

## Prevalence of Substance Abuse and Contributory Factors for Substance Abuse among Male Slum Adolescents, Delhi

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### ABSTRACT

This study focuses on the magnitude of the prevalence of substance use (focused on tobacco and alcohol use) and its socio-economic determinants of tobacco and alcohol consumption among male adolescents living in New Delhi slum area. A community based cross sectional study was carried out among 125 adolescents (aged 15-19 years) selected via systematic random sampling at Sarai Basti slum area of South Delhi for a period of 3 months from February 2012 to May 2012. Those youths who were not the residents of the study area since two years and who did not wish to participate in the study were excluded. Verbal informed consent was obtained from the study subjects before the conduction of the study. The data was recorded by administering a pre-designed and semi-structured questionnaire.

The prevalence of tobacco use was 38.8 percent and prevalence of alcohol use was 20 percent in the study group. Minimum age of initiation of tobacco and alcohol product use was 14.8 and 16.4 years respectively. Some subjects were using both alcohol and tobacco (17.6 percent). Factors such as substance use by parents, education status of parents, peer pressure and lower educational status were significantly associated with substance use by study subjects.

Tobacco and alcohol control should therefore be a top priority not only as a health issue but as a social development issue also. Hence improvement of educational and awareness of slum adolescents strongly needed. Slum adolescents and their parents urgently need health education regarding the consequences of substance use.

**Keywords:** *Adolescents, Substance abuse, Alcohol, Tobacco, Peer Pressure, Socio-economic factors*

Substance abuse is an important modifiable risk factor common to major non communicable disease (NCDs)-cancer, cardiovascular diseases, chronic respiratory diseases and diabetes,

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causing more than 1 in 6 of all NCD deaths and they share four common risk factors namely tobacco use, harmful use of alcohol, unhealthy diet, and lack of physical activities. The epidemic of substance abuse in young generation has assumed alarming dimensions in India. Some substances are available through legitimate mechanisms (with restrictions as applicable) such as approved medicines, alcohol<sup>v</sup> and tobacco<sup>®</sup>, while others are unauthorized and illicit, such as heroin and cannabis<sup>i</sup>. It poses a unique problem for India as it is produced, manufactured, exported and consumed in abundance.

Although tobacco deaths rarely make headlines, tobacco kills one person every six seconds<sup>ii</sup>. Tobacco kills a third to half of all people who use it<sup>iii</sup>, on average 15 years prematurely<sup>iv</sup>. Today, tobacco use causes 1 in 10 deaths among adults worldwide – more than five million people a year. If current trends continue unchecked, it is estimated that around 500 million people alive today will be killed by tobacco<sup>v</sup>. During this twenty-first century, tobacco could kill up to one billion people<sup>vi</sup>. Following the introduction of tobacco into India by the Portuguese in about 1600, its use spread rapidly to all parts of the country, percolating into all sections of society. Tobacco is smoked, chewed, sucked or applied to teeth and gums in diverse ways<sup>vii</sup>. Bidis, small hand-rolled cigarettes typically smoked in India and other South-East Asian, countries, produce three times more carbon monoxide and nicotine, and five times more tar than regular cigarettes<sup>viii</sup>. Most tobacco users will want to quit but will be unable to because of their dependence on a highly addictive substance. However, all forms of tobacco are lethal. Smoked tobacco in any form causes up to 90% of all lung cancers and is a significant risk factor for strokes and fatal heart attacks<sup>ix</sup>.

In 2002, the use of Alcohol and Illicit drugs was estimated to contribute 4% of the disease burden in the 15-29 yrs age group in low and middle income countries (WHO, 2002)<sup>x</sup>. The medical literature has emphasized the increased risk of liver cirrhosis, kidney failure and mental illness associated with chronic alcohol consumption.<sup>xi</sup> In addition, alcohol consumption is also associated with strong negative externalities such as violence, crime, and a higher incidence of motor vehicle accidents.

The studies have found that 25-90 percent of street children use psychoactive<sup>∞</sup> substance of some kind.

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<sup>v</sup>Alcohol is a depressant which inhibits or decreases some aspects of central nervous system activity such as wine, beer, spirits, home-brew, some medicinal tonics and syrups (e.g. cough syrups) etc. Immediate effects of alcohol consumption are loss of physical coordination, unclear vision, slurred speech, making poor decisions or impairment of memory and long term effects of regular use can cause loss of appetite, vitamin deficiency, skin problems, depression, and loss of sexual drive, liver damage, heart ailments, nerve and brain damage or loss of memory.

<sup>®</sup> Tobacco and tobacco products contain nicotine which is a stimulant and activate or enhances central system activity. Immediate effects of nicotine are feels alert immediately after using tobacco, and then feels more relaxed a few minutes later. There is also an increase in pulse rate, a temporary rise in blood pressure, dizziness, nausea and reduced appetite. Long term effect depends upon the form in which it is taken. Heart and lung disease, blockage of arteries (peripheral vascular disease), high blood pressure, and breathing difficulty, cancer of the lung (with cigarette smoking) and cancers of the mouth (with pipe smoking and tobacco chewing) can occurs.

<sup>∞</sup> Psychoactive material any substance which when consumed affects the way people feel, think, see, taste, smell, hear or behave.

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Adolescent substance abuse<sup>3</sup> is one of the major areas of concern in adolescent and young people's behaviour throughout the world (UNDCP, World Drug Report, 1999). Particularly alarming is the fact that the age of initiation in substance abuse is progressively falling. Adolescence is a time of experimentation and risk-taking and the initiation of substance use often begin during this period. Alcohol, tobacco and inhalants are described as gateway drugs, which supposedly causes its users to move on to harder drugs. In case of street children and migrants children it was observed they usually start with tobacco products then get into inhalants, alcohol and move onto harder drugs like ganja, charas, heroin, opioids etc<sup>xiii</sup>. All the gate way drugs are easily available to the children.

Whatever type of substance abuse it is, it creates a huge hindrance for survival, protection, growth and healthy development of children and on regular use of these substances, the body develops tolerance for it<sup>II</sup> The problem of substance abuse could be more serious in street adolescents or slum area having unfavourable psychosocial environmental factors like low socio economic living conditions, educational and recreation deprivation, child labour etc.and it becomes even important to understand the contributing factors in the fast changing social milieu. Hence, this study provide an essential source of information about the extent and pattern of substance use, socio-demographic correlates and identification of high risk groups in a youth population.

### **Research Objective:**

1. To determine the prevalence of substance abuse (tobacco and alcohol) among male slum adolescents.
2. To determine the pattern of and various socio-economic factors contributing to substance abuse among male slum adolescent.

### **Settings and Design:**

The cross-sectional community based study was conducted among urban male slum adolescents aged 15-19 years of Daya Basti, New Delhi. The study period was of three months, from 13<sup>th</sup> February to 10<sup>th</sup> May, 2012.

## **METHODS AND MATERIAL:**

Systematic random sampling technique was used to collect primary data and in order to obtain a representative sample, the following formula was used  $N^N = (1.96)^2 pq/d^2$ , taking into consideration the prevalence<sup>®</sup> of substance use as 27%,<sup>[4]</sup> with an allowable error of 10% and confidence interval of 95%. The calculated sample size was 75. Taking the design effect

<sup>3</sup> Substance abuse refers to the harmful or hazardous use of any psychoactive substances, including tobacco, alcohol and illicit drugs.

<sup>II</sup> Tolerance refers to the condition where the user needs more and more of the drugs to experience the same effect.

<sup>N</sup> p' stands for prevalence assumed, d is the deviation allowed which was taken at 10%.

<sup>®</sup> Prevalence of tobacco use among adults (15-24 years) was 27% as per Global Adult Tobacco Survey India 2009-10 while the prevalence of alcohol consumption was less. So, tobacco prevalence was taken into consideration for calculation of sample size.

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of 1.6, adjusted sample size become 120. The target group was well informed of the purpose and importance of the study conducted and then verbal informed consent was obtained before the study. The study instrument used was a validated structured questionnaire on smoking, drinking and their related factors. The questionnaire was tested in a pilot trial on 7-8 adolescents and minor modifications were made to the original questionnaire.

### ***Statistical analysis used:***

The statistical analysis was carried out using chi-square, independent sample T-tests, one way ANOVA and 95% confidence interval by using Statistical Package for Social Sciences (version 12.0)

## **RESULTS:**

In the present study, total 125 male slum adolescents participated and were interviewed. Out of them 11.2 percent were illiterate, 10.4 percent were educated up to primary school, 23.2 percent were educated up to middle school and 55.2 percent of study subjects were educated up to secondary and above.

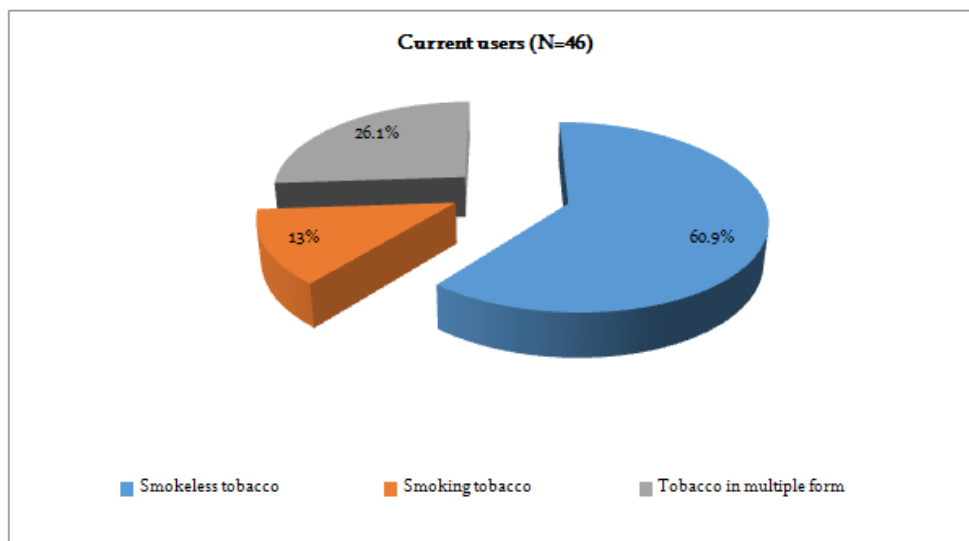
The overall prevalence of substance abuse (tobacco and alcohol both) was 17.6 percent. While, the overall prevalence of tobacco in any form and of chewing tobacco among male slum adolescents was 38.8 percent and 32 percent respectively and the prevalence of alcohol use was 20 percent. 43.2 percent of the respondents have tried tobacco products at least once in their life while the figure was at 24 percent for the alcohol use.

Kokiwar and Jogdand also reported prevalence of 32.7 percent of tobacco in their community based study among randomly selected adolescents in an urban slum area of Karimnagar district, AndhraPradesh. While, Sarangi et al, (2008) also reported prevalence of 49.5 percent of tobacco and prevalence of alcohol 14.7 percent among adolescents in urban slum of Sambalpur district of Orissa.

It was found in this study that the age of initiation of tobacco use was 14.8 years while as per The Global Adults Tobacco Survey (GATS)-2010, average age of initiation among adults of India was 17.6 year and, for alcohol going adolescent it was 16.4 years. Of the current tobacco users (46), almost half had initiated the use of tobacco in any form between 16 to 18 years while one-third had started the use between 10 to 12 years of age.

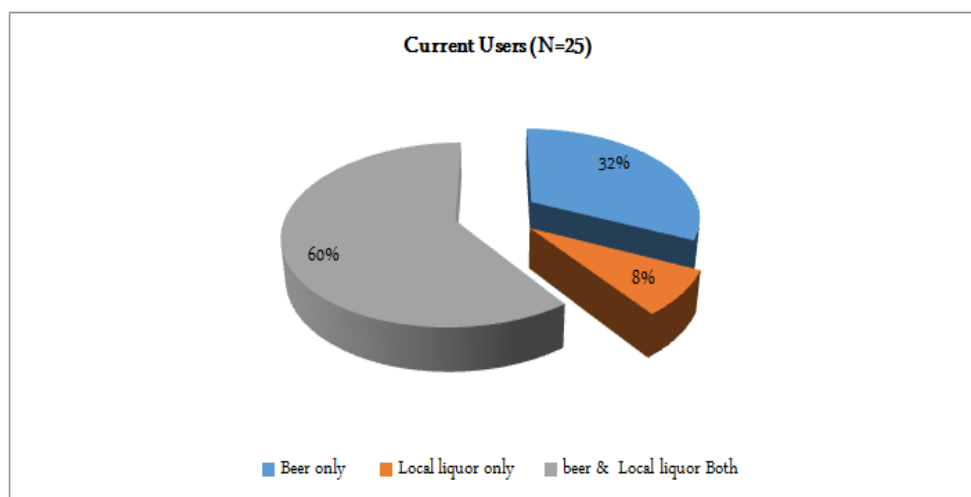
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**Figure-1: Distribution of current users by type of Tobacco use**



Tobacco was most commonly reported to be used in smokeless forms tobacco (60.9 percent), followed by mixed use (both smoking and smokeless tobacco) (26.1 percent). 13 percent stated that they consume only smoked tobacco (Figure-1).

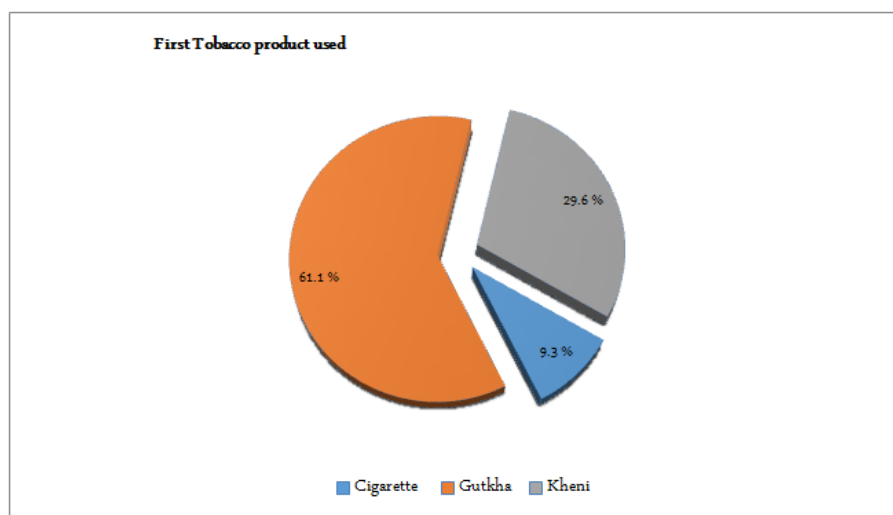
**Figure-2: Distribution of type of first tobacco product used among male adolescents (Percentage)**



More than ninety percent of the respondents firstly tried with chewing tobacco form, and one-third tried with Gutkha only.

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**Figure-3: Distribution of current adolescent users by the type of alcoholic drinks (Percentage)**



While the most commonly used alcoholic drink among current adolescent users were beer & country made local Liquor<sup>v</sup> both (60 percent), followed by beer only (32 percent) and rest by local liquor (Figure-3). The first ever used alcoholic drinks was beer (82.8%), followed by local liquor (17.2%). The most preferred drink at a time was a peg of local liquor (37.5 percent) followed by a bottle of beer (33.3 percent).

**Table-1: Age wise prevalence of substance use**

Age in years	Tobacco use	Alcohol use
	Yes (N=46)	Yes (N=25)
15	6.5%	-
16	17.4%	8%
17	10.9%	8%
18	28.3%	40%
19	37%	44%

Table-1 shows that, as age increases there is increase in tobacco consumption significantly ( $P < 0.001$ )<sup>vi</sup>. Prevalence of tobacco and alcohol use was highest of 37 percent and 44 percent respectively, among adolescents of 19 years of age.

<sup>v</sup>Country made/local liquor are locally available in various forms like in bottles, pouches etc. One peg of alcoholic drink is equivalent to 25 ml.

<sup>vi</sup>Chi-square test was applied

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**Table-2: Relationship between socio-demographic conditions and substance use pattern**

Characteristics/Independent variables	Dependent variables	
	Tobacco Current* users	Alcohol Current* users
<b>Parental smoking</b>		
None	23.9	37.5
Parents only	17.4	33.3
Parents and siblings	19.5	4.2
Siblings only	39.2	25
<b>Father's Education</b>		
None	63	54.1
Primary	13	8.3
Middle	23.9	37.5
Secondary	-	-
Higher Education	-	-
<b>Mother's Education</b>		
None	91.3	91.7
Primary	4.3	-
Middle	4.3	8.3
Secondary	-	-
Higher Education	-	-
<b>Birth Place</b>		
Urban	47.8	41.7
Rural	52.2	58.3
<b>Living Status</b>		
Alone	4.3	8.3
With parents	75.7	83.1
With siblings only	20	8.3
<b>Family type</b>		
Nuclear	82.6	83.3
Joint	17.4	16.7
<b>Birth order</b>		
1-2	39.2	58.3
3-4	39.1	41.7
5-6	8.7	-
7-8	13	-

\*Within last 30 days.

The data analysis (Table: 2) support the assumption that there is positive association between substance use by family members and adolescents ( $P < 0.002$ )<sup>∞</sup> and the types of tobacco

<sup>∞</sup> Chi-square test

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products in use also associated with tobacco consumption by family members ( $P < 0.015$ )<sup>z</sup>. Tobacco use among adolescents was mainly associated with tobacco practices of their siblings (39.2 percent), while for alcohol consumption it was also associated with parental use (33 percent).

There was negative association between parental education status and substance abuse by adolescents. 63 percent of current tobacco user's and 54.1 percent of current alcohol user's father didn't have any formal education while the association was more negative for mother education where above figures stand at 91.3 and 93.7 percent. Results were not statistically significant due to limited sample size.

Adolescents of first and second birth order were more likely to be substance abuse victims and in the preview of small sample size, it is difficult to conclude about the effect of family type on consumption behaviour.

**Table-3: Percentage of adolescent's age 15-19 years who are current users of various substances, according to individual characteristics.**

<b>Background characteristics</b>	<b>Current tobacco user (n=46)</b>	<b>Current alcohol user (n=25)</b>
<b>Education level</b>		
No formal schooling	21.7%	32%
Primary	10.9%	12%
Middle	6.5%	8%
Secondary	60.8%	48%
<b>Occupation</b>		
Student	34.4%	33.3%
Working	64.6%	63.2%

Initially there was a sharp decline in substance uses with increase in education level of adolescents up to middle class after that there was sudden increase in tobacco and alcohol consumption. The difference was statistically significant of having no formal education and middle and secondary education ( $P < 0.001$ )<sup>y</sup>. It has emerged from the study that a higher proportion of working adolescents of each age group are indulged in all types of risk-taking behaviour than not-working adolescents (Table-3).

<sup>z</sup> Independent sample T-test

<sup>y</sup> One way ANOVA statistical test



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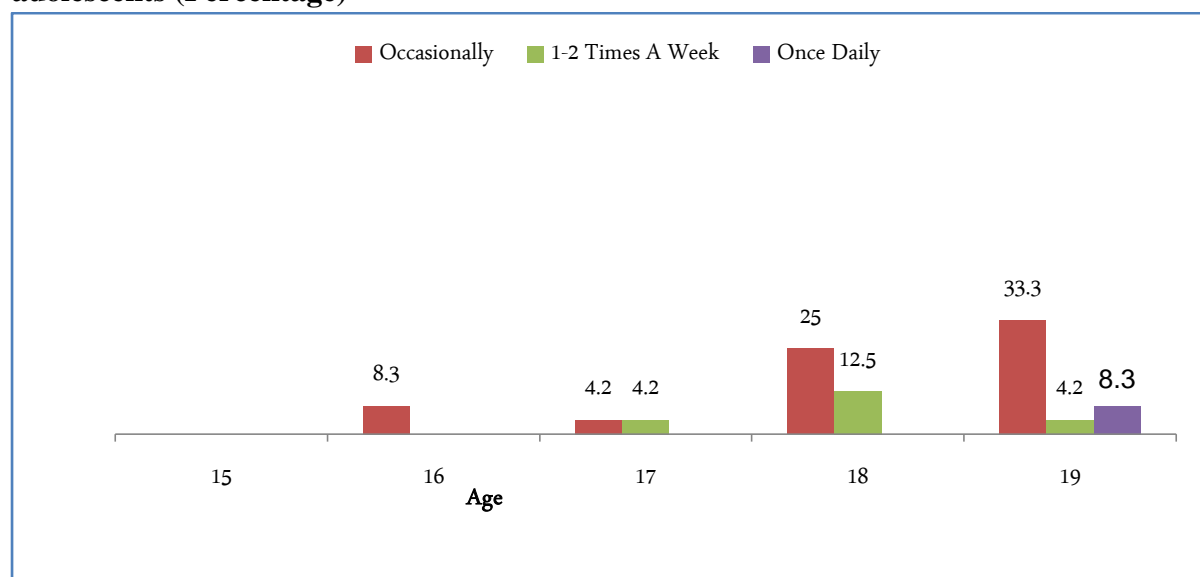
**Table-4: Distribution of current users by type of Tobacco use**

Frequency of use	Bidi	Cigarette	Kheni	Gutkha
Current users (N=46)	39%	34.8%	52.2%	82.6%
<b>Frequency of use by products</b>				
Occasionally	26.1%	6.5%	13%	13%
One-two times a week	-	8.7%	-	13%
Once daily	4.3%	-	8.7%	4.3%
Two-five times a day	4.3%	21.7%	13%	17.4%
More than five times a day	-	-	17.4%	32.6%

The most common tobacco products used by slum male adolescent were smokeless tobacco which mainly include Gutkha (82.6 percent) followed by Kheni (52.2 percent). Among tobacco smoking bidi (39%) was most widely used product (Table-4). The most frequent (more than five times a day) tobacco product was gutkha (32.6 percent) followed by kheni (17.4 percent). Cigarette smoking was also more frequently used (21.7 percent) two to five times a day.

Majority of tobacco products users (76.1%) (N=35) have tried to quit but only 37.1% (N=13) were successful in quitting for more than 48 hours. Among the rest restlessness (63.6%) and craving for tobacco (36.4%) main were the main reasons for failure in quitting. Majority of current smokers were concerned (84.8%) about quitting the habit of tobacco consumption. Average money spent on tobacco products per month was Rs. 630, ranging from Rs. 20-3000.

**Figure-4: Relationship between age and frequency of alcohol use among male adolescents (Percentage)**



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The frequency of alcohol consumption was increasing with increase in age of the respondents. At age 16 there were only occasional drinkers (8.3 percent) and with increase in age, the frequency of use was increasing. At age 19, proportion of daily drinker was 8.3 percent and also the proportion of occasional drinker increased to 33.3 percent (Figure-4). This shows the need for interventions focused at younger age groups to protect them of being more frequent users.

The main inducing factor for tobacco use was peer pressure (88.9 percent) followed by watching family members (7.4 percent) using tobacco products and stress (3.7 percent). Also, among current alcohol users main inducing factor was peer pressure and as most of the adolescents, who ever tried alcoholic drinks, had first drink with friends (93.1%). 79.2 percent of current users take drink only with friends while rest takes alone also. The main reason for alcohol consumption was enjoyment and relaxation (83.3 percent) of current alcohol users admitted that they drink for

### **Awareness on harmful effects of substance use**

Although, the male adolescents were aware of the fact that tobacco use endangers health, awareness was mostly on the linkages between tobacco use and various cancers. In our study, 42.4 percent knew that tobacco causes lung cancer, oral cancer while 10.4 percent reported that smoking cause asthma and the awareness on the association between tobacco and cardiovascular disease were 3.2 percent only. Surprisingly, those who reported a linkage between tuberculosis and tobacco use in this study was only 4.2 per cent. In short, the awareness regarding adverse health effects of tobacco use was largely limited to cancers and hence there is a need for information dissemination focusing on tobacco related diseases especially, cardiovascular diseases and chronic obstructive pulmonary diseases, since these two are the leading causes of death from smoking apart from lung cancer<sup>xiii</sup>

Awareness of the harmful effects of alcohol consumption on health was mostly linked between alcohol and liver and kidney diseases (11.2 percent), 3.2 percent admitted that alcohol causes mental health problems. Majority of respondents (28 percent) were not aware of any adverse effects of alcohol use and 23.2 percent said there is no harms in alcohol consumption.

## **DISCUSSION**

The current use of tobacco (smoking as well as smokeless form) was much higher (38.8%) in male adolescent of Daya basti slums as compared to reported prevalence of adults in India (27%) by GATS 2009-10. The average age of initiation of tobacco use was also much lower than the average age of initiation among adults of India.

The smokeless tobacco is the most common tobacco form first tried among adolescents (more than 90%) and preferred form (two-third) among current users. The prevalence and frequency of tobacco product use was increasing with increase in age.

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The beer & local drink was the choice of alcoholic drink at the time of initiation while local drink was more preferred among current alcohol users followed by beer. There was positive association with use of tobacco products and alcoholic drink by adolescents and use of these products by any of the family members and negatively associated with parenteral education.

There was sharp decline in substance use with increase in education level among adolescent with no formal education to middle class but sudden rise in use of tobacco and alcohol use among secondary education level adolescents. Despite evidence that pressures to engage in smoking are subtle and covert in nature, some researchers suggest that overt pressures are involved in decision-making regarding tobacco use. For example, Friedman *et al* (1985) argue that pressures to smoke are implicit in the majority of smoking situations, and cite youths' report of cigarette offers, verbal encouragement and teasing as evidence of such pressure<sup>xiv</sup> and this study findings also inclined toward strong peer pressure at higher age group and also the desire to experiment and to be perceived as a macho person increases with age group. Working status is also an important dimension, which makes an impact on an individual's behaviour. The awareness level for harmful effects of tobacco and alcohol use was also very low among the slum adolescents.

### **CONCLUSIONS**

Substance abuse in general, is a complex phenomenon, which has various social, cultural, biological, geographical and economic aspects. Prevalence of Tobacco and prevalence of alcohol use among male slum adolescents is at a significantly high level. Tobacco smoking is comparatively low among adolescents compared to tobacco chewing possibly due to the smoking ban in public places. Difference in the risk-taking behaviour has been found according to age group of the adolescents. It has emerged from the study that a higher proportion of working adolescents of each age group are indulged in all types of risk-taking behaviour than not-working adolescents. The propensity of indulging in substance abuse gets aggravated when there is low parental education and low birth order of adolescent.

And also tobacco industry strategies to shift their focus to smokeless tobacco products which are not affected by current tobacco control policies. Tobacco use leads to many chronic non-communicable diseases, treatment of which puts economic burden on the people pulling them below the poverty line.

Adolescence is the most important period of human life as they are easily influenced by habits and behaviours of their parents, siblings or peers and initiate substance use. The study findings reveal that adolescent peer relationships contribute to adolescent tobacco and alcohol use. Hence, IEC activities regarding consequences of substance use should be targeted towards adolescents. Thus, it is high time to save the individual in particular and the society in general for a healthy and a wealthy society.

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### Key Messages:

- Community-based health awareness campaigns for adverse effects of substance abuse, targeting community leaders and parents in slum communities.
- Focused peer educator interventions adolescents living in slums and vulnerable populations

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