



Prevalence of Health Risk Behaviours among Adolescents of Shivamogga: A Cross-Sectional Study

Kanchana Nagendra¹, Raghavendraswamy Koppad¹

Financial Support: None declared
Conflict of Interest: None declared
Copy Right: The Journal retains the copyrights of this article. However, reproduction of this article in the part or total in any form is permissible with due acknowledgement of the source.

How to cite this article:
Nagendra K, Koppad R. Prevalence of Health Risk Behaviours among Adolescents of Shivamogga: A Cross-Sectional Study. Natl J Community Med 2018; 9(1): 33-36

Author's Affiliation:
¹Assistant Professor, Department of Community Medicine, SIMS, Shimoga

Correspondence
Dr. Kanchana Nagendra
kanchan.jirobe@gmail.com

Date of Submission: 22-07-17
Date of Acceptance: 18-01-18
Date of Publication: 31-01-18

ABSTRACT

Introduction: Adolescents constitute 20.9% of the Indian population, as per the Census 2011 enumeration data. The problems of adolescents are multi-dimensional in nature and require a holistic approach. Hence, this study was conducted to determine the prevalence and co-occurrence of health risk behaviour among rural and urban adolescents.

Methods: The study was conducted in urban and rural field practice areas of Shivamogga institute of medical sciences, Shivamogga. Multistage random sampling done to get sample size of 193 in each urban and rural areas. Data was collected and analyzed in epi info.

Results: In urban 2.92% (n=7) of adolescents smoke tobacco whereas in rural 2.50% (n=6) smoke tobacco. Mean age at first smoke in urban was 14.28 (SD±1.57) and in rural was 13.33 (SD±2.05). Prevalence of drinking alcohol in urban was 2.08% (n=5) and in rural was 1.25% (n=3). Mean age at first drink in urban was 12.5 (SD±3.57) and in rural was 10.66 (SD±4.02).

Conclusion: There has been an increasing need of inculcating health practices in this age group through different channels to unleash their true potential.

Key words: Adolescent Health, Health risk behaviour, smoking, alcohol.

INTRODUCTION

"Adolescere"- the word means to grow, to mature in Latin. It is a period of transition from childhood to adulthood characterized by rapid physical growth, significant physical, emotional, psychological and spiritual changes. Problems in this age group are multi-dimensional. 20.9% of the Indian population consists of adolescents.¹ More than 33% of the disease burden and almost 60% of premature adult deaths can be associated with behaviours that begin or occur during adolescence.²

In the year 1990, CDC Atlanta has developed the tool by the name "The Youth Risk Behaviour Surveillance System (YRBSS)" to monitor priority health risk behaviours that contribute markedly to the leading causes of death, disability, and social problems among youth and adults.³ The tool classi-

fy health risk behaviours into six categories. They are behaviours that contribute to unintentional injuries and intentional injuries, Tobacco use, Alcohol and other drug use, Sexual behaviours that contribute to sexually transmitted diseases, HIV and unwanted pregnancies, Unhealthy dietary behaviours, Inadequate physical activity⁴

Adolescents of many countries are alike in their nature which makes them susceptible to health risk behaviours, and the adolescents in India are no exception. Hence it is important to study the health aspects of this unique and sensitive age group separately. There has been a growing need of inculcating health practices in this age group through different channels to unleash their true potential. The findings will help the policy makers to device appropriate measures to cater to the needs

of this vulnerable section of the society. Objective of this study was to determine the prevalence and co-occurrence of health risk behaviour among rural and urban adolescents.

METHODOLOGY

This was a descriptive community based cross-sectional study. The study was conducted in rural and urban field practice areas of Shivamogga Institute of Medical Sciences (SIMS) Shivamogga.

One ward and a sub-centre will be selected by simple random sampling, will form the primary sampling units; Urban Health center Kote which is field practice area of SIMS Shivamogga has three wards. Ward one was selected for study. For rural area, field practice area of CHC Ayanur was selected. CHC Ayanur covers 20290 population and has 4 sub centers. Sub center Ayanur was chosen and villages Ayanur and Ayanur Kote was chosen for study.

Information about number of houses was collected from Anganwadi centers and Junior Health Assistant (F) of the respective sub-center. The households in these areas will be the secondary sampling units. The households for collection of data in these locations will be selected by systematic random sampling. First house was selected randomly, and then on, every 4th house was selected for the study. All the eligible adolescents (10- 19 years age group) from each household were interviewed till the sample size is reached. If the required sample is not attained, wards or sub centre in the immediate adjacent area will be included.

Sample Size: By taking Anticipated population proportions $p_1 = 50\%$ and $p_2 = 50\%$, sample size $n = z^2 (1-a/2) p_1 (1-p_1) + p_2 (1-p_2)/d^2$.

With above formula the sample size comes to 193 in each urban and rural areas.⁵ Considering 20% of non response rate and after rounding off 240 subjects were included each in urban and rural areas. House to house visit was done specially on the holidays by checking the availability of all the school-going study participants. If the required sample is not attained, sub centre in the immediate adjacent area was included.

Data collection and analysis: Data was collected regarding risk behaviours regarding tobacco and alcohol use by House-to-house visit through interviews using a standardized, pre-tested, semi-structured questionnaire. Confidentiality was given utmost importance by maintaining anonymity. Informed written consent was taken. Data was entered into Microsoft Excel spreadsheet. Epi info (Version 7) was used for performing the statistical analyses.

Ethical considerations: Ethical clearance for the study was obtained from the Institutional Ethics Committee. Consent for participation was obtained in an informed written consent from.

RESULTS

Out of 480 study participants, 240 were from urban and rural each. In urban, 64 (26.67%) were early adolescents of age group 10-14 and 176 (73.33%) were late adolescents of age group 15-19. In rural, 87 (36.25%) were early adolescents of age group 10-14 and 153 (63.75%) were late adolescents of age group 15-19 (Table 1).

Among 240 urban adolescents 148 were boys and 92 were girls and among rural adolescents 114 were boys and 126 were girls and the difference is not statistically significant (Table 1).

Table 1: Age and sex wise distribution of adolescents

Variables	Urban	Rural
Age		
Early (10-14yrs)	64(27%)	87(36%)
Late (15-19yrs)	176(73%)	153(64%)
Sex		
Boys	148(61.6%)	114(47.5%)
Girls	92(38.3%)	127(52.9%)

Table 2 explains adolescents behaviour associated with tobacco use. In urban 2.92% (n=7) of adolescents smoke tobacco in the form of cigarette/beedi whereas in rural 2.50% (n=6) smoke tobacco and this difference is statistically not significant. Mean age at first smoke in urban [14.28(±1.57)] was significant with p value <0.0001 when compared to rural [13.33 (±2.05)]. In urban, adolescents smoke on an average 13.25 (±12.27) days and 2 (±0.71) cigarettes/beedi per day in last 30 days which is in contrast with rural adolescents who smoke 1.66 (±0.94) days and 1 (0) cigarette/beedi (p < 0.0001). Proportion of adolescents who chew tobacco/gutka/OTP in urban was 3.33% (n=8) and in rural was 5.83% (n=14) without any significant difference in average number of days.

Table 3 shows prevalence of drinking alcohol among adolescents in urban was 2.08% (n=5) and in rural was 1.25% (n=3). There is statistically significant difference (t 5.28, p <0.0001) between mean age at first drink in urban [12.5 (±3.57)] and in rural [10.66 (±4.02)]. None of the adolescents in our study were involved in usage of any form of illegal drugs but in urban 4 adolescents denied answering this question. One adolescent in urban tried something to get high and 4 adolescents denied answering this question in urban.

Table 2: Behaviours associated with cigarette/beedi smoking and other tobacco products

Behaviours	Urban (n=240)	Rural (n=240)	P value
Proportion of adolescents who smoke	2.92% (n=7)	2.50% (n=6)	0.77*
Mean age at first smoke (SD)	14.28 (±1.57)	13.33 (±2.05)	< 0.0001#
Average no. of days smoked in last 30 days (SD)	13.25 (±12.27)	1.66 (±0.94)	< 0.0001#
Average no. of cigarette/ beedi smoked in last 30 days (SD)	2 (±0.71)	1 (0)	
Proportion of adolescents who chew tobacco/ gutka/OTP	3.33% (n=8)	5.83% (n=14)	0.19*
Average no. of days use tobacco/ gutka in last 30 days (SD)	8.75 (±12.27)	8.6 (±10.84)	0.88#

*Chisquare test; #t test

Table 3: Behaviours associated with alcohol and other drug use

Behaviours	Urban (n=240)	Rural (n=240)	P value
Proportion of adolescents who drink alcohol	2.08% (n=5)	1.25% (n=3)	0.47*
Mean age at first drink (SD)	12.5 (±3.57)	10.66 (±4.02)	< 0.0001#
Proportion of adolescents who denied answering above question	1.67% (n=4)	0 (0.00%)	
Proportion of adolescents who tried something to get high	0.42% (n=1)	0.00% (n=0)	0.47*
Proportion of adolescents who denied answering above question	1.67% (n=4)	0.00% (n=0)	

*Chisquare test; #t test

DISCUSSION

These results are in par with another study done by Radhakrishnan Jayakrishnan *et al* in Kerala, India given the result of overall prevalence of self-reported ever users of tobacco in the current academic year was 7.4% (95% CI 5.86–8.94). Cigarette smoking was the predominant habit among ever users (2.8%) followed by gutkha (2.2%), beedi smoking (1.3%) and betel quid chewing (1.2%).⁶

As many studies suggest prevalence of non-communicable diseases is high among adolescents specially girls as concluded in the study done by Swarnkar Madhusudan and by vivek verma.^{9,10} Hence it is important to trace the risk factors well in advance at the earliest. Gender, obesity, positive smoking status and lack of physical activity were identified as risk factors for hypertension in a study done by Nisha singh.¹¹

Study by J. Kishore among adolescents indicated smoking was present in 25.1%, of the urban village adolescents and in 48.7% of those residing in the rural village.⁷ Narainet *al* in the year 2011 did School based survey in urban area of Noida city among aged 11-19 years found out that prevalence of any kind of tobacco use was 11.2 per cent, 8.8 per cent were ever smokers (including current smokers), 4.6 per cent were ever tobacco chewers (including current chewers), 3.7 per cent were 'exclusive smokers' and 2.5 per cent were 'exclusive tobacco chewers'.⁸ Our results were in comparable with study done by Peeyush Kariwal showed 15.30% students tried smoking once in life time and 5.46% started smoking at the age less than 14 years. 0.82% were found doing heavy smoking.¹⁵

In contrast, a study J. Kishore indicated that there is a high prevalence of risk behaviour in both urban and rural adolescents. Consuming alcohol and

consuming *bhang* (cannabis) were present in 32.2% and 11.5% of the urban village adolescents and in 1.3% and 16.5% of those residing in the rural village, respectively.⁷

In a study done by Vishal, Non-smoking forms of tobacco like pan masala and gutkha, were more commonly used by students. The majorities of them are experimental users, but if not addressed right now will be potential regular users in the future.¹² Knowledge attitude and practice regarding tobacco and its uses is unsatisfactory among adolescents in the study done by Kirthinath Ballal.¹³

Tobacco use is still important risk behaviour among adolescent students as seen in the study done by monark j vyas.¹⁴

Alcohol use is also on the rise in India. Due to rapid changes in media exposure and lifestyle, alcohol drinking is becoming rampant among the youths. Although, health impacts of alcohol consumption are not as straightforward as that of tobacco smoking, there is enough evidence to suggest that heavy drinking leads to liver damage and other health problems, as well as a host of social, physical, emotional, and financial problems for the family. There is evidence that alcohol consumption and other substance abuse lead to increased sexual risk-taking.

Radhakrishnan Jayakrishnan *et al* titled Tobacco and Alcohol Use and the Impact of School Based Anti-tobacco Education for Knowledge Enhancement among Adolescent Students of Rural Kerala, India given the result of overall prevalence ever alcohol users was 5.6% (95% CI 4.25–6.95) which was in comparable with our study result.⁶

Contrasting results of study done by Ningombamet *al* in urban areas of Imphal, Manipur showed that 15.6 per cent of adolescents aged 15-19

year had ever used alcohol.¹⁶ A community based cross sectional study in rural areas of Andhra Pradesh by Kanguleet *al* in 2011 showed that 20.7 per cent of males aged 15-24 year were using alcohol alone; 22.2 per cent were using alcohol and tobacco together.¹⁷ Our results are in par with a study of health risk behaviour amongst 14-19 years adolescent students in urban area of district Jhansi by Peeyush Kariwal showing 19.95% had ever drink of alcohol and 4.64% had their first drink of alcohol at the age less than 14 years.¹⁵

Research done by Bhawana Pant indicates a need for early intervention, rather than dismiss these as a transitory experience.¹⁸

Overall prevalence found in our study is less in comparable to other studies. This difference is may be due to socioeconomic status and study setting.

CONCLUSION

As adolescence is a physiological stage in human growth and development it has been observed all the adolescents are more or less similar in behaviour despite of their different dwelling. Behaviours associated with cigarette/beedi smoking and other tobacco products are highly prevalent among adolescents which are seen more in urban. Alcohol and other drug use is also seen in few adolescents. Mean age at start of smoking and alcohol is as young as 13 and 10 years respectively.

Recommendations as Information Education Communication (IEC) about harmful effects of tobacco products and drinking alcohol are to be provided at all the adolescent contact places. Active involvement of people at all levels from policy-makers to implementers including Parents, Teachers, health care providers, local peer groups and NGO's should be emphasized for effectiveness of interventional programs directing towards adolescent's health.

REFERENCES:

1. India. Ministry of Home Affairs. New Delhi: Census Data. [Internet]. [cited 6 Oct 2014].2011. Available from: http://www.censusindia.gov.in/2011census/population_enumeration.aspx
2. A strategic approach to reproductive, maternal, newborn, child and adolescent health in India. MOHFW; 2013.pp 13-14.
3. Youth Risk Behavior Surveillance System: Overview2008 [Online] [19 October, 2015]. Available at www.cdc.gov/mmwr/PDF/ss/ss6304.pdf
4. National Centers for Chronic Disease Prevention and Health Promotion. YRBSS: Youth Risk Behavior Surveillance System. 2008a. [6 October, 2015]. Available at: <http://www.cdc.gov/HealthyYouth/yrbs/>
5. Lwanga SK, Lemeshow S. Sample size determination in health studies. A practical manual. Geneva. World Health Organisation. [online]1991. Part 1. [cited 2013 Apr 12] Available online from http://apps.who.int/iris/bitstream/10665/40062/1/9241544058_%28p1p22%29.pdf?u.
6. Jayakrishnan R,Geetha S, Kumara JK, Nair M, Thomas G, and Sebastian P. Tobacco and Alcohol Use and the Impact of School Based Antitobacco Education for Knowledge Enhancement among Adolescent Students of Rural Kerala, India. *Journal of Addiction* 2016; 2016:1-9.
7. Kishore J, Singh A, Grewal I, Singh S R, Roy K. Risk behaviour in an urban and a rural male adolescent population. *Nat Med J India*.1999; 12(3):p107.
8. Narain R, Sardana S, Gupta S, Sehgal A. Age at initiation & prevalence of tobacco use among school children in Noida, India: A cross-sectional questionnaire based survey. *Indian JMed Res* 2011; 133: 300-7.
9. Madhusudan S, Vaseem N B, Ashok K B, Monika R, Amita K. A Study of Blood Pressure Profile in School Going Adolescents of District Jaipur. *Nat J of Community Med*. April-June 2012; 3(2):242-246.
10. Vivek V, Singh S K. Prevalence of Hypertension in Gujarati School Going Children and Adolescents in Anand District. *Nat J of Community Med*. July – Sept 2012; 3(3):452-457.
11. Singh N, Patel S, Pal D K, Priya A.Prevalence of Hypertension and Associated Risk Factors among UrbanSchool Adolescents in Lady Bhore Catchment Area of Bhopal City. *Nat J of Community Med*.June 2017; 8(6):315-319.
12. Bathma V, Likhari S, Agarwal S, Mishra M, Shukla U. Tobacco use Among Adolescent: A Burning Issue in Bhopal City. *Nat J of Community Med*.Jan – Mar 2015; 6(1):103-107.
13. Ballal K, Kulkarni M, Agrawal A, Kamath A, Kumar M. Knowledge and Attitude Regarding Tobacco and its Use among Adolescent Students. *Nat J of Community Med*.June 2016; 7(6): 519-523.
14. Vyas M J, Patel A B. Prevalence of Tobacco Consumption and Associated Factors among Adolescent School Children of Ahmedabad *Nat J of Community Med*.Oct 2016 ;7(10) :802-806.
15. Kariwal P, Srivastav S, Singh A, Mathur B P. A study of health risk behaviour among 14-19 year adolescent students in urban areas of district Jhansi. *Indian J Community Med*.2011 June; 22(1): P39.
16. Ningombam S, Hutin Y, Murhekar MV. Prevalence and pattern of substance use among the higher secondary school students of Imphal, Manipur, India. *Natl Med J India* 2011; 24: 11-5.
17. Kangule D, Darbastwar M, Kokiwar P. A cross-sectional study of prevalence of substance use and its determinants among male tribal youths. *Int J Pharm Biomed Sci*2011; 2: 61-4.
18. Pant B, Vaish A, Sharma P, Davey A, Rahul Bansal4, Harinder Singh. Adolescence: The Dilemma of Transition. *Nat J of Community Med*.Jan – Mar 2013; 4(1):125-131.