

TOBACCO CONSUMPTION PATTERNS AMONG ADOLESCENTS IN A RURAL COMMUNITY: A CROSS-SECTIONAL STUDY ON INFLUENCES, HABITS, AND GENDER DISPARITIES

Dr Ravindra Kumar Vishnoi¹, Dr. Kshatrapal Prajapati², Dr Vijay Prasad S³, Dr Vasant Wagh⁴

¹Epidemiologist cum Assistant Professor, Department of Community Medicine, Netaji Subhash Chandra Bose Medical College, Jabalpur, Madhya Pradesh

²Associate Professor, Department of Community Medicine, SRVS Medical College, Shivpuri, Madhya Pradesh

³Designated Professor, Department of Pharmacology, SRVS Medical College, Shivpuri, Madhya Pradesh

⁴Professor, Department of Community Medicine, J.N. Medical College, Sawangi (Meghe), Wardha, Maharashtra.

Corresponding author: Designated Professor, Department of Pharmacology, SRVS Medical College, Shivpuri, Madhya Pradesh. Email: vijayfarmac@gmail.com

Abstract

The adolescent develops his habit, attitude and behaviour on the basis of influence from surrounding social environment, which constitute family members, neighbours, relatives, teachers and later on from peers and society. Term "Substance use" includes use of legitimate substances like tobacco, alcohol or diversion of prescription drugs as well as illicit substances like Cannabis (Ganja), Cocaine, hallucinogens, Inhalants, tranquilizers, sedatives and intra-venous drugs. Among all types of the known substances used, tobacco use is the commonest and most widely distributed across the world. Method: The present study was a community based cross sectional study which was conducted in eight adopted villages for community health care programme. All adolescent in the age group of 10-19 years of study villages and permanent resident of Study village. Information regarding local available tobacco products was collected. The age verification was confirmed via parents. After explaining the purpose of survey and taking the permission from parents, the importance of their cooperation for the success of study was emphasized and interview were conducted in absence of family members for maintenance of confidentiality. The visit of adolescents was organized in morning or evening hours in working days and according to availability of study subjects on holidays. The adolescents were initially briefed for 5 minutes regarding the procedure. The printed pre-designed, pre-tested, pre-coded semi-structured questionnaire was used to collect the information. Data collected were entered into worksheet of Microsoft excel-2013 on same day. Results: Age wise distribution of 485 adolescents having 63.29% male (n=307) and 36.70%

female (n= 178) participants in the present study. Mean age of study participants were 14.35 years and average age of male and female participants were 14.47 and 13.93 years individually. Most of the study participants (77.11 %) belonged to nuclear type family while 22.89% participants belonged to joint family. Ever tobacco user study participants was 31.34 % while ever smokeless and ever smoke from tobacco users were respectively (30.52%) and (6.60%). Gender-wise distribution shows 41.69 % male and 13.48% female were ever tobacco users. Much higher frequency found in male tobacco users in both forms smokeless and smoking. Ever tobacco user study participants was 31.34 % (Early adolescents 22.49% and late adolescents 40.68%) while ever smokeless and ever smoke form tobacco users were respectively (30.52%) and (6.60%). Conclusion: Smokeless form of tobacco consumption was much higher than smoking. Daily users were $\frac{3}{4}$ of the total tobacco users. Handmade locally prepared tobacco product (Kharra) was the preferred mode in smokeless tobacco users while Bidi in smokers. Tobacco Smoking was present only in male. Trend of mode of tobacco consumption is towards locally available products.

Keywords: Tobacco, Adolescent, Central India region.

INTRODUCTION

The adolescent develops his habit, attitude and behaviour on the basis of influence from surrounding social environment, which constitute family members, neighbours, relatives, teachers and later on from peers and society. Child learn through observation and interaction with people around him as well as from the environment in which they are being brought up. Adolescents continually face issues which are likely to be stressful for them with changes in relationships. Parent-child relationships undergo important transitions during adolescence, including a decrease in time spent with parents and increasingly spent more time with peers (1).

Globally adolescent population is around 1.2 billion and out of six persons, every one person is in adolescence (aged 10 to 19 years) period (2). Exposure to unprotected sex, violence, use of Alcohol or tobacco can endanger their current health as well as in prospective adults, and even the health of their future children. It is estimated that 1.2 million adolescents died in 2015 and mostly from preventable or treatable causes (2). Term "Substance use" includes use of legitimate substances like tobacco, alcohol or diversion of prescription drugs as well as illicit substances like Cannabis (Ganja), Cocaine, hallucinogens, Inhalants, tranquilizers, sedatives and intravenous drugs. Among all types of the known substances used, tobacco use is the commonest and most widely distributed across the world. Tobacco consumption is responsible for occurrence of more than two-third of all new cases among Non-Communicable Diseases (3). Consumption of tobacco is so much harmful as it kills nearly 50% of its users (4). Globally India has third position in tobacco production while tobacco consumers are second largest in numbers. Mortality in India due to Tobacco use is 1.3 million (5). Out of which 1.0

million due to smoking and remaining from smokeless form of tobacco use(5). Tobacco control in India-2004 reported all proportionate deaths attributed to tobacco use is expected to rise from 1.4% in 1990 to 13.3% in 2020. This will result in enormous economic, emotional and societal costs in a population of more than a billion people (6). Many community based studies have been conducted on prevalence of tobacco consumption among adolescents in India (7-11) as well as in Maharashtra (11-14) even on Rural adolescents of Central India .

Assessment of tobacco consumption among adolescents from rural area of Central India , Maharashtra.

The adolescent develops his habits, attitudes and behaviors based on the influence of the surrounding social environment, which consists of family members, neighbors, relatives, teachers and later peers and society. The child learns through observation and interaction with the people around him and from the environment in which he grows up. Adolescents are constantly confronted with problems that can be stressful for them when relationships change. Parent-child relationships undergo important changes during adolescence, including a reduction in time spent with parents and increasing time with peers (1).

MATERIAL & METHOD

The present study was a community based cross sectional study which was conducted in eight adopted villages for community health care programme (CHCP). Required study participants from each village were calculated through PPS (Probability proportion to size). We calculated required number of study participants from each village via population proportionate to size for adolescents.

Inclusion Criteria: All adolescent in the age group of 10-19 years of study villages. Permanent resident of study village only and willing to give informed consent.

Exclusion Criteria: Migrants from Study villages, not willing to participate in the study and not available after three consecutive visits.

Information regarding local available tobacco products was collected. Reviewed previous researches, surveys and questionnaire used in Global youth tobacco survey- I, Global adult tobacco survey-2 were used in designing study questionnaire (5, 15). The age verification was confirmed via parents. After explaining the purpose of survey and taking the permission from parents, the importance of their cooperation for the success of study was emphasized and interview were conducted in absence of family members for maintenance of confidentiality. The visit of adolescents was organized in morning or evening hours in working days and according to availability of study subjects on holidays. The adolescents were initially briefed for 5 minutes regarding the procedure. The printed pre-designed, pre-tested, pre-coded semi-structured questionnaire was used to collect the information. Data collected were entered into worksheet of Microsoft excel-2013 on same day.

RESULTS

Table 1: Age (Completed years) and Gender-wise distribution of study Participants

Age (in completed years)	Male No. (%) (n= 307)	Female No.(%) (n= 178)	Total No.(%) (n=485)
10	21(6.84%)	13(7.30%)	34(7.01%)
11	20(6.51%)	12(6.74%)	32(6.60%)
12	29(9.45%)	21(11.80%)	50(10.31%)
13	40(13.03%)	22(12.36%)	62(12.78%)
14	42(13.68%)	29(16.29%)	71(14.64%)
15	40(13.03%)	32(17.98%)	72(14.85%)
16	44(14.33%)	21(11.80%)	65(13.40%)
17	28(9.12%)	14(7.87%)	42(8.66%)
18	38(12.38%)	11(6.18%)	49(10.10%)
19	5(1.63%)	3(1.69%)	8(1.65%)
Total	307(63.30%)	178(36.70%)	485(100%)

Table shows age wise distribution of 485 adolescents having 63.29% male (n=307) and 36.70% female (n= 178) participants in the present study. Mean age of study participants were 14.35 years and average age of male and female participants were 14.47 and 13.93 years individually. Observed difference of Age and Gender-wise distribution among study participants was statistically not significant with $\chi^2 = 8.102$, and P value=0.5239. According to their age-wise distribution, Majority (14.85%) were of 15 years followed by 14 years (14.64%). Amongst all, least percentage was of 19 years (1.65%).

Table 2: Socio-demographic characteristics of the study population

Characteristics	(N= 485)	%
Gender		
Males	307	63.30%
Females	178	36.70%
Age group		
Early adolescents(10-14)	249	51.34%
Late adolescents(15-19)	236	48.66%

Occupation of Father		
Farmer	231	47.63%
Labourer	161	33.20%
Service	31	6.40%
Artisans	30	6.18%
Self employed	27	5.56%
Un-employed	5	1.03%
Occupation of Mother Labourer	333	68.66%
House wife	130	26.80%
Self employed	13	2.68%
Service	8	1.65 %
Farmer	1	0.21%
Type of Family		
Nuclear	374	77.11%
Joint	111	22.89%

Table 3: Gender-wise distribution of tobacco Consumption

Tobacco Users	Male no. (%)N=307	Female no. (%)N=178	Total (N=485)	Chai square	P-value
Tobacco Ever user	128 (41.69%)	24(13.48%)	152(31.34%)	41.67	<0.0001
Ever Smokeless tobacco users	125(40.71 %)	23(12.92%)	148(30.52%)	41.05	<0.0001
Ever smoker	30(9.77%)	2(1.12%)	32(6.60%)	Fisher	<0.0001
Discontinued Tobacco Users	35(11.40%)	16(8.99%)	51(10.51 %)	0.6966	0.4039
Discontinued smokeless tobacco Users	34(11.07%)	15(8.43%)	49(10.10%)	0.8698	0.3510
Discontinued smoking Users	17(5.54%)	2((1.12%)	19(3.92%)	Fisher test	0.0148
Current tobacco users	93(30.29%)	8(4.49%)	101(20.82%)	45.48	<0.0001
Current smokeless tobacco user	91(29.64%)	8(4.49%)	99(20.41%)	45.72	<0.0001
Current smoker	13(4.23%)	0(0.0%)	13(2.68%)	Fisher test	0.0016

Table: 4 Age-group wise distribution of tobacco consumption

Tobacco Users	Late Adolescents N=236	Early Adolescents N=249	TOTAL 485	Chai square	P-value
Tobacco Ever user	96(40.68%)	56(22.49%)	152(31.34%)	18.63	<0.0001
Ever Smokeless	93(39.40%)	55(22.08%)	148(30.52%)	17.14	<0.0001

tobacco users					
Ever smoker	28(11.86%)	4(1.61%)	32(6.60%)	20.69	<0.0001
Discontinued Tobacco Users	27(11.44%)	24(9.64%)	51(10.51%)	0.4182	0.5178
Discontinued smokeless tobacco Users	26(11.02%)	23(9.24%)	49(10.10%)	0.4227	0.5156
Discontinued smoking Users	16(6.78%)	3(1.20%)	19(3.92%)	Fisher test	0.0017
Current tobacco users	69(29.24%)	32(12.85%)	101(20.82%)	19.73	<0.0001
Current smokeless tobacco user	67(28.39%)	32(12.85%)	99(20.41%)	18.01	<0.0001
Current smoker	12(5.08%)	1(0.40%)	13(2.68%)	Fisher test	0.0013

Table 5 Genders of current users and pattern of tobacco consumption

Characteristics	Male N=93 n=91(97.85%)	Female n=8 (100%)	Total N= 101 n=99(98.02%)
*Smokeless			
Kharra	68(73.12%)	4(50%)	72(71.29%)
Pan-masala	13(13.98%)	1(12.5%)	14(13.86%)
Gutka	10(10.75%)	0(0)	10(9.90%)
Tobacco with lime	6(6.45%)	1(12.50%)	7(6.93%)
Nasmanjan	2(2.15%)	2(25%)	4(3.96%)
Tobacco With-out Lime	3(3.26%)	0(0)	3(2.97%)
Tobacco With Betel nut	2(2.15%)	0(0)	2(1.98%)
Khaini	1(1.08%)	0(0)	1(0.99%)
Smoker	n=13(13.98%)	n=0	n=13(12.87%)
Beedi	7(53.85%)	0	7(53.85%)
Cigarette	4(30.77%)	0	4(30.77%)
Both (Beedi+ cigarette)	2(15.38%)	0	2(15.38%)
Both (Smoker+Smokless)	11(11.83%)	0	11(10.89%)

Table 6: Frequency of tobacco consumption among male and female current users

Frequency of tobacco use	Male N=93	Female N=8	Total N=101
Regular (Daily) User	69(74.19%)	6(75%)	75(74.26%)
Once daily	12(12.9%)	2(25%)	14(13.86%)
2-3 times	32(34.40%)	1(12.5%)	33(32.67%)
4-5 times	18(19.35%)	2(25%)	20(19.8%)
More than 6 times a day	7(7.52%)	1(12.5%)	8(7.92%)
Irregular (Frequency in a week) user	24(25.81%)	2(25%)	26(25.74%)

Less than once	2(2.15%)	1(12.5%)	3(2.97%)
Once	1(1.08)	0	1(0.99%)
Twice	9(9.68%)	1(12.5%)	10(9.9%)
Thrice	5(5.38%)	0	5(4.95%)
Four days	3(3.23%)	0	3(2.97%)
Five days	3(3.23%)	0	3(2.97%)
Six days	1(1.08%)	0	1(0.99%)

Table 7: Gender-wise Distribution of Quantity of tobacco product in Smokeless form

Quantity of Smokeless tobacco	Male N=91	Female N=8	Total N=99
Used in one time			
1gram	12(13.19%)	0	12 (12.12)
2gram	52(57.14%)	5(62.5%)	57(57.58%)
3gram	16(17.58%)	2(25.0%)	18(18.18%)
4gram	4(4.40%)	0	4(4.04%)
Used in whole day			
<5 grams	32(35.2%)	4(50.0%)	36(36.36%)
5-10Grams	39(42.9%)	2(25.0%)	41(41.41 %)
10-15 grams	6(6.59%)	1(12.5%)	7(7.07%)
15-20 grams	13(14.3%)	1(12.5%)	14(14.14%)
>20 grams	1 (1.10%)	0	1(1.01 %)

DISCUSSION

As Table1 shows, Out of total 485 studied participants, 63.30% adolescents were male and 36.70% were female which was in accord with study conducted by Zahiruddin Q.S et al(11). However, in a similar study Aruna P. Tubachiet at el(16) conducted for assessment of tobacco consumption among rural adolescents of Telangana state majority were males (92.6%) and 7.4% female. Educational attainment is a fundamental indicator of a country's level of human capital development and an important socio-economic factor that is known to significantly influence on individual behaviour and attitude. 100% male and 99.44% female participants in present study were literate. Majority (35.46%) of study participants were educated till middle class, followed by secondary 31.75% and illiteracy was very less (0.21 %). Majority (27.63%) of adolescent's father were educated till secondary and only 9.48% were illiterate. School education of adolescent's mother in present study found that maximum 33.20% were up to secondary with 9.90% illiterate.(Table 2)

As shown in table 3, occupation of father in majority (47.63%) was farmer followed by 33.20% as Labourer, other occupations were Service, Artisans, self employed and un-employed respectively 6.40%, 6.18%, 5.56% and 1.03%. In present study 73.20% adolescent's mother were engaged with some occupation in addition to household works. Most (68.66%) were found working as labourers either as farm labourer or daily labourer followed by self-employed, service and others covers less than 5%.

Prevalence of tobacco consumption: Prevalence of tobacco consumption in all forms, among studied adolescents was 20.82%. while prevalence of tobacco consumption in male and female adolescents respectively 30.29% and 4.49%. This difference among male and female participants were found statistically highly significant (P value= <0.0001) and was more in male tobacco users. The prevalence of tobacco use among school students in different states of India has been reported to vary from 1.9 percent (Delhi) to 75.3 percent (Mizoram) (17, 18, 19). Surekha Kishore et al (2007)(13) in similar study from rural area of Central India district, reported overall prevalence of tobacco consumption 46.83%, while among boys and girls respectively 70.37% and 27.13%. Dongre AR et al (14) reported in 2008 from rural Central India, that 39% adolescents consumed any type of tobacco products National Family Health Survey (NFHS) phase-4(20), (2015-16) from Maharashtra state reported 33.9% men and 4.2% women using any kind of tobacco while in NFHS-3 (2005-06) Maharashtra, 48.3% men and 10.5% women used any kind of tobacco. Nation-wide survey in India (NFHS-4)(21) conducted in year 2015-16 reported Prevalence of tobacco consumption in any form among age group of 15-49 years in Men and women respectively 44.5% and 6.8% while in NFHS-3, 57% men and 10.8% women were using any kind of tobacco in India. Global Adult Tobacco Survey (GATS 2, 2016-17) (22) among adults of age 15 years or older reported prevalence of current tobacco use (smoking and/or smokeless) as 26.6% in Maharashtra and 28.6% in India. In last one month however among boys and girls it was 68.3% and 12.4% respectively. He found this difference among boys and girls statistically significant (p value= 0.000) and more in boys. Tobacco users were 74.26% while less than once in a day (Irregular) tobacco users were 25.74%. Among regular tobacco users frequency of tobacco consumption ranges from once in a day to more than six times a day, Maximum (32.67%) users were using tobacco products 2 to 3 times a day followed by 4 to 5 times a day (19.80%) and least users (7.92%) were using it more than six times a day. Among irregular tobacco users frequency of tobacco consumption ranges from less than once in a week to maximum six days in week. Maximum irregular tobacco users were using twice in a week (9.90%) and least users (0.99%) were using it once in a week. Quantity of smokeless tobacco products used in a day ranges from less than 5 grams in a day to maximum 2 kharra (40 grams) in a day. Maximum (38.38%) current smokeless forms were using 5- 10 grams of tobacco products in a day while minimum (1.01%) users were using more than 20 grams tobacco products in a day.

CONCLUSION

In this study prevalence of tobacco consumption among the study population was less in comparison to previous studies in rural area of Central India district. This decreasing trend may be due to effectiveness of existing anti-tobacco regulations in the country. Smokeless form of tobacco consumption was much higher than smoking. Daily users were $\frac{3}{4}$ of the total tobacco users. Handmade locally prepared tobacco product (Kharra) was the preferred mode in smokeless tobacco users while Bidi in smokers. Tobacco Smoking

was present only in male. Trend of mode of tobacco consumption is towards locally available products.

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