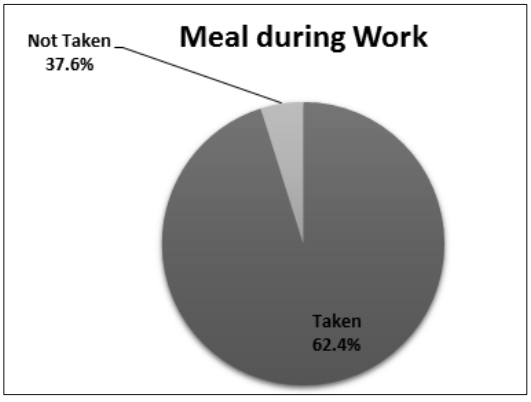

Fig 4: Meal taken during work wise distribution

Figure 4 As per taken during work wise distribution only 62.4% have taken their meal during work while the remaining i.e. 37.6% have not taken their meal during work.

4.3. Factor associated with Tobacco chewing

Table 5: History of Disease as reported by respondents (Multi Response Table)

Disease Reported	Frequency	Percentage
UTI	17	8.3
Leg Pain	9	5.0
Stone	7	3.9
Chest pain	10	2.8
Piles	12	6.7
Red Eyes(Bloody)	12	0.6
Jaundice	9	4.4
Malaria	19	9.0
Tuberculosis	10	2.8
Anemia	9	0.6
Skin problem & Restlessness	4	2.8
Cholera	9	2.2
Gastro problem	9	2.8
Typhoid	12	6.1
Prostate	17	1.1
Severe Cough	11	3.3
Hernia	12	1.7
Hydrocele	12	5.0
Not Answered	26	14.4
Other Disease (Fever, cough etc)	28	16.5

Table 5 As reported by respondents that maximum were suffering from Malaria (9%) followed by UTI (8.3%), Piles (6.7%), and Typhoid (6.1%).

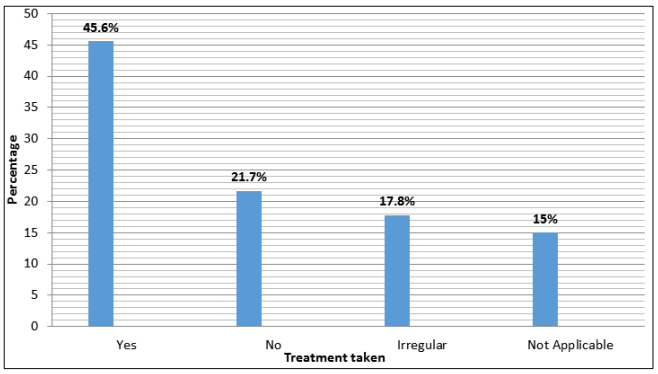

Fig 5: Treatment wise distribution

Figure 5 As per Treatment wise distribution only 45.6% of respondents have taken the treatment while the remaining respondents i.e. 21.7% have not taken the treatment and 17.8% of respondents are irregular in taking the treatment.

Table 6: Habit of Tobacco chewing

Tobacco chewing	Frequency	Percentage
Yes	164	90.6
no	17	9.4
Total	181	100.0

Table 6 As per Habit of Tobacco chewing 90.6% of respondents were taking the tobacco while remaining i.e. 9.4% only not taking the tobacco.

Table 7: Age at initiation of tobacco chewing

Initiation Age (in year)	Frequency	Percentage
13 - 15	34	18.8
16 - 19	105	58.0
20- 22	18	9.9
22 - 26	8	4.4
None(not Knowing)	16	8.8
Total	181	100.0

Table 7 As per the Age at initiation of tobacco chewing the most of respondents started using the tobacco at the age of 16-19 year i.e. 58% followed by 18.8% by the age group of 13-15 year while minimum at age group of 22-26 year age group i.e. 4.4%.

Table 8: Type of tobacco chewing (Multi Response Table)

Tobacco chewing	Frequency	Percentage
Pan	23	9.9
Gutkha	123	36.4
Zarda	72	21.3
Khaini	142	26.4
None	16	6

Table 8 As per the Type of tobacco chewing maximum number of the respondents were using tobacco in the form of Gutkha i.e. 36.4% followed by Khaini i.e. 26.4% and the minimum use of pan i.e. 9.9% by the respondents.

Table 9: Reason for tobacco use wise distribution (Multi response table)

Reason for Tobacco use	Frequency	Percentage
Don't Know	71	32.6
To Enjoy Pulling	49	20.4
Feel's Good	14	7.7
Habit	25	8.3
Feel Fresh	16	8.8
Reduce exhaust	31	11.6
Friend also Use	9	1.7
None	15	8.3
Feel Awaken	7	0.6

Table 9 as per the Reason for tobacco use most of respondents replied that they do not know i.e. 32.6% followed by 20.4% replied to enjoy pull and minimum number of respondents replied that they feel awaken i.e. 0.6% followed by friends also uses i.e. 1.7%.

Table 10

Disease Reported	Present	Absent
Bad Breath	59	41
Leukoplakia	21.5	78.5
Lock Jaw	43.1	56.9
Oral Stain	74	26
Mouth Ulcer	10.5	89.5
Burning sensation in mouth (Spices)	38.1	61.9
B.P. Problem	2.8	97.2
Diabetes	2.3	97.8
Frequent Urination	15.5	84.5
Burning sensation while urination	33.7	66.3
Weakness Feeling	49.2	50.8
Smoking Habit	73	27
Alcohol Use	51.4	48.6

Table 11: Smoking type wise distribution (Multi Response Table)

Smoking Type	Frequency	Percentage
Bidi	115	60.6
Hokka	9	3.3
Cigarette	14	6.7
Other	5	.6
None	45	25.0

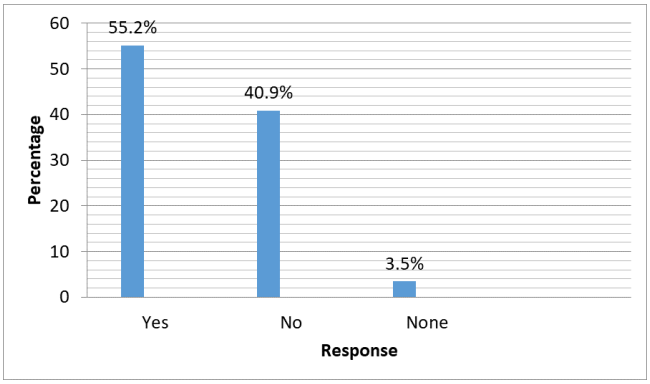

Fig 6: Quit using Tobacco wise distribution

Figure 6 as per question related to quitting the use of Tobacco 55.2% respondents were replied that they want to quit it while the remaining no. of respondents i.e. 40.9% replied that they don't want to quit the use of Tobacco.

Table 12: Reason for Quitting Tobacco use wise distribution (Multi Response Table)

Reason for Quitting	Frequency	Percentage
Health	32	12.2
Money	34	13.8
Family	21	6.1
Smells Bad	31	12.7
Social Acceptability	27	13.3
Others	6	1.7
None	73	40.3

Table 12 as per question related to reason for quitting tobacco use 13.8% respondents were replied due to money followed by social acceptability (13.3%) and minimum number of respondents replied because of family i.e. 6.1%.

4. Impact Analysis

Table 13: Association of History of disease and tobacco chewing between the respondents

Disease	Yes	No	Chi square	P value	CI
Affected	164(90.6%)	17 (9.39%)	13.38	0.272	95%

There was significant statistical association observed in between History of disease and tobacco chewing between the respondents.

Table 14: Relationship between Marital status and alcohol drink

Marital status	Yes	No	Total
Married	20	74	94
Unmarried	72	9	81
Widowed/Divorced	3	3	6
Total	95	86	181

Chi square=10.08 P value =0.236 df= 10

Significant

There was significant statistical association observed in between marital status and alcohol drink between the respondents.

Table 15: Relationship between Marital status and Smoking

Marital status	Yes	No	Total
Married	119	42	161
Unmarried	7	6	13
Widowed/Divorced	5	2	7
Total	131	50	181

Chi square=2.702 P value =0.122 df= 4

Significant

There was significant statistical association observed in between Marital status and alcohol drink between the respondents.

5. Discussion

The aim of this study was to determine associated factor related to tobacco chewing among the rickshaw puller of Gorakhpur city. The main purpose of this study is to determine the associated factor related to health and in addition to it, assess the impact of tobacco chewing on health. The overall prevalence of tobacco use in the present study was 90.60%, which is higher than that reported by earlier community-based studies of tobacco use (84%) from other parts of the country. According to the National Sample Survey Organization, the prevalence rate of tobacco use in the country (rural + urban) is 35.5% **(**NSSO 50th Round Survey).

For the purpose of this study consumption of alcohol, consumption of tobacco/smoking, age of initiation of tobacco consumption, health related problem were taken as dependent variable while age, educational status, daily income, marital status, family member, dependent/independent member in family were taken as independent variable.

In current study, the prevalence of tobacco chewing and smoking were 90.60% and 72.92%, respectively. Amongst all tobacco users, 20.4% workers were only use khaini, 26.5% used only chewing gutkha, zarda and khaini, and 64.60% workers used both. The expenditure on tobacco is very high. Money spent on tobacco means that there is less to be spent on basic human needs such as food, shelter, education, and health care. Tobacco can also worsen poverty among users and their families since tobacco users are at much higher risk of falling ill and dying prematurely of cancers, heart attacks, respiratory diseases, or other such tobacco-related diseases, imposing additional costs for health care and depriving families of much-needed income. The WHO says that in many societies the poorest people tend to smoke the most and bear the greatest health and economic burdens [U.N. Health Agency Reports (2004)] [45].

From the study it was found that maximum number of respondent aged between 20-30 year of age (47.5%) while the lowest number of respondent belong from above 50 year of age group(5.5%) and 25.4% belong from the 31-40 year of age group. There was higher rate of health problem among aged people as compared to other.

Increasing age was significantly associated with health problem this might be due to increase in the tobacco consumption as compared to another via the duration and also may be due to physiological and anatomical change in older age.

According to the marital status wise distribution it was found that 89% of respondents were married and only 7.1% were unmarried fallowed by 3.9% of respondents were either widowed or divorced.

Locality wise distribution shows that majority of respondents were from own district (38.7%) fallowed by neighbor district (28.2%), Distance district (16.6%) and different state (16.6%).

Regarding religion wise distribution the maximum number of respondents are from Hindu (70.2%) fallowed by Muslim (28.2%), and (0.6%) from Christian.

Family wise distribution the maximum number of respondents were from nuclear family (69.1%) and (30.1%) are from joint family, the average number of family member are too much high and 80.7% of respondent were having more than 5 dependent member only 6.1% of respondent were fallowing "WE TWO OUR TWO"

Education wise distribution the maximum number of respondents were having only primary education 46.4% fallowed by 39.8% are illiterate there was higher rate of health problem among illiterate, primary and higher level of education then there was identified no significant association between educational status and health problem. This reflects that increasing age cause different type of health problems among older age people.

Regarding daily income wise distribution the maximum number of respondents were representing to 200-300 Rs. i.e. 66.9% fallowed by 23.2% earn only 200Rs. Daily while 2.8% earn rupees 300 and above. Among all the respondent earning 300 and less than this replied that they were not satisfied by their daily income while 99.4% have taken their breakfast and among all 62.4% were taken meal during Rickshaw pulling while 37.6% have not taken their meal during work, 37.6% were from Vegetarian and the other replied that they were Non-Vegetarian i.e. 62.4%.

As per the data 16% of respondents were suffered by general problem, 10.5% suffered from malaria, 8.3% from UTI,6.6% respondents from piles, followed by typhoid 6.1% and 2.8% from tuberculosis and only 45.6% of respondents have taken the treatment regarding their problem while the others i.e. 21.7% have not taken the treatment.

As per habit of tobacco chewing wise distribution almost all respondents 90.6% are chewing tobacco while only very few were in category of not chewing tobacco 9.4%. Among all initiation of use of tobacco is maximum at the age group of 16-19 year i.e. 58% fallowed by 18.8% in the are group of 13-15 year and minimum is at 20-26 year age group i.e. 4.4%.

On basis of type of tobacco used the maximum people are using Gutkha i.e. 36.4% fallowed by khaini 26.4%, zarda 21.3% and minimum use of pan is at 9.9% the most enthaustic answer they replied for the reason of tobacco use is that don't know 32.6% and it's the maximum and minimum goes to friends also use 1.7% fallowed by 20.4% to enjoy pulling, and to reduce exhaust 11.6%.

As per question related to health problem 59.1% of respondents were having the bad breath problem and remaining 40.9% were not having. 21.5% replied that they were having problem of leukoplakia while 78.5% were not having it. 43.1% of respondents were having problem of lock Jaw and 56.9% were not having problem of lock Jaw.

74% of respondents were replied that they were having problem of oral stain and 26% were not having it, on other side 10.5% of respondents were having problem of mouth ulcer while 89.5% were not having it.

Only very few i.e. 2.8% were of B.P. patient fallowed by 2.3% of diabetes and 15.5% of frequent urination and 33.7% of burning sensation while urination.

73% of respondents were replied that they were smoking and 49.2% feel weakness. While in smoking mostly they use bidi 60.6% fallowed by cigarette 6.7% and hokka 3.3% on other hand 55.2% respondents wanted to quit the use of tobacco and the reason behind quitting is social acceptability 13.3%, money 13.8%, smells bad 13.7%.

According to alcohol use 51.4% of respondents were using alcohol and the preferred time to intake was after duty 47.8%, and the place of drinking was at home 25.3% fallowed by friends home 10.7% and at alcohol shop 7.9% along with frequency of drink was quarter mostly 37.6% and the most alarming thing was that they use alcohol because of stress 20.6%

(M Rani *et al*, 2003) thirty percent of the population 15 years or older—47% men and 14% of women—either smoked or chewed tobacco. In a study of tobacco use in a rural area of Bihar, tobacco use had a prevalence of 78% among men and 52% among women.

A study done by (Bhuputra Panda *et.al*. 2003) in Odisha revealed that 70% of the illiterates consumed tobacco as compared to 34% post graduates,52.1% of the respondents were aware of Indian tobacco control laws, while 80.8% had knowledge about the provision of the law prohibiting smoking in public places.

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