

**PREVALENCE OF INTENTIONAL AND UNINTENTIONAL INJURIES AMONG ADOLESCENTS OF RURAL AND URBAN SHIVAMOGGA – A CROSS-SECTIONAL STUDY****Kanchana Nagendra<sup>1</sup>, Raghavendraswamy Koppad<sup>1</sup>**<sup>1</sup>Assistant Professor , Department of Community Medicine, SIMS, Shivamogga, Karnataka, India**Date of Submission** : 03-03-2018**Date of online Publication** : 15-04-2018**Date of Acceptance** : 17-02-2018**Date of Print Publication** : 30-06-2018**\*Author for correspondence:** Dr. Raghavendraswamy Koppad, Assistant Professor, Department of Community Medicine, SIMS, Shivamogga, Karnataka, India. E-Mail: rrk6633@gmail.com**Abstract**

**Introduction:** adolescents constitute 20.9% of the Indian population. The problems of adolescents are multi-dimensional in nature and require a holistic approach. **They** are particularly susceptible to high-risk behaviour. Hence, it is important to assess the risk behaviour possessed by the adolescent population. **Objectives:** to determine the prevalence of intentional and unintentional injuries 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 after informed consent using pre-tested semi-structured questionnaire and analyzed in epi info. **Results:** among bike riders in urban 50 (31.25%) wear helmet while driving whereas in rural only 33(25.98%) wear helmet while driving. In urban 46 (73.02%) never wear seat belt, 9 (14.29%) adolescents sometime wear seat belt and 8 (12.70%) adolescents always wear seat belt promptly whenever they drive car. In rural 51 (70.83%) never wear seat belt, 16 (22.22%) adolescents sometime wear seat belt and 5 (6.94%) adolescents always wear helmet promptly. 114 (7.50%) adolescents in urban claimed to involved in physical fight where in rural, 111 (46.25%) adolescents were involved in physical fight. **Conclusion:** There has been an increasing 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.

**Key-words:** adolescent health, health risk behaviour, intentional injury.**Introduction**

Adolescence Latin meaning of the word “*Adolescere*” is to grow, to mature. It is a period of transition from childhood to adulthood. They are no longer children, but yet, not adults. 20.9% of the Indian population consists of adolescents.<sup>1</sup>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.<sup>2</sup> 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 morbidity and mortality among youth and adults.<sup>3</sup> The tool classify 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 activity<sup>4</sup>. The process surrounding high-risk behaviours can be complex. Risk behaviour is defined as specific form of behaviour, which is proven to be

associated with increased susceptibility to a specific disease or ill-health.<sup>5</sup>These behaviours are often established during late adolescence. Hence, it is important to assess the risk behaviour possessed by the adolescent population. Problems in this age group are multi-dimensional and require a holistic approach. The findings will help to plan the interventions at earlier stages of life. Objective of this study was to assess some of the health risk behaviours which contribute to intentional and unintentional injuries like not wearing helmet and using mobile phone while driving, carrying weapons, involving in physical fight, bullying and suicidal tendencies among rural and urban adolescents.

**Material and Methods**

A descriptive community based cross-sectional study is selected at rural and urban field practice areas of SIMS Shivamogga. One ward and a sub-centre will be selected by simple random sampling, will form the primary sampling units. 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. Anticipated population prevalence 50%, the sample size comes to 193 in each urban and rural areas.<sup>6</sup> Considering 20% of nonresponse rate and after rounding off 240 subjects were included each in urban and rural areas. Data was collected 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. Epi info (Version 7) was used for performing the statistical analyses.

**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 (Table 1).

**Table 1. Age and sex wise distribution of adolescents.**

PARTICULARS	URBAN	RURAL
<b>AGE</b>		
Early (10-14yrs)	64(27%)	87(36%)
Late (15-19yrs)	176(73%)	153(64%)
<b>SEX</b>		
Boys	148(61.6%)	114(47.5%)
Girls	92(38.3%)	127(52.9%)

In urban, 160 (66.67%) adolescents ride bike compared to 127 (52.92%) adolescents in rural. Among all 287 adolescents who ride bike only 83 (28.92%) adolescents use helmet. In that 50 (31.25%) bike riders are from urban who wear helmet whereas 33 (25.98%) were from rural. This study shows almost half of the adolescents both in urban and rural are involved in physical fight in past 30 days (Table 2).

In urban, 104 (43.33%) adolescents were bullied by their peer one or the other time in comparison to rural [71 (29.58%)]. This difference among rural and urban is statistically highly significant (Chi-Square-12.203, p-0.0022). In urban, 17 (7.08%) adolescents thought of committing suicide whereas 7 (2.92%) thought the same in rural. This difference is statistically significant (Chi square-4.39, p < 0.05). In urban, 10 (4.17%) adolescents have planned a suicide attempt and 6 (2.50%) have tried to attempt suicide.

**Table 2. Prevalence of Risk Behaviours among adolescents.**

Risk Behaviours	Urban N = 240	Rural N = 240	Significance
<b>Wearing Helmet</b>			
Yes	50 (31.25%)	33(25.98%)	X <sup>2</sup> =0.955 p = 0.32
No	110(68.75%)	94(74.02%)	
<b>Mobile Usage While Riding</b>			
Never	221 (92.08%)	220 (91.67%)	X <sup>2</sup> =0.032 p = 0.98
Sometimes	16 (6.67%)	17 (7.08%)	
Always	3 (1.25%)	3 (1.25%)	
<b>Carried Weapon</b>			
Yes	3 (1.25%)	1 (0.42%)	X <sup>2</sup> =2.002 p = 0.36
No	237 (98.75%)	238 (99.17%)	
Can't Tell	0 (0.00%)	1 (0.42%)	
<b>Physical Fight</b>			
Yes	114 (47.50%)	111 (46.25%)	X <sup>2</sup> =3.04 p = 0.21
No	126 (52.50%)	126 (52.50%)	
Can't Tell	0 (0.00%),	3 (1.25%)	
<b>Got Bullied</b>			
Yes	104 (43.33%)	71 (29.58%)	X <sup>2</sup> =12.203 p = 0.0022 <b>significant</b>
No	136 (56.67%)	166 (69.17%)	
Can't Tell	0 (0.00%),	3 (1.25%)	
<b>Suicidal Thought</b>			
Yes	17 (7.08%)	7 (2.92%)	X <sup>2</sup> =4.39 p = 0.036 <b>significant</b>
No	223 (92.92%)	233 (97.08%)	
<b>Suicide Attempt</b>			
Can't Tell	0(0.00%)	2(0.83%)	X <sup>2</sup> = 5.45 p = 0.06
Tried	6(2.5%)	1(0.41%)	
Planned	10(4.16%)	4(1.66%)	

**Discussion**

The low prevalence of helmet usage is may be because study was conducted before government made wearing helmet mandatory. These findings are similar to the study done in Kerala by Sreedharan J *et al* where only 31.4% used a helmet.<sup>7</sup> There is not much of a difference between urban and rural adolescents with regards to using mobile while riding but the usage of mobile should be strictly avoided by adolescents while riding. In urban, 3 (1.25%) of adolescents carried harmful weapons to the school or college purpose other than playing in last thirty days (Table 2). This result is in contrast with a study by J. Kishore on risk behaviour in an urban and a rural male adolescent population 12.5% of urban and 6.6% of rural

adolescents were in possession of assault weapons such as iron rods, chains or knives sometime in the 30 days prior to the interview and another study among school and college-going adolescents in South Delhi by Rahul Sharma 65 (11.8%) reported having carried a weapon in past 30 days. These contrasting results are may be due to the difference in study setting.<sup>8,9</sup>

These results are similar to the study on risk behaviour in adolescent population by J. Kishore showed About 66.8% of urban and 51.3% of rural adolescents had indulged in physical fights.<sup>8</sup>This increased trend of involvement in physical fight is justified by studies showing like results. A Comparison study between Urban and Rural Schoolstudents in West Bengal by Amrita Samanta *et al* showed 53.8% vs. 11.6% involvement in physical fights among urban and rural adolescents.<sup>10</sup> Almost one in every two boys (49.1%) reported being involved in a physical fight in past 12 months in a study among school and college-going adolescents of South Delhi by Rahul Sharma.<sup>9</sup>

Our results are in comparable with results obtained in comparison study between urban and rural schoolstudents in West Bengal by Amrita Samanta *et al* showed prevalence of bullying is 46.4% in urban vs. 17% in rural. These numbers must seek attention as victims of bullying have increased stress and a reduced ability to concentrate and are at increased risk for substance abuse, aggressive behaviour, and suicidal attempts.<sup>10</sup>

These kind of results were seen in a recent study, published in Lancet, and based extensively on Indian data has indicated that 13% of suicides in the country occur in the age group of 15-29 years and also in a study done about Suicidal behaviour amongst adolescent students in south Delhi by Rahul Sharma, Vijay L. Grover, Sanjay Chaturvedi concluded that About 15.8% reported having thought of attempting suicide, while 28 (5.1%) had actually attempted suicide.<sup>11</sup>

**Conclusion And Recommendations:**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. The low prevalence of helmet usage and high prevalence of physical fight, bullying and suicidal tendencies have been seen. There is a need to increase the use of wearing helmet promptly and to follow traffic rules. Behaviour Change Communication (BCC) is needed with regards to psycho-social disorders such as bullying and suicidal thoughts. 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.

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## References

1. Govt. of 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](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: 13-14.
3. Youth Risk Behaviour Surveillance System: Overview2008 [Online] [19 October, 2015]. Available at:[www.cdc.gov/mmwr/PDF/ss/ss6304.pdf](http://www.cdc.gov/mmwr/PDF/ss/ss6304.pdf)
4. National Centers for Chronic Disease Prevention and Health Promotion. YRBSS: Youth Risk Behaviour Surveillance System. 2008a. [6 October, 2015]. Available at: <http://www.cdc.gov/HealthyYouth/yrbs/>
5. *Risk Behaviours in Youth files-Maria Rosario T. de Guzman, Lyndsey A. Pohlmeier.* High-Risk Behaviours in Youth. **University of Nebraska Lincoln Extension Publications 2014** [serial online] 2012 [cited 2014 Aug 06]. Available from: URL:<file:///I:/%20ref/Publication%20%20HighRisk%20Behaviors%20in%20Youth.hm>.
6. 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?ua=1](http://apps.who.int/iris/bitstream/10665/40062/1/9241544058_28p1p22%29.pdf?ua=1).
7. Jayadevan Sreedharan, JayakumaryMuttappillymalil,BinooDivakaran,Jeesha C Haran. Determinants of safety helmet use among motorcyclistsin Kerala, India P J Inj Violence Res 2010 Jan; 2(1): 49-54.
8. 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):107.
9. Sharma R, Vijay L. Grover, Sanjay Chaturvedi. Suicidal behavior amongst adolescent students in south Delhi. Indian J Psychiatry. Jan-Mar 2008; 50(1): 30-35.
10. Samanta A, Shuvankar Mukherjee, Santanu Ghosh, AparajitaDasgupta. Mental Health, Protective Factors and Violence among Male Adolescents: A Comparison between Urban and Rural School Students in West Bengal. Indian Journal of Public Health April-June, 2012; 56: 156-160.
11. Sharma R, Grover V L, Chaturvedi S. Risk behaviours related to inter-personal violence among school and college-going adolescents in South Delhi. Indian J Community Med.2008 April; 33(2):85.

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