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## **A Comparative Study of Health Behaviours among School-Going Adolescents from Urban and Rural Schools in Belagavi**

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### **Abstract**

**Background/Objectives:** Adolescence is a crucial period for adopting behaviours that significantly influence lifelong health outcomes. This study aimed to compare the health behaviours, specifically nutrition, sleep patterns, physical activity, substance use, and awareness of sexual health, of school-going adolescents from urban and rural areas in Belagavi, Karnataka. **Methods:** A descriptive cross-sectional survey was conducted among 250 adolescents (125 urban, 125 rural), aged 13–16 years, selected through multi-stage random sampling from government high schools. Data were collected using a validated and reliable structured questionnaire covering various domains of health behaviour. Statistical analyses included Chi-square tests, t-tests, and Pearson correlation coefficients to evaluate differences and associations. **Results:** Statistically significant

differences were observed between urban and rural adolescents across several domains. Urban students showed better awareness of sexual education and more structured sleep patterns ( $p<0.05$ ). Rural adolescents had higher physical activity levels, but were more likely to be influenced by substance use. Significant correlations were found among nutritional status, sleep quality, physical activity, and awareness of sexual health. Factors such as parental education, family type, and socioeconomic status were also associated with health behaviours. **Conclusion:** Health behaviours of adolescents varied significantly between urban and rural settings, underlining the need for location-specific health promotion strategies. Strengthening school-based health education programs and involving families could contribute to improved adolescent health outcomes across both regions.

**Keywords:** Health behaviours, School-going, Adolescents, Urban-rural comparison.

## **Introduction**

The term adolescence, meaning “to emerge” or “achieve identity,” is a relatively new concept, especially in developmental thinking. The origin of the term is from the Latin word *adolescere*, meaning “to grow, to mature”. However, a universally accepted definition of the concept has not been established<sup>1</sup>. Although commonly understood as the transitional phase between childhood and adulthood, a universally accepted definition remains elusive<sup>1</sup>. This period is distinguished by a rapid pace of physical growth, sexual maturation, emerging social and economic independence, identity formation, and the development of abstract reasoning skills. Nutrition plays a pivotal role during adolescence, as dietary behaviours are shaped by a multitude of influences—including peer pressure, parental role modeling, food accessibility, personal and cultural preferences, affordability, convenience, mass media, and body image concerns<sup>2</sup>. A study involving 3,000 adolescents revealed that 79% cited television and movies as their

primary sources of health-related information, compared to only 11–12% who reported learning from healthcare professionals or educators. Unfortunately, media-driven content often provides misleading or contradictory messages, posing a risk of poor decision-making that could significantly impact their well-being or even jeopardize their lives<sup>3</sup>.

Nutrition may be defined as the science of food and its relationship to health. Nutrition plays a vital role in growth, development, and maintenance of the human body. Food encompasses not just nutrients like proteins, fats, vitamins, and minerals, but also reflects cultural identity and security. Throughout history, hunger and malnutrition have remained global challenges, often threatening peace and stability<sup>4</sup>. Physical activity is the bodily movement produced by skeletal muscle that requires energy expenditure and is a fundamental means of improving people's physical and mental health. The physical activity reduces the risks of many non-communicable diseases and benefits society by increasing social interaction and community engagement. It is not just a public health issue; it also promotes the well-being of communities and the protection of the environment and comprises an investment in future generations. It includes exercise as well as other activities which involve bodily movement and are done as part of playing, working, active transportation, house chores, and recreational activities<sup>5</sup>. Every living creature needs to sleep. It is the primary activity of the brain during early development. Circadian rhythms, or the sleep-wake cycle, are regulated by light and dark, and these rhythms take time to develop, resulting in the irregular sleep schedules of newborns. The rhythms begin to develop at about six weeks, and by three to six months, most infants have a regular sleep-wake cycle. By the age of two, most children have spent more time asleep than awake, and overall, a child will spend 40 percent of his or her childhood asleep. Sleep is especially important for children as it directly impacts mental and physical development<sup>6</sup>. According to the WHO, substance abuse—particularly among adolescents—has emerged as a critical global health issue, impacting individuals, families, and society at large<sup>7</sup>. Vulnerability increases in the presence of stress, lack of social support, and socioeconomic or cultural challenges. Alcohol misuse, in particular, remains a major public health concern worldwide<sup>7</sup>. Adolescent sexual behaviour is also undergoing significant change, influenced by increased media exposure, easy access to information, and shifts in traditional family structures. However, data on this topic remain limited, and the reliability of existing research methods is often questionable<sup>8</sup>.

The WHO fact sheet on adolescents in India states that approximately 10% of girls and up to 30% of boys engage in premarital sex, with many boys reporting encounters with sex workers. While condom awareness is relatively high (70–90%), actual usage remains low at 34–64%, and only 8% of adolescents report using any reliable form of contraception. A minimal proportion (1.3–1.4%) reported using condoms or oral contraceptives<sup>9</sup>. Promoting adolescent health requires a multi-sectoral approach. Healthcare providers play a key role, alongside the active involvement of parents, caregivers, and community leaders to ensure sustained support and guidance<sup>10</sup>.

**Need For Study:** Adolescence is defined by characteristic behaviour that includes high levels of risk taking, exploration, novelty, sensation seeking, social interaction, and play behavior<sup>11</sup>. Adolescence is the transitional period between puberty and adulthood in human development, extending mainly over the teen years and terminating legally when the age of majority is reached; youth<sup>12</sup>. Disruptive behaviour students are in every class room across the nation. Teachers often seek support, guidance, and strategies to navigate the challenges they face. However, it is vital to recognize that they serve as a beacon of hope for many children and hold a profoundly influential role in their lives. A teacher's words and actions can leave a lasting impact on a child's development and future.<sup>13</sup>. Success in school requires the ability to complete tasks, stay organized, build positive relationships with peers and adults, maintain a confident attitude toward learning, follow rules, and consistently put forth one's best effort. To understand children's behaviour, it is essential to first understand their needs. Beyond physical necessities, children also require opportunities for enjoyment, self-expression, autonomy, a sense of purpose, and belonging.<sup>14</sup>.

Adolescence may be divided into three developmental stages based on physical, psychological, and social changes; early adolescence- 10 to 13 years, middle adolescence- 14 to 16 years, late adolescence- 17 to 19 years<sup>15</sup>.

Adolescents are a vulnerable population, facing various health-related risks that necessitate careful ethical consideration in both research and clinical settings. This study utilized an integrative literature review methodology, focusing on publications from the past fifteen years that addressed the topic of "bioethical concerns related to adolescent vulnerability." Nine studies met the inclusion criteria and were categorized into three thematic areas: (1) adolescent cognitive and psychological capacity to consent to research participation; (2) ethical issues surrounding medical decision-making; and (3) the complexities of adolescent sexuality. The review concluded that no universally applicable ethical consensus exists for all scenarios involving adolescents in research and clinical contexts<sup>1</sup>.

Nutrition plays a vital role during adolescence, a phase marked by rapid growth and development. As adolescents begin to take greater responsibility for their health-related behaviours, including dietary choices, ensuring adequate nutrition becomes crucial. However, large-scale surveys highlight stark regional and rural-urban disparities in health outcomes, with rural populations disproportionately affected by mortality, morbidity, and undernutrition. Despite the critical importance of adolescent nutrition for the future well-being of any society, this age group has often been overlooked in health interventions, largely due to the misconception that they are less vulnerable to illness than young children or older adults<sup>17</sup>.

The first global analysis of adolescent physical inactivity highlights an urgent need to improve activity levels among youth aged 11 to 17. Published in *The Lancet Child & Adolescent Health* by WHO researchers, the study reveals that over 80% of school-going adolescents worldwide fail to meet the recommended minimum of one hour of daily physical activity—85% among girls and 78% among boys. Engaging in regular physical activity during adolescence offers significant health benefits, including enhanced

cardiorespiratory and muscular fitness, better bone and metabolic health, healthy weight maintenance, and improved cognitive function and social development. Notably, many of these benefits extend into adulthood<sup>18</sup>.

Sleep problem usually entails a sleep pattern that is unsatisfactory or cause for concern to the parent, child, or physician.

Children commonly present to primary care physicians or paediatricians with one of three types of sleep-related issues: difficulties in initiating and maintaining sleep (dyssomnias), excessive daytime sleepiness (hypersomnia), or abnormal behaviours during sleep (parasomnias). Despite sleep occupying roughly one-third of a person's life, sleep disturbances in children often go unrecognized by healthcare providers.

At 12 months of age, children typically have the earliest bedtimes and longest sleep durations. However, rise times, total nocturnal sleep, and sleep end times show little variation across early age groups. Actigraphic studies reveal that children between 1 and 5 years old average 8.7 hours of sleep per night. Generally, children receive about 10 hours of nightly sleep throughout childhood. This amount declines during adolescence, not primarily due to biological changes, but rather socio-cultural influences such as academic pressure and lifestyle habits. Laboratory studies, which eliminate external time cues, show that adolescents naturally require about 9 hours of sleep. In real-world settings, especially during the school year, most teenagers fall short of this, leading to a persistent state of sleep debt<sup>19</sup>.

Most adolescent illness and mortality stem from risk behaviours that fall into four main categories: use of tobacco, alcohol, and drugs; unhealthy dietary habits; insufficient physical activity; and risky sexual behaviours<sup>20,21</sup>. Many of these behaviours begin during adolescence and have both immediate and long-term health consequences. They are major contributors to leading causes of death and disease in this age group, including suicide attempts, accidental injuries, complications from unprotected sex, substance-related conditions, and issues related to overweight and obesity<sup>22</sup>.

**Operational Definitions:** The following definitions are used by the investigator.

- Health behaviour: Health behaviour refers to nutrition, physical activity, and sleeping patterns of adolescents.
- Adolescents: Adolescents refer to the subjects between 10 – 16 years of age selected from urban and rural schools in Belagavi.
- Urban school: Urban school refers to the school located in an urban area in Belagavi.

- Rural school: Rural school refers to the school located in a rural area in Belagavi.

## **Methods**

The detailed methodology has been explained with the following elements: Research approach, Research design, Variables under study, Research setting, Population, Sample and sampling technique, Development and description of the tool, Pilot study, Procedure for data collection, and plan for data analysis.

**Research Approach:** The research approach is the overall plan for how to obtain answers to the questions being studied and how to handle some of the difficulties encountered during the research process. A descriptive research approach can be described as a formal process adopted to observe, describe, and document aspects of a situation as it naturally occurs, and sometimes, to serve as a starting point for hypothesis generation or theory development.

**Research Design:** The survey approach is a non-experimental study in which the researcher investigates a group of people or a community. This design will facilitate the identification of many Interrelationships in a situation in a short period of time. No attempt is made to control or manipulate the situation.

**Research setting:** The study was done in a selected Government high school (Kaktives road) and Government high school (Koadoli) of Belagavi city, Karnataka.

**Population:** In this study, the population refers to adolescents (13-16 years) attending urban and rural schools in Belagavi.

**Sample:** The children who were studying in the 8<sup>th</sup>, 9<sup>th</sup>, and 10<sup>th</sup> standards were chosen.

**Sample size and sampling techniques:** In this study, the sample comprises 250 adolescents (125 from urban and 125 from rural areas) attending high schools in both urban and rural areas in Belagavi. In this study sample will be selected by using multi-stage random sampling.

**Stage 1:** - In the first stage, One urban school and one rural school were selected using simple random sampling from the list of urban and rural schools.

**Stage 2:** - From the urban and rural schools, one section from each 8th, 9th, and 10th standard was selected randomly.

**Stage 3:** - From the selected sections of 8th, 9th, and 10th, 41 students from the 8<sup>th</sup> section and 42 students from each 9<sup>th</sup> and 10<sup>th</sup> section were selected by disproportionate stratified random sampling.

### **Criteria for selection of samples**

#### **Inclusion criteria:**

- Adolescents who were attending selected urban and rural schools in Belagavi.
- Adolescents who were between the ages of 13 and 16 years.

#### **Exclusion criteria:**

- Those who have not shown interest in participation.
- Adolescents who are sick on the day of data collection.

**Data collection tool and technique:** Data collection instruments are the procedures or instruments used by the researcher to observe or measure the key variable in the research problem. A structured questionnaire was used to collect the data.

**Development of the Tool:** In the present study, a tool was developed considering the following concepts. It includes:

1. Literature review
2. Validity of the tool

3. Pre-testing
4. Reliability check

**Tool Description:**

SECTION 1: It consists of socio-demographics

SECTION 2: It consists of a total of 46 structured multiple-choice questions.

**Tool Validity:** The Tool was sent to 8 experts from the Department of Child Health Nursing for validation. Suggestions from all the experts were taken into consideration, and necessary modifications were made.



**Reliability:** After calculation by using the split-half method. Reliability was 0.72

**Pilot Study:** It was carried out @ K.S.R.R High School, Nehru Nagar, Belagavi, Karnataka, from 18/02/2021 to 23//03/2021 after obtaining permission from the Head master of the school. A preliminary exam was conducted on 25 children of KSSR high school who are studying in the 8th, 9th, and 10th standards using the structured knowledge questionnaire. Results were feasible; hence, the main study was conducted.

**Data Collection Procedure:** Formal permission and ethical clearance were received by the institutional ethics committee, DDPI of Belagavi city, and Principals of selected high schools of Belagavi city. The steps used for data collection are as follows:

STEP 1: The investigator obtained formal permission from the concerned authority.

STEP 2: Selection of sample (children who are studying in 8<sup>th</sup>, 9<sup>th</sup>, and 10<sup>th</sup> STD)

STEP 3: Self -Self-introduction was done by the investigator

STEP 4: The informed consent was obtained from each participant

STEP 5: A Structured questionnaire was administered to the students to assess the health behaviour of adolescents

**Analysis of Data:** The plans for data analysis are as follows

- Data organized based on objectives
- The master sheet was prepared
- Tabulation of data in terms of frequency, percentage, and differences
- The hypothesis was tested by a paired t-test
- Chi-square test for consistency table was used

## Results

### Objectives of the study:

- To determine the health behaviours of school-going adolescents at selected urban and rural schools in Belagavi.
- To compare the health behaviour of adolescents from schools in Belagavi.
- To find the association between the health behaviour of adolescents attending urban and rural schools in Belagavi.

### Organization and Presentation of Data Analysis:

**Section 1:** Demographic characteristics.

**Section 2:** Comparison of health behaviour of adolescents with nutritional status, sleep pattern, physical activity, substance abuse, and sexual education of urban and rural school-going children.

**Section 3:** Association between the health behaviours of adolescents attending urban and rural schools and health behaviours.

### SECTION 1: DEMOGRAPHIC CHARACTERISTICS

Table 1: Distribution of school-going adolescents of urban and rural schools by years of study

Year of study	Rural	%	Urban	%	Total	%	$\chi^2$	P-value
8th class	41	32.80	41	32.80	82	32.80	0.0000	1.0000
9th class	42	33.60	42	33.60	84	33.60		
10th class	42	33.60	42	33.60	84	33.60		
Total	125	100.00	125	100.00	250	100.00		

Table 1: Out of 250 students, an equal number of students were found in rural and urban areas, 42 (33.60%), they belonged to the 9th and 10th classes, followed by the 8th class, 41 (32.80%). ( $\chi^2$ : 0.000) (P: 1.000)

Graph:1

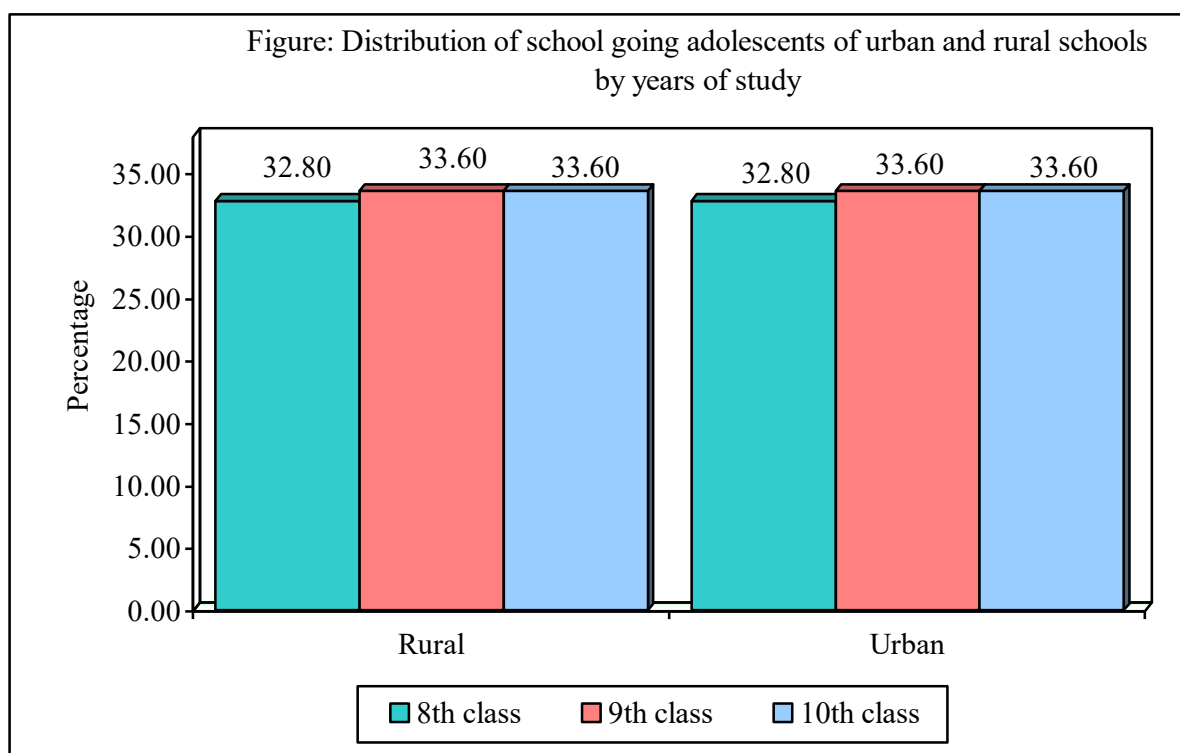


Table 2: Distribution of school-going adolescents of urban and rural schools by age groups

Age groups	Rural	%	Urban	%	Total	%	$\chi^2$	P-value
13 - 14yrs	30	24.00	27	21.60	57	22.80	0.6980	0.7060
14- 15yrs	36	28.80	42	33.60	78	31.20		
15- 16yrs	59	47.20	56	44.80	115	46.00		
Total	125	100.00	125	100.00	250	100.00		

Table 2 showed that out of 125 rural adolescents in which a maximum of 59 (47.20%) belongs to the age group 15-16 year and minimum of 30 (24.00%) were belongs to 13-14 year of age followed by 36 (28.80%) 14-15 years of age as compared in urban adolescents' maximum 56 (44.80%) were belongs to 15-16 year of age and minimum of 27 (21.60%) were belongs to 13-14 years of age followed by 42 (33.60%). ( $\chi^2$ : 0.6980) (P: 0.7060).

Graph 2:

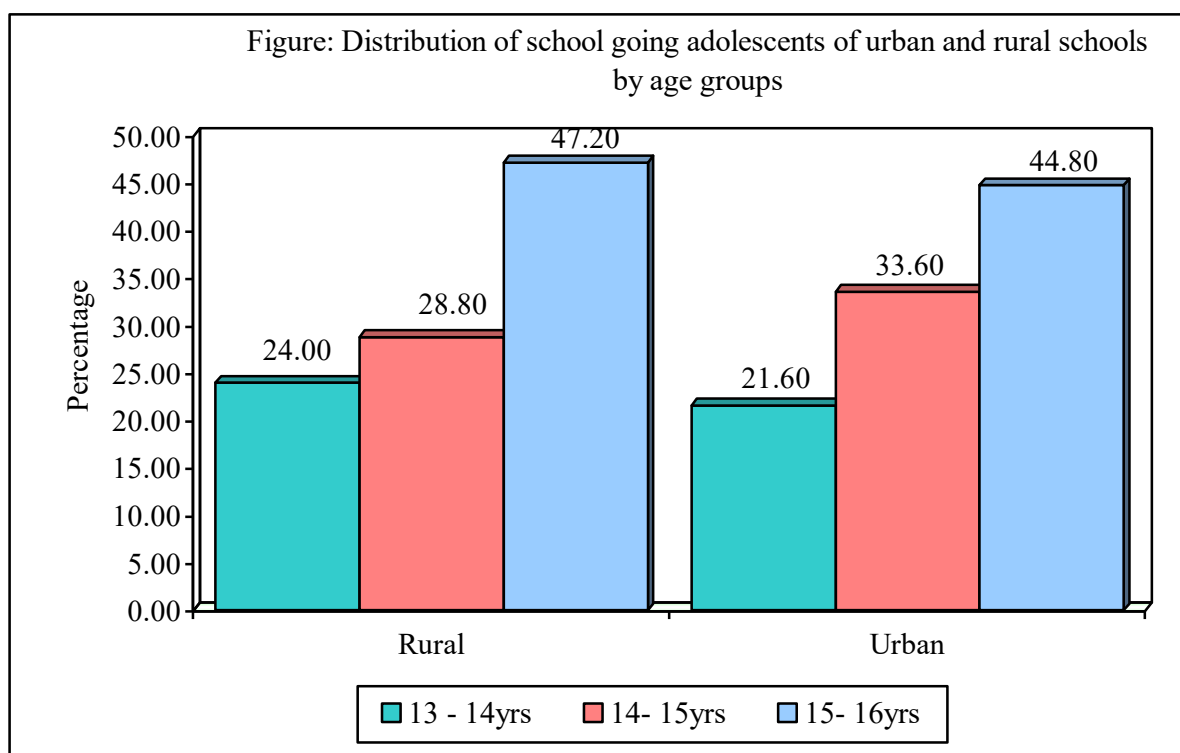


Table 3: Distribution of school-going adolescents of urban and rural schools by gender

Gender	Rural	%	Urban	%	Total	%	$\chi^2$	P-value
Male	63	50.40	63	50.40	126	50.40	0.0000	1.0000
Female	62	49.60	62	49.60	124	49.60		
Total	125	100.00	125	100.00	250	100.00		

Table 3 revealed that an equal number of students, 63 (50.40%), were found in rural and urban schools, whereas female students were equal in number, 62 (49.60%), in rural and urban schools. ( $\chi^2$ :0.000) (P: 1.000).

Graph:3

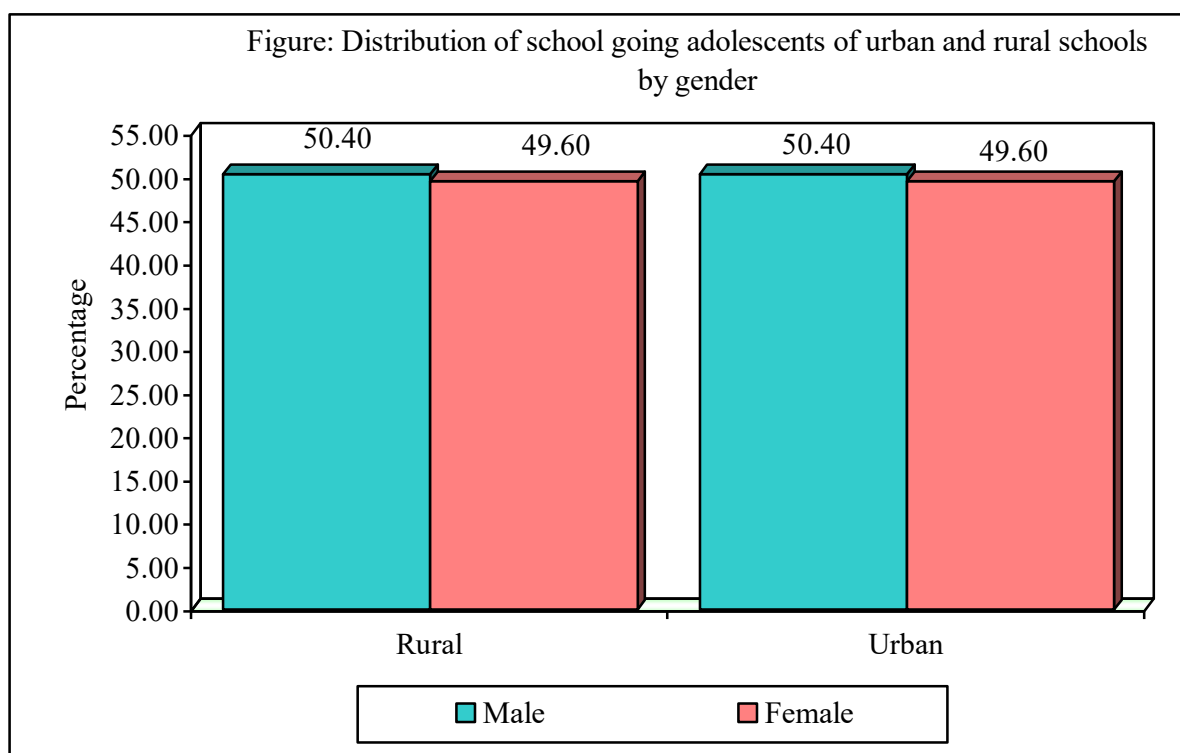


Table 4: Distribution of school-going adolescents of urban and rural schools by religion

Religions	Rural	%	Urban	%	Total	%	$\chi^2$	P-value
Hindu	83	66.40	95	76.00	178	71.20	6.9620	0.0730
Muslim	23	18.40	22	17.60	45	18.00		
Christian	15	12.00	8	6.40	23	9.20		
Others specify	4	3.20	0	0.00	4	1.60		
Total	125	100.00	125	100.00	250	100.00		

Table 4 showed that out of 125 students maximum of the students in rural 83 (66.40%) were belongs to Hindu religion and minimum was 4 (3.20%) belongs to other specify followed by others and in urban area out of 125 students maximum 95 (76.00%) were belongs to Hindu religion and minimum was 0 (0.00%) belongs to other specify followed by others. ( $\chi^2$ : 6.9620) (P: 0.0730)

Graph 4:

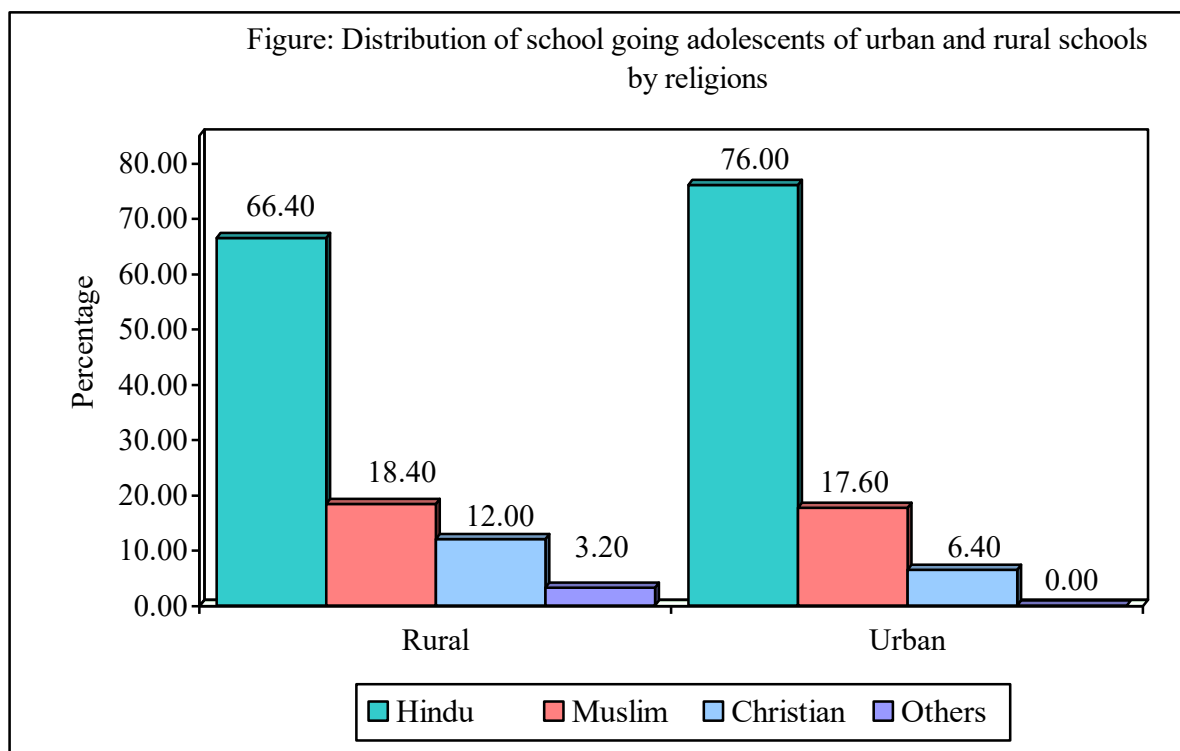


Table 5: Distribution of school-going adolescents of urban and rural schools by the Education status of the mother

Education status mother	Rural	%	Urban	%	Total	%	$\chi^2$	P-value
Illiterate	47	37.60	50	40.00	97	38.80	2.1080	0.7160
Primary	30	24.00	30	24.00	60	24.00		
Secondary	9	7.20	9	7.20	18	7.20		
Higher secondary	0	0.00	0	0.00	0	0.00		
Graduate	6	4.80	2	1.60	8	3.20		
Postgraduate	33	26.40	34	27.20	67	26.80		
Total	125	100.0	125	100.0	250	100.0		

Table 5 showed that maximum education status of mother among 125 students in rural 47 (37.60%) were belonged to illiterate and minimum was 0 (0.00%) were belonged to higher secondary followed by others when compared to urban maximum education status of mother among 125 adolescents 50(40.00%) were belonged to illiterate and minimum was 0 (0.00%) were belonged to higher secondary followed by others. ( $\chi^2$ : 2.1080) (P: 0.716).

Graph 5:

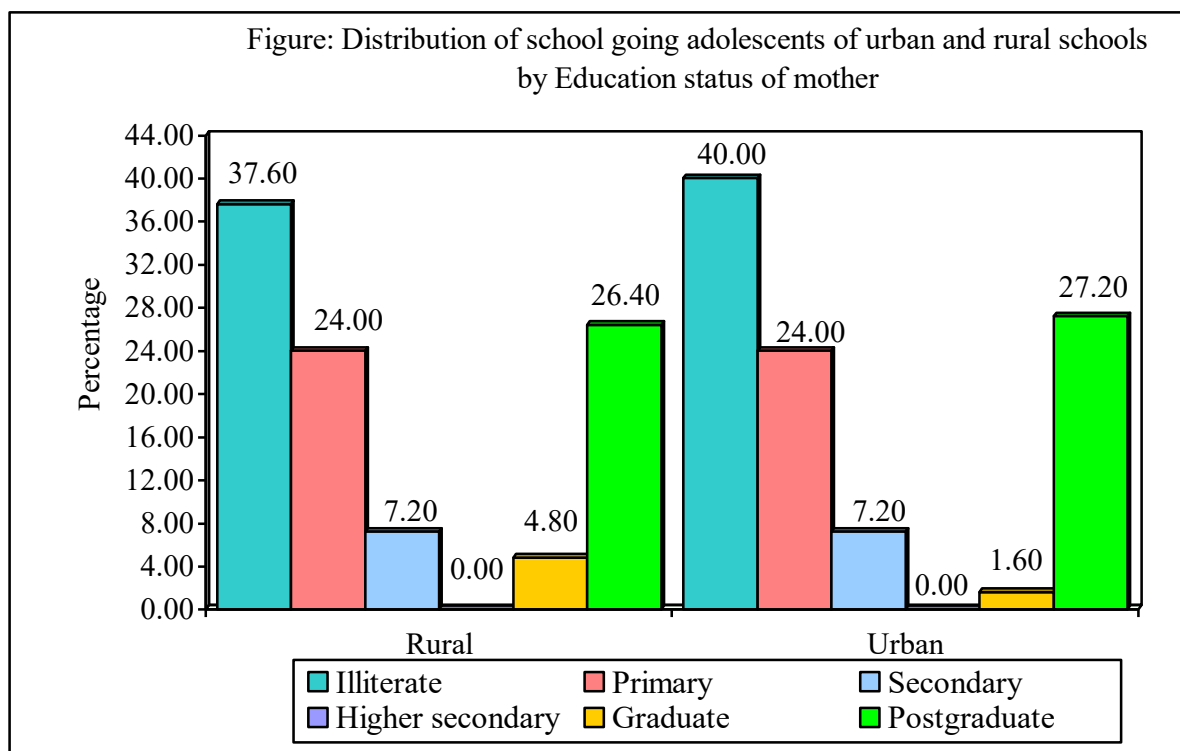


Table 6: Distribution of school going adolescents of urban and rural schools by Education status of father

Education status father	Rural	%	Urban	%	Total	%	$\chi^2$	P-value
Illiterate	33	26.40	35	28.00	68	27.20	1.2290	0.8730
Primary	42	33.60	47	37.60	89	35.60		
Secondary	18	14.40	18	14.40	36	14.40		
Higher secondary	7	5.60	5	4.00	12	4.80		
Graduate	0	0.00	0	0.00	0	0.00		
Postgraduate	25	20.00	20	16.00	45	18.00		
Total	125	100.00	125	100.00	250	100.00		

Table 6 showed that maximum education status of father among 125 students in rural 42 (33.60%) were belonged to primary and minimum was 0 (0.00%) were belonged to graduate followed by others when compared to urban maximum education status of father among 125 adolescents 47(37.60%) were belonged to primary and minimum was 0 (0.00%) were belonged to graduate followed by others. (  $\chi^2$ : 1.2290) (P: 0.8730).

Graph 6:

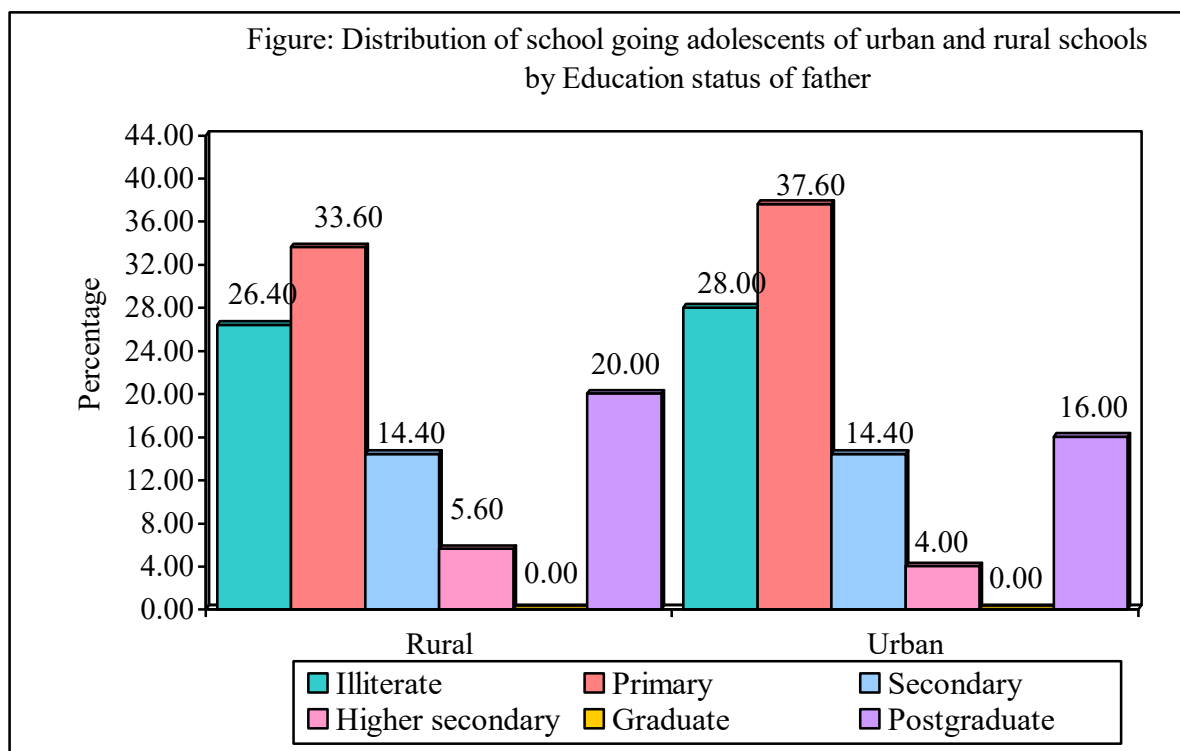


Table 7: Distribution of school-going adolescents of urban and rural schools by Occupation of father

Occupation of the father	Rural	%	Urban	%	Total	%	$\chi^2$	P-value
Government service	1	0.80	0	0.00	1	0.40	8.4450	0.1330
Private service	3	2.40	42	33.60	45	18.00		
Farmer	33	26.40	0	0.00	33	13.20		
Landless labourer	47	37.60	53	42.40	100	40.00		
Unemployed	1	0.80	2	1.60	3	1.20		
Retired	40	32.00	28	22.40	68	27.20		
Total	125	100.00	125	100	250	100		

Table 7 showed that maximum occupation of father among 125 students in rural 47 (37.60%) were belonged to landless labourer and minimum was 1 (0.80%) were belonged to government service and unemployed followed by others when compared to urban maximum occupation of father among 125 adolescents 53(42.40%) were belonged to landless labourer and minimum was 0 (0.00%) were belonged to government services followed by others. ( $\chi^2$ : 8.4450) (P: 0.1330).



Graph 7:

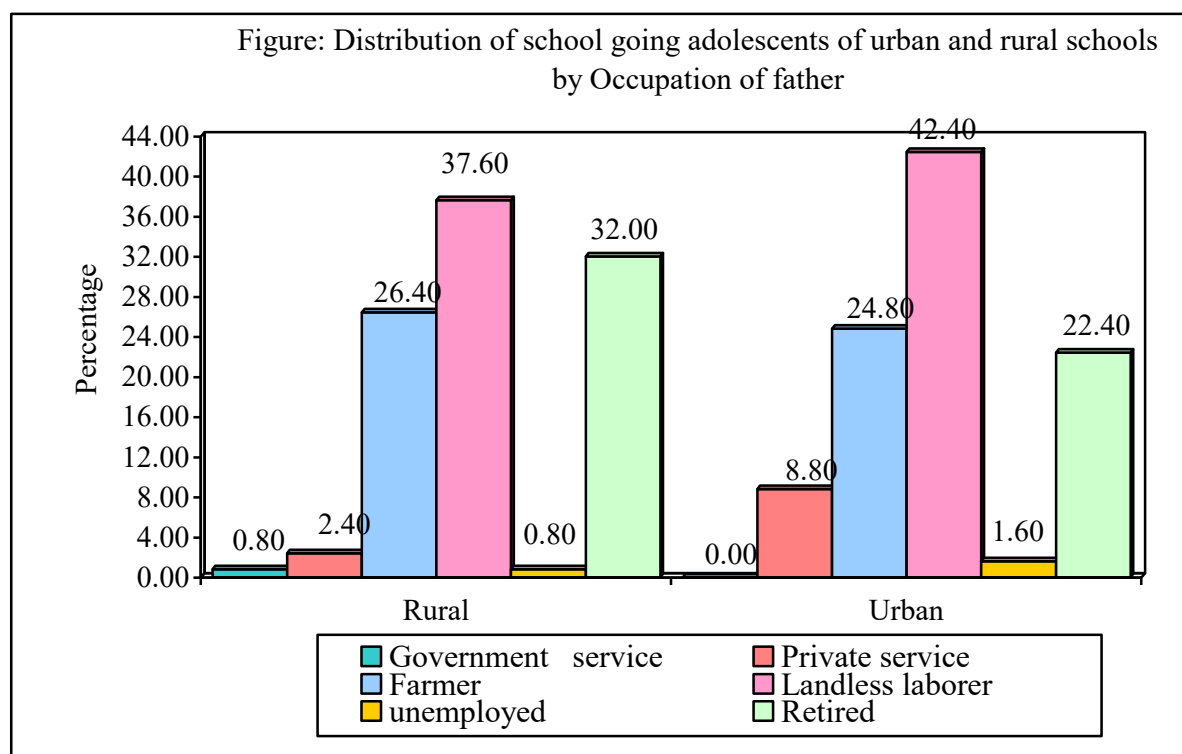


Table 8: Distribution of school going adolescents of urban and rural schools by Occupation of mother

Occupation of mother	Rural	%	Urban	%	Total	%	$\chi^2$	P-value
Government service	5	4.00	5	4.00	10	4.00	3.8480	0.5710
Private service	26	20.80	20	16.00	46	18.40		
Landless labourer	46	36.80	58	46.40	104	41.60		
Unemployed	38	30.40	37	29.60	75	30.00		
Retired	10	8.00	5	4.00	15	6.00		
Total	125	100.0	125	100.0	250	100.0		

Table 8 showed that maximum occupation of mother among 125 students in rural 46(36.80%) were belonged to landless labourer and minimum was 5 (4.00%) were belonged to government service followed by others when compared to urban maximum occupation of mother among 125 adolescents 58(46.40%) were belonged to landless labourer and minimum was 5 (4.00%) were belonged to government services and retired followed by others. ( $\chi^2$ :3.8480) (P: 0.5710).

Graph 8:

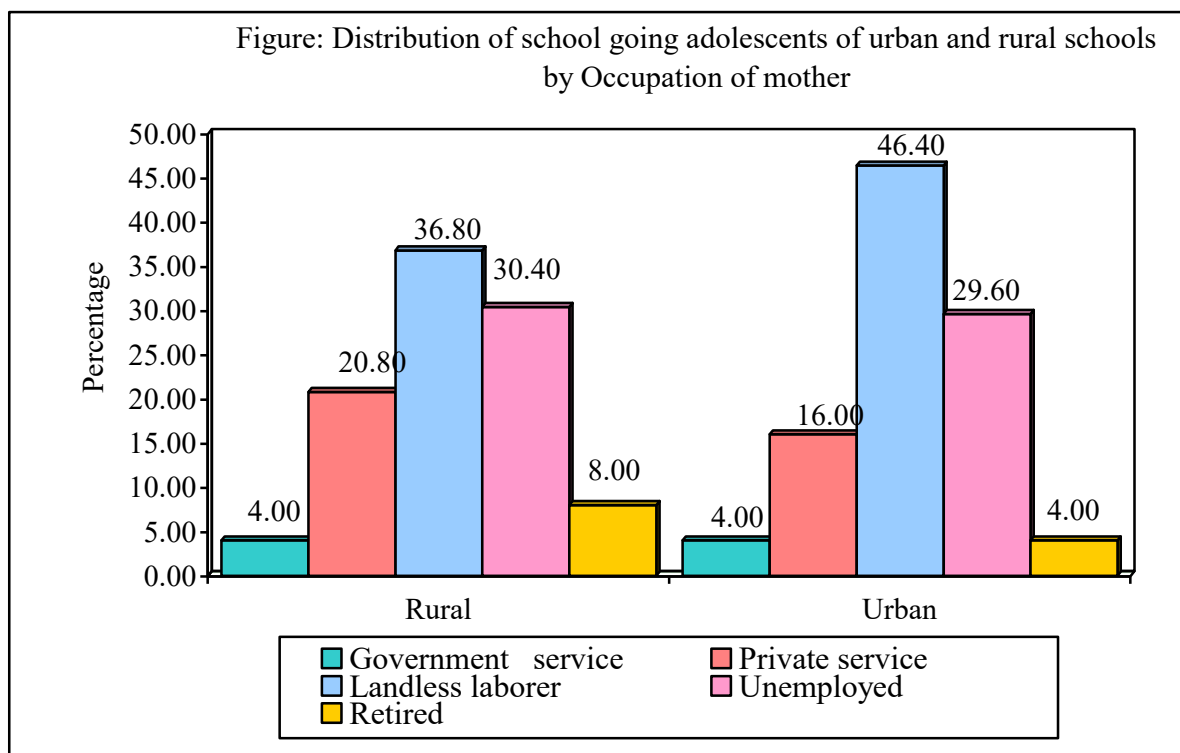


Table 9: Distribution of school going adolescents of urban and rural schools by Family income in Rupees/month

Family income	Rural	%	Urban	%	Total	%	$\chi^2$	P-value
Below 1000	21	16.80	13	10.40	34	13.60	3.4950	0.4790
1000/- to 2000/-	24	19.20	19	15.20	43	17.20		
2000/- to 3000/-	22	17.60	26	20.80	48	19.20		
3000/- to 7000/-	30	24.00	36	28.80	66	26.40		
7000/- and above	28	22.40	31	24.80	59	23.60		
Total	125	100.00	125	100.00	250	100.00		

Table 9 revealed that maximum family income among 125 students in rural 30(24.00%) were belonged to 3000-7000rps and minimum was 21 (16.80%) were belonged to below 1000rps followed by others when compared to urban maximum family income among 125 adolescents 36(28.80%) were belonged to 3000-7000rps and minimum was 13 (10.40%) were belonged to below 1000rps followed by others. ( $\chi^2$ :3.4950) (P: 0.4790).

Graph 9:

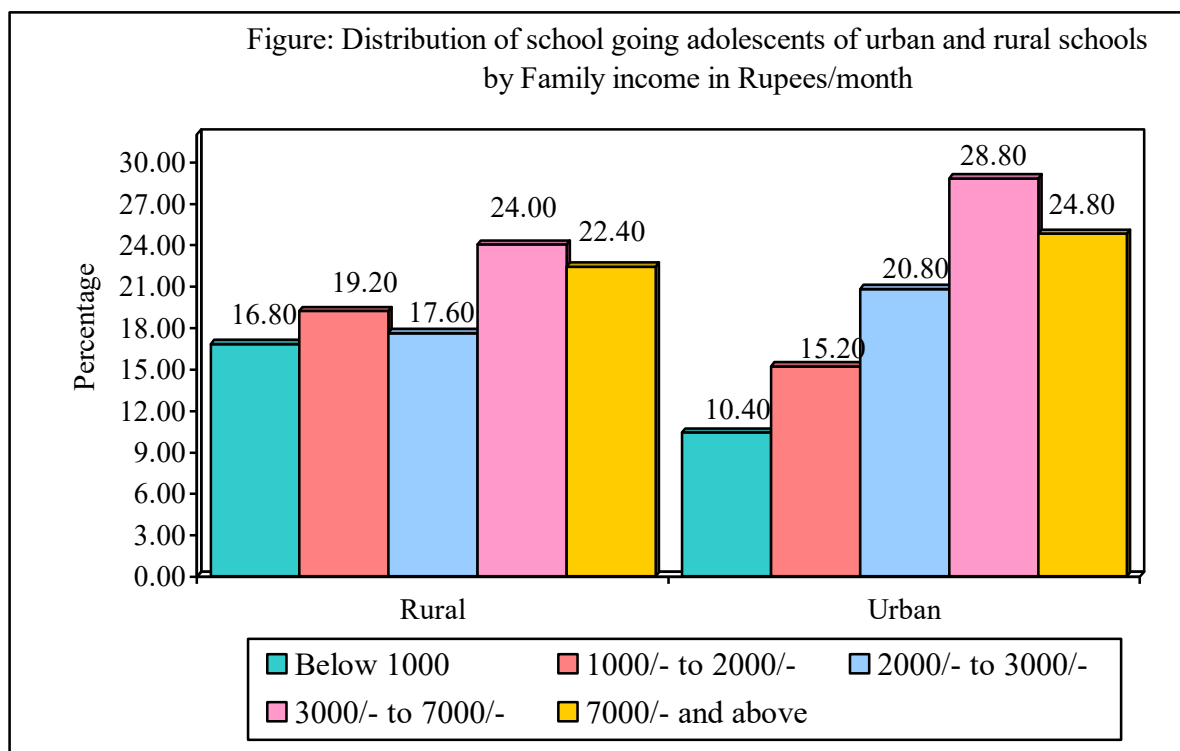
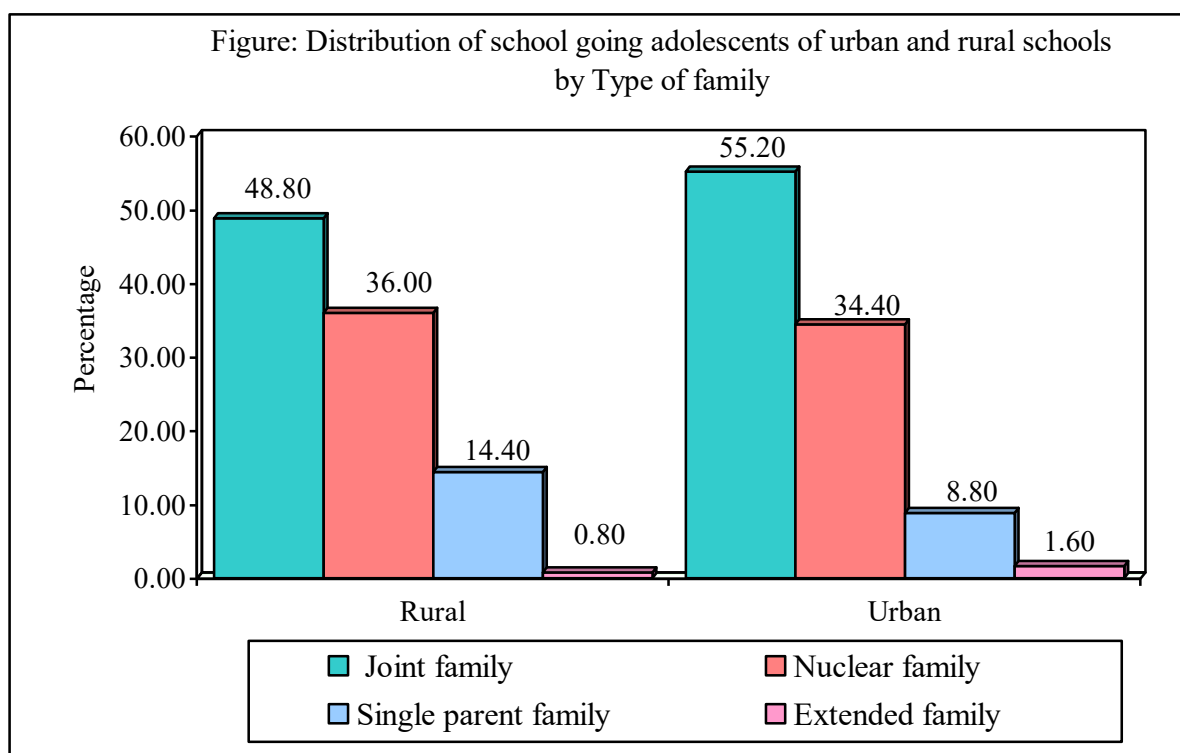


Table 10: Distribution of school-going adolescents of urban and rural schools by Type of family

Type of family	Rural	%	Urban	%	Total	%	$\chi^2$	P-value
Joint family	61	48.80	69	55.20	130	52.00	2.5610	0.4640
Nuclear family	45	36.00	43	34.40	88	35.20		
Single-parent family	18	14.40	11	8.80	29	11.60		
Extended family	1	0.80	2	1.60	3	1.20		
Total	125	100.00	125	100.00	250	100.00		

Table 10 revealed that maximum type of family among 125 students in rural 61(48.80%) were belonged to joint family and minimum was 1 (0.80%) were belonged to extended family followed by others when compared to urban maximum type of family among 125 adolescents 69(55.20%) were belonged to joint family and minimum was 2(1.60%) were belonged to extended family followed by others. ( $\chi^2$ :2.5610) (P: 0.4640).

Graph 10:



## SECTION 2: COMPARISON OF HEALTH BEHAVIOR OF ADOLESCENTS WITH NUTRITIONAL STATUS, SLEEP PATTERN, PHYSICAL ACTIVITY, SUBSTANCE ABUSE, AND SEXUAL EDUCATION OF URBAN AND RURAL SCHOOL-ATTENDING CHILDREN

Table 11: Comparison of school-going adolescents of urban and rural schools with each item related to Nutritional pattern

Nutritional pattern	Rural	%	Urban	%	Total	%	$\chi^2$	P-value
<b>Do you have regular foods like dal, rice, chapati, or roti, and green leafy vegetables?</b>								
Never	0	0.00	0	0.00	0	0.00	3.4230	0.1810
Sometimes	20	16.00	14	11.20	34	13.60		
Rarely	13	10.40	22	17.60	35	14.00		
Always	92	73.60	89	71.20	181	72.40		
<b>Total</b>	<b>125</b>	<b>100</b>	<b>125</b>	<b>100</b>	<b>250</b>	<b>100</b>		
<b>Do you eat junk foods like chocolate, bakery items, pizza, and burgers?</b>								
Never	6	4.80	5	4.00	11	4.40	1.5530	0.6700
Sometimes	0	0.00	1	0.80	1	0.40		
Rarely	100	80.00	96	76.80	196	78.40		
Always	19	15.20	23	18.40	42	16.80		

<b>Total</b>	125	100	125	100	250	100		
<b>Do you have breakfast daily?</b>								
Never	6	4.80	3	2.40	9	3.60	2.0990	0.5520
Sometimes	32	25.60	27	21.60	59	23.60		
Rarely	12	9.60	16	12.80	28	11.20		
Always	75	60.00	79	63.20	154	61.60		
<b>Total</b>	125	100	125	100	250	100		
<b>Do you have a habit of consuming regular meals?</b>								
Never	19	15.20	24	19.20	43	17.20	1.1770	0.7580
Sometimes	29	23.20	28	22.40	57	22.80		
Rarely	37	29.60	31	24.80	68	27.20		
Always	40	32.00	42	33.60	82	32.80		
<b>Total</b>	125	100	125	100	250	100		
<b>Do you have the habit of skipping food?</b>								
Never	5	4.00	8	6.40	13	5.20	2.0660	0.5590
Sometimes	12	9.60	8	6.40	20	8.00		
Rarely	61	48.80	56	44.80	117	46.80		
Always	47	37.60	53	42.40	100	40.00		
<b>Total</b>	125	100	125	100	250	100		
<b>Do you ever eat more than you really need?</b>								
Never	2	1.60	4	3.20	6	2.40	6.7270	0.0810
Sometimes	10	8.00	22	17.60	32	12.80		
Rarely	61	48.80	48	38.40	109	43.60		
Always	52	41.60	51	40.80	103	41.20		
<b>Total</b>	125	100	125	100	250	100		
<b>Have you ever tried dieting?</b>								
Never	26	20.80	34	27.20	60	24.00	15.596	0.0010*
Sometimes	63	50.40	33	26.40	96	38.40		
Rarely	22	17.60	35	28.00	57	22.80		
Always	14	11.20	23	18.40	37	14.80		
<b>Total</b>	125	100	125	100	250	100		
<b>Do you believe a balanced diet is essential for good health, for example, protein, fat, and fibre-rich carbohydrates?</b>								
Never	1	0.80	7	5.60	8	3.20	6.5820	0.0870

Sometimes	17	13.60	22	17.60	39	15.60		
Rarely	21	16.80	24	19.20	45	18.00		
Always	86	68.80	72	57.60	158	63.20		
<b>Total</b>	125	100	125	100	250	100		
<b>Do you have a habit of eating food or snacks while watching TV?</b>								
Never	32	25.60	24	19.20	56	22.40	9.2960	0.0260*
Sometimes	15	12.00	16	12.80	31	12.40		
Rarely	61	48.80	49	39.20	110	44.00		
Always	17	13.60	36	28.80	53	21.20		
<b>Total</b>	125	100	125	100	250	100		
<b>How often do you eat non-veg?</b>								
Never	14	11.20	19	15.20	33	13.20	4.2150	0.2390
Sometimes	79	63.20	70	56.00	149	59.60		
Rarely	19	15.20	28	22.40	47	18.80		
Always	13	10.40	8	6.40	21	8.40		
<b>Total</b>	125	100	125	100	250	100		
<b>Do you eat fruits and vegetables every day?</b>								
Never	9	7.20	10	8.00	19	7.60	16.467	0.0010*
Sometimes	73	58.40	45	36.00	118	47.20		
Rarely	25	20.00	28	22.40	53	21.20		
Always	18	14.40	42	33.60	60	24.00		
<b>Total</b>	125	100	125	100	250	100		
<b>Do you consume an adequate number of meals daily?</b>								
Never	4	3.20	10	8.00	14	5.60	2.7270	0.4360
Sometimes	26	20.80	25	20.00	51	20.40		
Rarely	22	17.60	21	16.80	43	17.20		
Always	73	58.40	69	55.20	142	56.80		
<b>Total</b>	125	100	125	100	250	100		
<b>Do you have any food allergies?</b>								
Never	3	2.40	7	5.60	10	4.00	2.6380	0.4510
Sometimes	5	4.00	6	4.80	11	4.40		
Rarely	30	24.00	23	18.40	53	21.20		
Always	87	69.60	89	71.20	176	70.40		
<b>Total</b>	125	100	125	100	250	100		

\*p<0.05

Table 11: revealed that majority of students have tried dieting 63 (50.40%) were belonged to sometimes and minority was 22 (17.60%) belonged to rarely in rural area and majority of students have tried dieting 35 (28.00%) were belonged to rarely and minority was 33(26.40%) belonged to sometimes in urban area. The difference is found to be statistically significant ( $\chi^2$ : 15.596) (P: 0.0010).

Majority of students have the habit of eating food or snacks while watching TV 61 (48.80%) were from rarely and minimum was 15(12.00%) were belonged to sometimes in rural area and majority of students have the habit of eating food or snacks while watching TV 49 (39.20%) belonged to rarely and minority was 16 (12.80%) belonged to sometimes. The difference is found to be statistically significant ( $\chi^2$ : 9.2960) (P: 0.0260).

The majority of participants eat fruits and vegetables every day, 73(58.40%) were from sometimes, and a minority were 9 (7.20%) who belonged to never in rural schools. The majority of participants eat fruits and vegetables every day, 45(36.00%) belonged to sometimes, and a minority, 10 (8.00%), belonged to never. The difference is found to be statistically significant ( $\chi^2$ :16.467) (P: 0.0010).

Table 12: Comparison of school-going adolescents of urban and rural schools with each item related to **Sleeping pattern**

<b>Sleeping pattern</b>	Rural	%	Urban	%	Total	%	$\chi^2$	P-value
<b>Do you have difficulty falling asleep?</b>								
Never	4	3.20	3	2.40	7	2.80	4.0800	0.2530
Sometimes	7	5.60	15	12.00	22	8.80		
Rarely	23	18.40	27	21.60	50	20.00		
Always	91	72.80	80	64.00	171	68.40		
<b>Total</b>	125	100.00	125	100.00	250	100.00		
<b>Do you sleep at least 4 - 6hours every night?</b>								
Never	39	31.20	18	14.40	57	22.80	14.357	0.0020*
Sometimes	21	16.80	16	12.80	37	14.80		
Rarely	9	7.20	20	16.00	29	11.60		
Always	56	44.80	71	56.80	127	50.80		
<b>Total</b>	125	100.00	125	100.00	250	100.00		
<b>Do you have a habit of sleeping late at night?</b>								
Never	17	13.60	3	2.40	20	8.00	16.903	0.0010*

Sometimes	11	8.80	9	7.20	20	8.00		
Rarely	64	51.20	91	72.80	155	62.00		
Always	33	26.40	22	17.60	55	22.00		
<b>Total</b>	125	100.00	125	100.00	250	100.00		
<b>Do you feel sleepy during class time?</b>								
Never	8	6.40	2	1.60	10	4.00	7.2580	0.0640
Sometimes	1	0.80	0	0.00	1	0.40		
Rarely	18	14.40	29	23.20	47	18.80		
Always	98	78.40	94	75.20	192	76.80		
<b>Total</b>	125	100.00	125	100.00	250	100.00		
<b>Do you feel adequate sleep has a positive effect on your health?</b>								
Never	53	42.40	30	24.00	83	33.20	14.485	0.0020*
Sometimes	29	23.20	34	27.20	63	25.20		
Rarely	12	9.60	30	24.00	42	16.80		
Always	31	24.80	31	24.80	62	24.80		
<b>Total</b>	125	100.00	125	100.00	250	100.00		
<b>Do you unintentionally fall asleep during the day?</b>								
Never	1	0.80	2	1.60	3	1.20	1.1310	0.7700
Sometimes	10	8.00	13	10.40	23	9.20		
Rarely	51	40.80	45	36.00	96	38.40		
Always	63	50.40	65	52.00	128	51.20		
<b>Total</b>	125	100.00	125	100.00	250	100.00		
<b>Do you snore?</b>								
Never	2	1.60	1	0.80	3	1.20	8.4800	0.0370*
Sometimes	12	9.60	2	1.60	14	5.60		
Rarely	26	20.80	24	19.20	50	20.00		
Always	85	68.00	98	78.40	183	73.20		
<b>Total</b>	125	100.00	125	100.00	250	100.00		
<b>Do you have frequent nightmares?</b>								
Never	22	17.60	13	10.40	35	14.00	6.3690	0.0950
Sometimes	8	6.40	17	13.60	25	10.00		
Rarely	63	50.40	57	45.60	120	48.00		
Always	32	25.60	38	30.40	70	28.00		
<b>Total</b>	125	100.00	125	100.00	250	100.00		



<b>Do you have the habit of sleepwalking?</b>								
Never	10	8.00	12	9.60	22	8.80	7.8100	0.0500
Sometimes	6	4.80	0	0.00	6	2.40		
Rarely	12	9.60	19	15.20	31	12.40		
Always	97	77.60	94	75.20	191	76.40		
<b>Total</b>	125	100.00	125	100.00	250	100.00		
<b>Do you have any sleep disturbances?</b>								
Never	1	0.80	2	1.60	3	1.20	12.442	0.0060*
Sometimes	6	4.80	2	1.60	8	3.20		
Rarely	9	7.20	27	21.60	36	14.40		
Always	109	87.20	94	75.20	203	81.20		
<b>Total</b>	125	100.00	125	100.00	250	100.00		

\*p<0.05

Table 12: The Majority of participants sleep at least 4 - 6hours every night, 91(72.80%) were from always, and a minority was 4 (3.20%) belonged to never in rural schools. The majority of participants sleep at least 4 - 6hours every night. 80(64.00%) belonged to always, and a minority of 3 (2.40%) belonged to never. The difference is found to be statistically significant ( $\chi^2$ :4.0800) (P: 0.2530).

The majority of participants had a habit of sleeping late at night, 64(51.20%) were from rarely, and a minority, 11(8.80%), belonged to sometimes in rural schools. The majority of participants had a habit of sleeping late at night, 91(72.80%) belonged to rarely, and a minority, 3 (2.40%), belonged to never. The difference is found to be statistically significant ( $\chi^2$ :16.903) (P: 0.0010).

The majority of participants feel that adequate sleep has a positive effect on their health. 53(42.40%) were from never, and minority was 12(9.60%) belonged to rarely in rural schools. The majority of participants feel that adequate sleep has a positive effect on their health. 34(27.20%) belonged to sometimes, and a minority of 30 (24.00%) belonged to always and never. The difference is found to be statistically significant ( $\chi^2$ :14.485) (P: 0.0020).

The majority of participants (85, 68.00%) were from always, and a minority (2, 1.60%) belonged to never in rural schools. The majority of participants have snore 98(78.40%) belonged to always, and a minority (1, 0.80%) belonged to never. The difference is found to be statistically significant ( $\chi^2$ : 8.4800) (P: 0.0370).

The majority of participants had sleep disturbances, 109(87.20%) were from always, and a minority was 1(0.80%) belonged to never in rural schools. The majority of participants had sleep disturbances, 94(75.20%) belonged to always, and a minority, 2 (1.60%), belonged to sometimes and never. The difference is found to be statistically significant ( $\chi^2$ : 12.442) (P: 0.0060).

Table 13: Comparison of school-going adolescents of urban and rural schools with each item related to physical activity

Physical activity	Rural	%	Urban	%	Total	%	$\chi^2$	P-value
<b>Do you exercise regularly, like cycling, running, walking, football, volleyball, and cricket?</b>								
Never	16	12.80	4	3.20	20	8.00	10.341	0.0160*
Sometimes	32	25.60	31	24.80	63	25.20		
Rarely	29	23.20	44	35.20	73	29.20		
Always	48	38.40	46	36.80	94	37.60		
<b>Total</b>	125	100	125	100	250	100		
<b>Are you interested in spending your leisure time in indoor games like badminton, skipping, and table tennis?</b>								
Never	16	12.80	12	9.60	28	11.20	13.169	0.0040*
Sometimes	59	47.20	36	28.80	95	38.00		
Rarely	22	17.60	26	20.80	48	19.20		
Always	28	22.40	51	40.80	79	31.60		
<b>Total</b>	125	100	125	100	250	100		
<b>Are you happy to engage in extracurricular activities?</b>								
Never	7	5.60	8	6.40	15	6.00	6.7910	0.0790
Sometimes	46	36.80	36	28.80	82	32.80		
Rarely	30	24.00	20	16.00	50	20.00		
Always	42	33.60	61	48.80	103	41.20		
<b>Total</b>	125	100	125	100	250	100		
<b>Do you think physical activity has a positive effect on your health?</b>								
Never	26	20.80	27	21.60	53	21.20	0.3440	0.9520
Sometimes	33	26.40	29	23.20	62	24.80		
Rarely	25	20.00	26	20.80	51	20.40		
Always	41	32.80	43	34.40	84	33.60		
<b>Total</b>	125	100	125	100	250	100		
<b>Are you interested in maintaining your body built appropriately?</b>								

Never	9	7.20	18	14.40	27	10.80	6.7610	0.0800
Sometimes	15	12.00	12	9.60	27	10.80		
Rarely	16	12.80	25	20.00	41	16.40		
Always	85	68.00	70	56.00	155	62.00		
<b>Total</b>	125	100	125	100	250	100		
<b>Does regular exercise improve your overall body function?</b>								
Never	50	40.00	37	29.60	87	34.80	10.402	.015*
Sometimes	20	16.00	40	32.00	60	24.00		
Rarely	18	14.40	21	16.80	39	15.60		
Always	37	29.60	27	21.60	64	25.60		
<b>Total</b>	125	100	125	100	250	100		
<b>Does exercising increase your level of physical fitness?</b>								
Never	35	28.00	36	28.80	71	28.40	6.1120	0.1060
Sometimes	34	27.20	25	20.00	59	23.60		
Rarely	35	28.00	28	22.40	63	25.20		
Always	21	16.80	36	28.80	57	22.80		
<b>Total</b>	125	100	125	100	250	100		
<b>Do you enjoy doing exercise?</b>								
Never	7	5.60	10	8.00	17	6.80	2.9560	0.3990
Sometimes	17	13.60	12	9.60	29	11.60		
Rarely	20	16.00	28	22.40	48	19.20		
Always	81	64.80	75	60.00	156	62.40		
<b>Total</b>	125	100	125	100	250	100		
<b>Does exercise increase your muscle strength?</b>								
Never	4	3.20	13	10.40	17	6.80	16.422	0.001*
Sometimes	25	20.00	7	5.60	32	12.80		
Rarely	38	30.40	34	27.20	72	28.80		
Always	58	46.40	71	56.80	129	51.60		
<b>Total</b>	125	100	125	100	250	100		
<b>Do you feel a decrease in stress and tension by doing exercise?</b>								
Never	13	10.40	9	7.20	22	8.80	1.2780	0.7340
Sometimes	24	19.20	28	22.40	52	20.80		
Rarely	25	20.00	28	22.40	53	21.20		
Always	63	50.40	60	48.00	123	49.20		

<b>Total</b>	125	100.00	125	100.00	250	100.00		
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\*p<0.05

Table 13 revealed that most students exercise regularly, such as cycling, running, walking, football, volleyball, and cricket. 48(38.40%) were from always, and a minority of 16(12.80%) belonged to never in rural schools. The majority of participants have exercised regularly, such as cycling, running, walking, football, volleyball, and cricket. 46(36.80%) belonged to always, and a minority of 4 (3.20%) belonged to never. The difference is found to be statistically significant ( $\chi^2$ : 10.341) (P: 0.0160).

The majority of students were interested in spending their leisure time in indoor games like badminton, skipping, and table tennis. 59(47.20%) were from sometimes, and minority was 16(12.80%) belonged to never in rural schools. The majority of participants are interested in spending their leisure time in indoor games like badminton, skipping, and table tennis. 51(41.80%) belonged to always, and a minority of 12 (9.60%) belonged to never. The difference is found to be statistically significant ( $\chi^2$ : 13.169) (P: 0.0040).

The majority of students who do regular exercise improve their overall body function, 37(29.60%) were from always, and a minority, 18(14.40%), belonged to rarely in rural schools. The majority of participants who did regular exercise improved their overall body function, 40(32.00%) belonged to sometimes, and a minority, 21 (16.80%), belonged to rarely. The difference is found to be statistically significant ( $\chi^2$ : 10.402) (P: 0.015).

The majority of students who exercise increase their muscle strength, 58(46.40%) were from always, and a minority, 4(3.20%), belonged to never in rural schools. The majority of participants (71, 56.80%) belonged to always, and a minority (7, 5.60%) belonged to sometimes. The difference is found to be statistically significant ( $\chi^2$ : 16.422) (P: 0.001).

Table 14: Comparison of school-going adolescents of urban and rural schools with each item related to Substance abuse

<b>Substance abuse</b>	Rural	%	Urban	%	Total	%	$\chi^2$	P-value
<b>Do you feel substance abuse has a negative influence on your health?</b>								
Never	39	31.20	49	39.20	88	35.20	4.4180	0.2200
Sometimes	33	26.40	20	16.00	53	21.20		
Rarely	6	4.80	6	4.80	12	4.80		

Always	47	37.60	50	40.00	97	38.80		
<b>Total</b>	125	100	125	100	250	100		
<b>Have you ever had a drink of wine, beer, or liquor?</b>								
Never	0	0.00	0	0.00	0	0.00	1.0040	0.6050
Sometimes	1	0.80	0	0.00	1	0.40		
Rarely	4	3.20	4	3.20	8	3.20		
Always	120	96.00	121	96.80	241	96.40		
<b>Total</b>	125	100	125	100	250	100		
<b>Do you smoke cigarettes?</b>								
Never	0	0.00	0	0.00	0	0.00	1.0040	0.6050
Sometimes	1	0.80	0	0.00	1	0.40		
Rarely	4	3.20	4	3.20	8	3.20		
Always	120	96.00	121	96.80	241	96.40		
<b>Total</b>	125	100	125	100	250	100		
<b>Have you tried chewing tobacco?</b>								
Never	0	0.00	0	0.00	0	0.00	2.0160	0.1560
Sometimes	0	0.00	0	0.00	0	0.00		
Rarely	2	1.60	0	0.00	2	0.80		
Always	123	98.40	125	100.00	248	99.20		
<b>Total</b>	125	100	125	100	250	100		
<b>Have you used drugs other than those required for medical reasons?</b>								
Never	10	8.00	6	4.80	16	6.40	3.6480	0.3020
Sometimes	2	1.60	0	0.00	2	0.80		
Rarely	42	33.60	39	31.20	81	32.40		
Always	71	56.80	80	64.00	151	60.40		
<b>Total</b>	125	100	125	100	250	100		
<b>Has anyone tried to persuade you to use a drug?</b>								
Never	9	7.20	3	2.40	12	4.80	30.838	0.0001*
Sometimes	0	0.00	11	8.80	11	4.40		
Rarely	50	40.00	20	16.00	70	28.00		
Always	66	52.80	91	72.80	157	62.80		
<b>Total</b>	125	100	125	100	250	100		
<b>Does anyone in your home use drugs?</b>								
Never	27	21.60	7	5.60	34	13.60	14.758	0.0020*

Sometimes	6	4.80	4	3.20	10	4.00		
Rarely	34	27.20	46	36.80	80	32.00		
Always	58	46.40	68	54.40	126	50.40		
<b>Total</b>	125	100	125	100	250	100		
<b>Has anyone taught you about the adverse effects of drugs?</b>								
Never	63	50.40	55	44.00	118	47.20	22.790	0.0001*
Sometimes	37	29.60	14	11.20	51	20.40		
Rarely	7	5.60	15	12.00	22	8.80		
Always	18	14.40	41	32.80	59	23.60		
<b>Total</b>	125	100	125	100	250	100		
<b>Does anyone smoke or drink in your home?</b>								
Never	7	5.60	7	5.60	14	5.60	5.9960	0.1120
Sometimes	5	4.00	8	6.40	13	5.20		
Rarely	38	30.40	22	17.60	60	24.00		
Always	75	60.00	88	70.40	163	65.20		
<b>Total</b>	125	100	125	100	250	100		
<b>Has anyone forced you to take drugs?</b>								
Never	0	0.00	12	9.60	12	4.80	39.733	0.0001*
Sometimes	3	2.40	3	2.40	6	2.40		
Rarely	40	32.00	6	4.80	46	18.40		
Always	82	65.60	104	83.20	186	74.40		
<b>Total</b>	125	100.00	125	100.00	250	100.00		

\*p<0.05

Table 14 showed that the Majority of students had tried to persuade you to use drugs, 66(52.80%) were from always, and a minority was 0(0.00%) belonged to sometimes in rural schools. The majority of participants 72.80%) had tried to persuade you to use the drug 91 72.80% belonged to the category of always, and a minority (3, 2.40%) had never tried to use the drug 91. The difference is found to be statistically significant ( $\chi^2$ : 30.838) (P: 0.001).

Table 14 showed that the Majority of students (58, 46.40%) always use drugs, and a minority (6, 4.80%) belonged to the sometimes category in rural schools. The majority of participants (68, 54.40%) belonged to always, and a minority (4, 3.20%) belonged to never. The difference is found to be statistically significant ( $\chi^2$ : 14.758) (P: 0.0020).

The majority of students have had no one teach them about the adverse effects of drugs. 63(50.40%) were from never, and minority was 7(5.60%) belonged to rarely in rural schools. The majority of participants (55, 44.00%) belonged to the never category, and a minority was 14(11.20%) belonged to the sometimes category. The difference is found to be statistically significant ( $\chi^2$ : 22.790) (P: 0.0001).

The majority of students. Has anyone forced you to take drugs? 82(65.60%) were always, and minority was 0(0.000%) belonged to never in rural schools. The majority of participants (104, 83.20%) belonged to always, and a minority (3, 2.40%) belonged to sometimes. The difference is found to be statistically significant ( $\chi^2$ : 39.733) (P: 0.0001).

Table 15: Comparison of school-going adolescents of urban and rural schools with each item related to Sexual education

<b>Sexual education</b>	Rural	%	Urban	%	Total	%	$\chi^2$	P-value
<b>Have you ever attended any sexual education?</b>								
Never	6	4.80	11	8.80	17	6.80	26.397	0.0001*
Sometimes	35	28.00	10	8.00	45	18.00		
Rarely	44	35.20	32	25.60	76	30.40		
Always	40	32.00	72	57.60	112	44.80		
<b>Total</b>	125	100	125	100	250	100		
<b>Have your parents or teachers given information about sex?</b>								
Never	46	36.80	34	27.20	80	32.00	20.861	0.0001*
Sometimes	51	40.80	31	24.80	82	32.80		
Rarely	9	7.20	31	24.80	40	16.00		
Always	19	15.20	29	23.20	48	19.20		
<b>Total</b>	125	100	125	100	250	100		
<b>Do you know about sexually transmitted diseases like STDs, HIV, VDRL, chlamydia, and syphilis?</b>								
Never	30	24.00	40	32.00	70	28.00	8.3550	0.0390*
Sometimes	35	28.00	36	28.80	71	28.40		
Rarely	17	13.60	25	20.00	42	16.80		
Always	43	34.40	24	19.20	67	26.80		
<b>Total</b>	125	100.00	125	100.00	250	100.00		

\*p<0.05

Table 15 showed that the Majority of students had attended any sexual education, 40(32.00%) were from always, and a minority, 6(4.80%), belonged to never in rural schools. The majority of participants have you ever attended any sexual education,

72(57.60%) always, and a minority, 10(8.00%), sometimes. The difference is found to be statistically significant ( $\chi^2$ : 26.397) (P: 0.0001).

The majority of students had their parents or teachers give them information about sex; 46(36.80%) had never heard of it, and a minority of 9(7.20%) had rarely heard of it in rural schools. The majority of participants had their parents or teachers give information about sex; 34(27.20%) belonged to never, and a minority of 29(23.20%) belonged to always. The difference is found to be statistically significant ( $\chi^2$ : 20.861) (P: 0.0001).

The majority of students have known about sexually transmitted diseases like STDs, HIV, VDRL, chlamydia, and syphilis. 43(34.40%) were from always, and minority was 17(13.60%) belonged to rarely in rural schools. The majority of participants have known about sexually transmitted diseases like STDs, HIV, VDRL, chlamydia, and syphilis. 40(32.00%) belonged to never, and minority was 24(19.20%) belonged to always. The difference is found to be statistically significant ( $\chi^2$ : 8.3550) (P: 0.0390).

Table 16: Comparison of school-going adolescents of urban and rural schools with Nutritional pattern, Sleeping pattern, Physical activity, Substance abuse, and Sexual education scores by independent t-test

Variable	Locations	n	Mean	SD	SE	t-value	P-value
Nutritional pattern	Rural	125	25.98	2.93	0.26	-0.9129	0.3622
	Urban	125	26.39	4.05	0.36		
Sleeping pattern	Rural	125	22.16	3.52	0.31	-2.8661	0.0045*
	Urban	125	23.26	2.43	0.22		
Physical activity	Rural	125	18.66	4.32	0.39	-1.3987	0.1631
	Urban	125	19.49	4.98	0.44		
Substance abuse	Rural	125	23.06	2.61	0.23	-3.6742	0.0003*
	Urban	125	24.41	3.18	0.28		

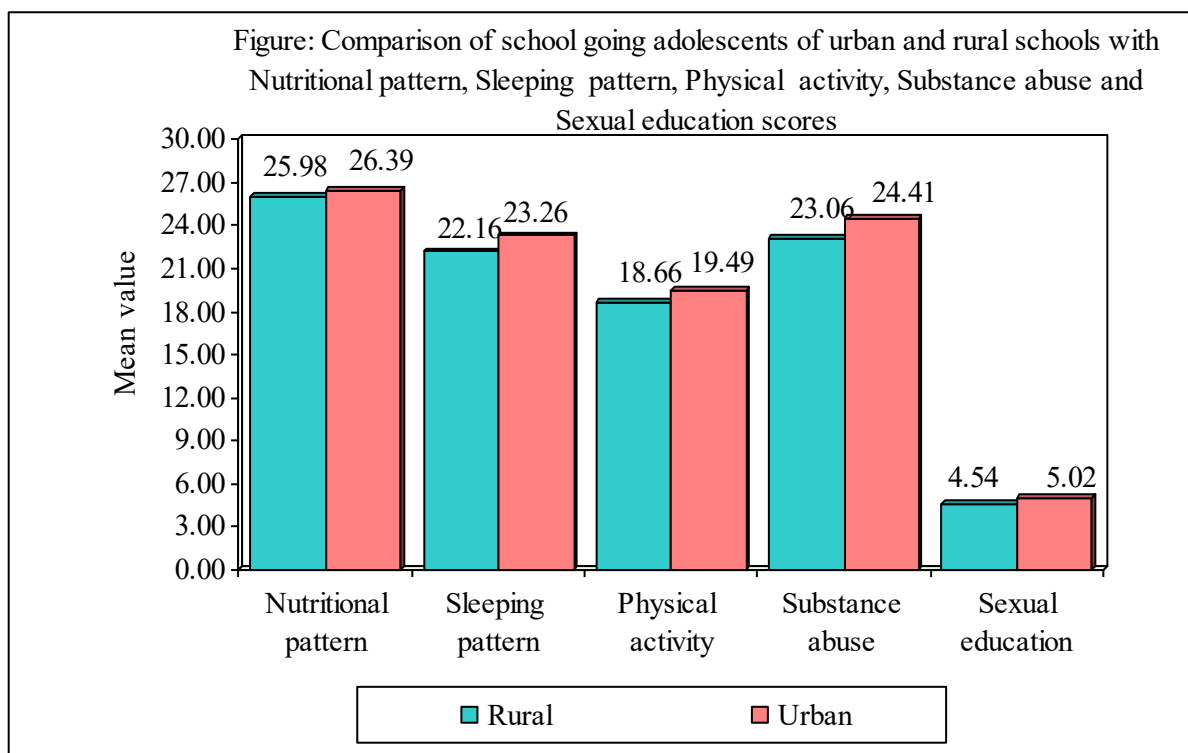


Sexual education	Rural	125	4.54	1.70	0.15	-2.1321	0.0340 *
	Urban	125	5.02	1.92	0.17		

\*p<0.05

The above table revealed the area-wise comparison of health behaviour of adolescents of urban and rural schools. Unpaired t-test was used to analyse the data. The t-value of sleeping pattern (-2.8661), substance abuse (-3.6742), and sexual education (-2.1321) were higher than the table value with a 0.05 level of significance.

Graph 11:



### SECTION 3: ASSOCIATION BETWEEN HEALTH BEHAVIOR OF ADOLESCENTS ATTENDING URBAN AND RURAL SCHOOLS AND HEALTH BEHAVIORS

Table 17: Correlations among Nutritional pattern, Sleeping pattern, Physical activity, Substance abuse, and Sexual education scores by Karl Pearson's correlation coefficient method in total samples

Variables	Summary	Nutritional pattern	Sleeping pattern	Physical activity	Substance abuse	Sexual education
Nutritional pattern	r-value	-				
	p-value	-				
	r-value	0.2010	-			

Sleeping pattern	p-value	0.0010*	-			
Physical activity	r-value	0.3150	0.3150	-		
	p-value	0.0001*	0.0001*	-		
Substance abuse	r-value	0.1870	0.2140	0.3130	-	
	p-value	0.0030*	0.0010*	0.0001*	-	
Sexual education	r-value	0.3110	0.1660	0.1490	0.1930	-
	p-value	0.0001*	0.0090*	0.0180*	0.0020*	-

\*p<0.05

The data presented in Table 17 shows that while comparing the health behaviour of rural and urban adolescents, including sleeping patterns and nutritional patterns, a calculated value (0.0010) is less than the P (<0.05) value, which shows that there is a significant association between sleeping patterns and nutritional patterns.

The data presented in table 17 shows that while comparison between rural and urban adolescents health behaviour of physical activity with nutritional pattern and sleeping pattern a calculated value (0.0001) and (0.0001), is less than P (<0.05) value which shows that there is a significant association between of physical activity with nutritional pattern and sleeping pattern.

The data presented in table 17 shows that while comparison between rural and urban adolescents health behaviour of substance abuse with nutritional pattern, sleeping pattern and physical activity a calculated value (0.0030), (0.0010) and (0.0001), is less than P (<0.05) value which shows that there is a significant association between substance abuse with nutritional pattern, sleeping pattern and physical activity.

The data presented in table 17 shows that while comparison between rural and urban adolescents health behaviour of sexual education with nutritional pattern, sleeping pattern, physical activity and substance abuse a calculated value (0.0001), (0.0090), (0.0180), and (0.0020) is less than P(<0.05) value which shows that there is a significant association sexual education with nutritional pattern, sleeping pattern, physical activity and substance abuse. Therefore, the research hypothesis was accepted.

Table 18: Correlations among Nutritional pattern, Sleeping pattern, Physical activity, Substance abuse, and Sexual education scores by Karl Pearson's correlation coefficient method in rural samples

Variables	Summer y	Nutritional pattern	Sleeping pattern	Physical activity	Substance abuse	Sexual education
Nutritional pattern	r-value	-				
	p-value	-				
Sleeping pattern	r-value	0.1678	-			
	p-value	0.0610	-			
Physical activity	r-value	-0.0540	0.2916	-		
	p-value	0.5500	0.0010*	-		
Substance abuse	r-value	-0.0147	0.1319	0.3027	-	
	p-value	0.8710	0.1430	0.0010*	-	
Sexual education	r-value	0.4430	0.1829	-0.0446	-0.1071	-
	p-value	0.0001*	0.0410*	0.6220	0.2340	-

\*p<0.05

Table 18. In rural adolescents, correlations between physical activity and sleeping pattern, a calculated value (0.0010) is less than the P (<0.05) value, which shows that there is a significant association between physical activity and sleeping pattern.

Table 18. In rural adolescents, correlations between substance abuse and physical activity, a calculated value (0.0010), is less than the P (<0.05) value, which shows that there is a significant association between substance abuse and physical activity.

Table 18. In rural adolescents, correlations among sexual education with nutritional pattern and sleeping pattern, calculated values (0.0001) and (0.0410), are less than the P (<0.05) value which shows that there is a significant association between sexual education with nutritional pattern and sleeping pattern.

Table 19: Correlations among Nutritional pattern, Sleeping pattern, Physical activity, Substance abuse, and Sexual education scores by Karl Pearson's correlation coefficient method in urban samples

Variables	Summ ery	Nutritiona l pattern	Sleeping pattern	Physical activity	Substance abuse	Sexual education
Nutritional pattern	r-value	-				
	p-value	-				
	r-value	0.2461	-			

Sleeping pattern	p-value	0.0060*	-			
Physical activity	r-value	0.5430	0.3434	-		
	p-value	0.0001*	0.0001*	-		
Substance abuse	r-value	0.2942	0.2551	0.3016	-	
	p-value	0.0010*	0.0040*	0.0010*	-	
Sexual education	r-value	0.2214	0.1077	0.2806	0.3688	-
	p-value	0.0130*	0.2320	0.0020*	0.0001*	-

\*p<0.05

Table 19. In urban adolescents, correlations among sleeping patterns and nutritional patterns, with a calculated value (0.0060), are less than the P (<0.05) value, which shows that there is a significant association between sleeping patterns and nutritional patterns.

Table 19. In urban adolescents, correlations among physical activity, nutritional pattern, and sleeping pattern, calculated values (0.0001) and (0.0001), are less than the P (<0.05) value, which shows that there is a significant association between physical activity and nutritional pattern and sleeping pattern.

Table 19. In urban adolescents, correlations among substance abuse with nutritional status, sleeping pattern, and physical activity, calculated values (0.0010), (0.0040), and (0.0010) are less than the P (<0.05) value, which shows that there is a significant association between substance abuse and nutritional status, physical activity.

Table 19. In urban adolescents, correlations among sexual education with nutritional pattern, physical activity, and substance abuse a calculated value (0.0130), (0.0020), and (0.0001) are less than the P (<0.05) value which shows that there is a significant association between sexual education with nutritional pattern, physical activity, and substance abuse.

## Discussion

This study was undertaken in order to compare the health behaviour of rural and urban school-going adolescents in Belagavi. The findings of the study are:

- Demographic characteristics.
- Comparison of health behaviour of adolescents with nutritional status, sleep pattern, physical activity, substance abuse, and sexual education of urban and rural school-going children.
- Association between the health behaviours of adolescents attending urban and rural schools and health behaviours.

### Demographic characteristics:

While considering, out of 125 rural adolescents which a maximum of 59 (47.20%) belong to the age group 15-16 in rural areas and 56 (44.80%) in urban areas. In consideration of

gender equality, no. of students found in rural and urban areas was 63 (50.40%), while the majority of 83 (66.40%) belonged to the Hindu religion in rural and 95 (76.00%) in urban areas. While consideration, education status of mother majority of them 47 (37.60%) were belonged to illiterate in rural and 50(40.00%) in urban area, while consideration of education status of father majority of them belongings to 42 (33.60%) were belonged to primary in rural and 47(37.60%) in urban, while consideration of type of family majority of them 61(48.80%) were belonged to joint family and 69(55.20%) in urban. While consideration, occupation of father majority of them 47 (37.60%) belonged to landless labourer and 53(42.40%) in urban area, in consideration of occupation of mother majority of them rural 46(36.80%) were belonged to landless labourer in rural and 58(46.40%) in urban area, in consideration of family income majority of them 30(24.00%) belonged to 3000-7000rps and 36(28.80%) in urban area. Comparison of health behaviour of adolescents with nutritional pattern, sleep pattern, physical activity, substance abuse, and sexual education of urban and rural school-going children.

### **Nutritional pattern:**

Comparison between rural and urban in majority of students have tried dieting 63 (50.40%) were belonged to sometimes and minority was 22 (17.60%) belonged to rarely in rural area and majority of students have tried dieting 35 (28.00%) were belonged to rarely and minority was 33(26.40%) belonged to sometimes in urban area. The difference is found to be statistically significant ( $\chi^2$ : 15.596) (P: 0.0010). Comparison between rural and urban in majority of students have the habit of eating food or snacks while watching TV 61 (48.80%) were from rarely and minimum was 15(12.00%) were belonged to sometimes in rural area and majority of students have the habit of eating food or snacks while watching TV 49 (39.20%) belonged to rarely and minority was 16 (12.80%) belonged to sometimes. The difference is found to be statistically significant ( $\chi^2$ : 9.2960) (P: 0.0260). Comparison between rural and urban areas showed that the majority of participants 73, 58.40%) ate fruits and vegetables every day, 73(58.40%) ate them sometimes, and a minority (9, 7.20%) ate them never in rural schools. The majority of participants eat fruits and vegetables every day, 45(36.00%) belonged to sometimes, and a minority, 10 (8.00%), belonged to never. The difference is found to be statistically significant ( $\chi^2$ :16.467) (P: 0.0010).

**Sleep Pattern:**

Comparison between rural and urban participants shows that the majority sleep at least 4 - 6 hours every night. 91(72.80%) were from always, and a minority of 4 (3.20%) belonged to never in rural schools. The majority of participants sleep at least 4 - 6 hours every night. 80(64.00%) belonged to always, and a minority was 3 (2.40%) belonged to never. The difference is found to be statistically significant ( $\chi^2$ :4.0800) (P: 0.2530). Comparison between rural and urban in the majority of participants had a habit of sleeping late at night, 64(51.20%) were from rarely, and a minority was 11(8.80%) belonged to sometimes in rural schools. The majority of participants had a habit of sleeping late at night, 91(72.80%) belonged to rarely, and a minority, 3 (2.40%), belonged to never. The difference is found to be statistically significant ( $\chi^2$ :16.903) (P: 0.0010). Comparison between rural and urban in the majority of participants had snored 85(68.00%) were always, and a minority were 2(1.60%) belonged to never in rural schools. The majority of participants have snore 98(78.40%) belonged to always, and a minority (1, 0.80%) belonged to never. The difference is found to be statistically significant ( $\chi^2$ : 8.4800) (P: 0.0370). Comparison between rural and urban in the majority of participants had any sleep disturbances, 109(87.20%) were from always, and a minority was 1(0.80%) belonged to never in rural schools. The majority of participants had sleep disturbances, 94(75.20%) belonged to always, and a minority, 2 (1.60%), belonged to sometimes and never. The difference is found to be statistically significant ( $\chi^2$ : 12.442) (P: 0.0060).

**Physical Activity:**

Comparison between rural and urban in the majority of students exercise regularly, such as cycling, running, walking, football, volleyball, and cricket, etc. 48(38.40%) were from always, and a minority was 16(12.80%) belonged to never in rural schools. The majority of participants have exercised regularly, such as cycling, running, walking, football, volleyball, and cricket. 46(36.80%) belonged to always, and a minority of 4 (3.20%) belonged to never. The difference is found to be statistically significant ( $\chi^2$ : 10.341) (P: 0.0160). Comparison between rural and urban in the majority of students have an interest in spending their leisure time in indoor games like badminton, skipping, and table tennis. 59(47.20%) were from sometimes, and a minority was 16(12.80%) belonged to never in rural schools. The majority of participants are interested in spending their leisure time in indoor games like badminton, skipping, and table tennis. 51(41.80%) belonged to always, and a minority of 12 (9.60%) belonged to never. The difference is found to be statistically significant ( $\chi^2$ : 13.169) (P: 0.0040). Comparison between rural and urban in the majority

of students, did regular exercise improve their overall body function? 37(29.60%) were from always, and a minority were 18(14.40%) who belonged to rarely in rural schools. The majority of participants (40, 32.00%) did regular exercise, and a minority (21, 16.80%) did it rarely. The difference is found to be statistically significant ( $\chi^2$ : 10.402) (P: 0.015). Comparison between rural and urban in the majority of students does exercise increase your muscle strength, 58(46.40%) were from always, and a minority were 4(3.20%) who belonged to never in rural schools. The majority of participants (71, 56.80%) belonged to always, and a minority (7, 5.60%) belonged to sometimes. The difference is found to be statistically significant ( $\chi^2$ : 16.422) (P: 0.001).

### **Substance abuse:**

Comparison between rural and urban areas in the majority of students has anyone tried to persuade you to use drug 66(52.80%) were from always, and a minority was 0(0.00%) belonged to sometimes in rural schools. The majority of participants 72.80%) had tried to persuade you to use the drug 91 72.80% belonged to the category of always, and a minority (3, 2.40%) had never tried to persuade you to use the drug 91. The difference is found to be statistically significant ( $\chi^2$ : 30.838) (P: 0.001). Comparison between rural and urban areas in the majority of students. Does anyone in your home use drugs? 58(46.40%) were always, and minority was 6(4.80%) belonged to sometimes in rural schools. The majority of participants (68, 54.40%) belonged to always, and a minority (4, 3.20%) belonged to never. The difference is found to be statistically significant ( $\chi^2$ : 14.758) (P: 0.0020). Comparison between rural and urban areas in the majority of students. Has anyone taught you about the adverse effects of drugs? 63(50.40%) were from never, and minority was 7(5.60%) belonged to rarely in rural schools. The majority of participants (55, 44.00%) belonged to the never category, and a minority was 14(11.20%) belonged to the sometimes category. The difference is found to be statistically significant ( $\chi^2$ : 22.790) (P: 0.0001). Comparison between rural and urban areas in the majority of students. Has anyone forced you to take drugs? 82(65.60%) were always, and minority was 0(0.000%) belonged to never in rural schools. The majority of participants Has anyone forced you to take drugs 104 (83.20%) were belonged to always and minority was 3 (2.40%) were belonged to sometimes. The difference is found to be statistically significant ( $\chi^2$ : 39.733) (P: 0.0001).

### **Sexual Education:**

Comparison between rural and urban areas in the majority of students. Have you ever attended any sexual education? 40(32.00%) were from always, and a minority were

6(4.80%) who belonged to never in rural schools. The majority of participants have you ever attended any sexual education, 72(57.60%) always, and a minority were 10(8.00%) sometimes. The difference is found to be statistically significant ( $\chi^2$ : 26.397) (P: 0.0001). Comparison between rural and urban areas showed that the majority of students had their parents or teachers give information about sex; 46(36.80%) were from never, and a minority of 9(7.20%) belonged to rarely in rural schools. The majority of participants had their parents or teachers give information about sex; 34(27.20%) belonged to never, and a minority of 29(23.20%) belonged to always. The difference is found to be statistically significant ( $\chi^2$ : 20.861) (P: 0.0001). Comparison between rural and urban students in the majority of students have known about sexually transmitted diseases like STD, HIV, VDRL, chlamydia, and syphilis. 43(34.40%) were from always, and minority was 17(13.60%) belonged to rarely in rural schools. The majority of participants have known about sexually transmitted diseases like STDs, HIV, VDRL, chlamydia, and syphilis. 40(32.00%) belonged to never, and minority was 24(19.20%) belonged to always. The difference is found to be statistically significant ( $\chi^2$ : 8.3550) (P: 0.0390).

### **Association between health behaviour of adolescents attending urban and rural schools**

#### **Rural:**

In rural adolescents' correlations among physical activity with sleeping pattern, a calculated value (0.0010) is less than the P (<0.05) value which shows that there is a significant association between physical activity with sleeping pattern. In rural adolescents, correlations among substance abuse and physical activity, a calculated value (0.0010) is less than the P (<0.05) value, which shows that there is a significant association between substance abuse and physical activity. In rural adolescents, correlations among sexual education with nutritional pattern and sleeping pattern were calculated values (0.0001) and (0.0410), which are less than the P(<0.05) value, indicating a significant association between sexual education and nutritional pattern and sleeping pattern.

#### **Urban:**

In urban adolescents, correlations among sleeping patterns with nutritional a calculated value (0.0060) are less than the P (<0.05) value which shows that there is a significant association between sleeping pattern with nutritional pattern. In urban adolescents, correlations among physical activity with nutritional pattern and sleeping pattern,



calculated values (0.0001) and (0.0001), are less than the  $P (<0.05)$  value which shows that there is a significant association between physical activity with nutritional pattern and sleeping pattern. In urban adolescents, correlations among substance abuse with nutritional status, sleeping pattern, and physical activity are calculated values (0.0010), (0.0040), and (0.0010), respectively, and are less than the  $P (<0.05)$  value, which shows that there is a significant association between substance abuse and nutritional status, physical activity. In urban adolescents, correlations among sexual education with nutritional pattern, physical activity, and substance abuse a calculated value (0.0130), 0.0020) and (0.0001), which is less than the  $P (<0.05)$  value which shows that there is a significant association between sexual education with nutritional pattern, physical activity, and substance abuse.

### **Comparison of rural and urban:**

While a comparison between rural and urban adolescents' health behaviour of sleeping pattern with nutritional pattern, a calculated value (0.0010), is less than the  $P (<0.05)$  value which shows that there is a significant association between sleeping pattern with nutritional pattern. While comparing rural and urban adolescents' health behaviour of physical activity with nutritional pattern and sleeping pattern, the calculated values (0.0001) and (0.0001) are less than the  $P (<0.05)$  value which shows that there is a significant association between physical activity with nutritional pattern and sleeping pattern. While comparison between rural and urban adolescents' health behaviour of substance abuse with nutritional pattern, sleeping pattern, and physical activity a calculated value (0.0030), (0.0010) and (0.0001), is less than  $P (<0.05)$  value which shows that there is a significant association between substance abuse with nutritional pattern, sleeping pattern, and physical activity. While comparison between rural and urban adolescents' health behaviour of sexual education with nutritional pattern, sleeping pattern, physical activity, and substance abuse a calculated value (0.0001), (0.0090), (0.0180), and (0.0020) is less than  $P (<0.05)$  value which shows that there is a significant association sexual education with nutritional pattern, sleeping pattern, physical activity, and substance abuse.

### **Conclusions**

A total of 250 adolescents in the age group of 13-16 years from urban and rural schools were included in the study. Rural participants were 125, and urban participants were 125. In the present study, a comparison of the health behaviour of adolescents in urban and rural schools. Unpaired t-test was used to analyse the data. The t-value of sleeping pattern

(-2.8661), substance abuse (-3.6742), and sexual education (-2.1321) were higher than the table value with a 0.05 level of significance. There was a significant association between the health behaviour of urban and rural school-going adolescents with sleeping patterns, physical activity, substance abuse, and sexual education. At the 0.05 level of significance.

#### **Nursing implication:**

Adolescent health behaviours are a growing concern, shaped by multiple influencing factors. Key areas include nutritional habits, levels of physical activity, sleep patterns, substance use, and access to sexual health education. These behaviours play a crucial role in shaping long-term health outcomes and overall well-being.

#### **Nursing Practice:**

Adolescent health behaviours are a growing concern, shaped by multiple influencing factors. Key areas include nutritional habits, levels of physical activity, sleep patterns, substance use, and access to sexual health education. These behaviours play a crucial role in shaping long-term health outcomes and overall well-being.

#### **Nursing Education:**

Student nurses can be educated regarding the health behaviour of adolescents so that they can educate parents, caregivers, and school-going adolescents about improving lifestyle and developing positive attitudes.

#### **Nursing Administration:**

The nurse administrator working in the hospital and community setting can plan for periodic checkups for the school-going adolescents to identify their health behaviour and conduct health programs.

#### **Nursing Research:**

Nurse researchers must possess a clear understanding of the healthcare system. By developing and applying new theories, they can enhance nurses' knowledge, skills, and attitudes, thereby elevating the quality, status, and professional standards of nursing practice.

## **Limitations of the Study**

This study is limited to,

- A structured knowledge questionnaire was used to collect data.
- The health behaviour of adolescents was assessed in selected schools.

## **Recommendations**

- The study may be replicated on a larger sample to enhance the generalizability of the findings.
- Future research can focus on parents or caregivers to evaluate their knowledge of adolescent health behaviours and contributing factors.
- Similar studies can be conducted in diverse settings and among different age groups to compare outcomes and broaden applicability.

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