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A Comparative Study to Assess the Health Behaviour among the Adolescents in Selected Government High Schools of Urban and Rural Areas of Kamrup District, Assam

Rituporna Dutta[1], Abha Rani Chamuah[2]

[1]MSc Nursing, Child Health Nursing, Regional College of Nursing (Corresponding author)

[2]Associate Professor, Pediatric Nursing, Regional College of Nursing

Abstract: ***Introduction: Health behaviour is the activity undertaken by individuals for the purpose of maintaining or enhancing their health, preventing health problems or achieving positive body image. Actions that can be classified as Health Behaviours are many; examples including smoking, substance use, diet, physical activity, sleep, risky sexual activities, health care seeking behaviours and adherence to prescribed medical treatment. Adolescents are the young people aged between 10-19 years. It is a transitional stage of physical, physiological and psychological development. Morbidity and mortality occurring in this age group is mostly due to preventable causes. The heath status of an adolescent determines the health status in his/her adulthood. This comparative study was conducted on the health behaviour among the adolescents of selected government high schools of urban and rural areas of Kamrup District, Assam. Methods: It was a comparative descriptive study. Sample size was 144. Data were collected by using a self structured questionnaire, in the month of March, 2020. Descriptive and inferential statistics were used to analyse the data. Results: Findings of the present study revealed that in urban area, majority i.e. 63.9% of the adolescents had moderately adequate health Behaviour score while 31.9% had inadequate and 4.2% had adequate Health Behaviour score. In rural area, majority 65.3% had moderately adequate Health Behaviour score while 33.3% had adequate and 1.4% had inadequate Health Behaviour score. Mean score percentage of overall Health Behaviour among urban adolescents was 74.18% and among rural adolescents was 82.40%. Mean score was 89.02 (±6.61) for urban area and 98.88 (±5.90) for rural area. Area wise analysis of Health Behaviour showed that highest mean score was obtained for tobacco use (18.88±1.96) and lowest mean score was obtained for exercise pattern (9.06±2.56) in urban area. In rural area, highest mean score was obtained for tobacco use (19.85±2.91) and lowest mean score was obtained for exercise pattern (10.89±2.14). Comparison of overall Health Behaviour by using unpaired t-test, revealed that there was a significant difference of the overall Health Behaviour among the Adolescents in selected government high schools of urban and rural area. (t=9.44, P< 0.001 at 0.05 level of significance). Area wise comparison of Health Behaviour revealed that there was a significant difference of the area wise Health Behaviour among the Adolescents in selected government high schools of urban and rural area. (t= 8.55, P< 0.00001 for Nutrition / diet pattern, t=4.66, P< 0.00001 for exercise, t=4.12, P=0.00004 for sleep pattern, t= 5.17, P<0.00001 for alcohol use, t=2.35, P=0.0196 for tobacco use and t=3.83, P=0.00005 for drug use). No significant association was found between Health Behaviour among the Adolescents and selected demographic variables. Conclusion: On the basis of the findings of the study, in can be concluded that majority of the adolescents had moderately adequate level of Health Behaviour in both urban and rural area. Comparison of Health Behaviour revealed that rural Adolescents had better level of Health Behaviour than their urban counterparts.***

Keywords: Adolescents, Health behaviour, Government high school, Urban, Rural, Nutrition, Exercise, Sleep pattern, Alcohol, Tobacco, Drug.

1. Introduction

Health behaviour is the activity undertaken by individuals for the purpose of maintaining or enhancing their health, preventing health problems or achieving positive body image.[1] Health behaviours, sometimes called health related behaviours, are actions taken by individuals that affect health or mortality. Actions that can be classified as health behaviours are many; examples including smoking, substance use, diet, physical activity, sleep, risky sexual activities, health care seeking behaviours and adherence to prescribed medical treatment.[2] Adolescents are the young people aged between 10-19 years. It is a transitional stage of physical, physiological and psychological development. Morbidity and mortality occurring in this age group is mostly due to preventable causes. The heath status of an adolescent determines the health status in his/her adulthood.[3]

Adolescents are considered as nutritionally vulnerable segment of the population. Eating patterns of adolescents may be influenced by both internal and external factors. Internal factors include: self image, physiological needs and individual health, values, preferences and psychosocial development. External factors include: family habits, friends, social and cultural values and rules, media, trends, experiences and the individual knowledge.[4]

Adolescence provides opportunity to correct nutritional deficiencies that may have occurred in early life and to catch up on growth, and to establish good dietary behaviours.[5] Research has shown diminishing hours of sleep among adolescents in both developing and countries. There have been reports of poor sleep hygiene among adolescents. Some major contributors to poor sleep hygiene include excessive use of mobile phones, TV, internet and social media. Mobile phones have become ubiquitors in India.[6] People are most likely to begin abusing drugs including tobacco, alcohol and

illegal and prescription drugs during adolescence and young adulthood. By the time they are seniors, almost 70% of high school students will have tried alcohol, half will have taken an illegal drug, nearly 40% will have smoked a cigarette and more than 20% will have used a prescription drug for non medical purpose.[7]

Alcohol is the most common drug of abuse in adolescents, more than tobacco and other illicit drugs. Misuse of alcohol among adolescents is an international problem. In fact, 320,000 young people aged 15-29 die each year from alcohol related causes, 9% of all deaths in that age group.[8]

According to 2017 Monitoring the Future Survey, 9.7% of 12th graders, 5% of 10th graders and 1.9% of 8th graders use cigarette in the past month. Analysis of the 2012 National Youth Tobacco Survey found that 20.8% of current adolescent tobacco users reported wanting to use tobacco within 30 minutes of waking-a classic symptom of nicotine dependence.[9]

India is the second largest consumer of tobacco. The prevalence of tobacco use was the highest in north eastern states, according to a recently released factsheet from the 2016-17 Global Adult Tobacco Survey (GATS 2) report. GATS-2 also reports that 28.6% of the population consume tobacco in any form, 10.7% smoke, and 21.4% use smokeless tobacco. Khaini (a form of SLT) and beedis are the dominant forms of tobacco consumed in India, at 11% and 8%, respectively.[10] GATS-2 Assam reported that 48.2% of all adult in Assam currently use smoke or smokeless tobacco. The mean age at initiation of tobacco use is 18.5 years.[11]

Substance abuse apart from tobacco and alcohol is one of the major emerging problems among the young population and needs to be tackled effectively. The National Household Survey by UNODC showed that 3.0 per cent of males consumed cannabis and 0.1 per cent opiates with common substances used being alcohol, tobacco, cannabis, cocaine and heroin.[12]

So many behaviours healthy or unhealthy that impact the rest of our lives begin in adolescence. The health sector cannot stand and tell people they are sick because of the ways they use tobacco and alcohol, and their attitude to diet and exercise, it does not do a better job of helping people develop healthy habits as adolescents.[13]

While research on adolescent health has developed tremendously in the past decades, it is still at an early stage and not cumulative. A large number of recommendations called for increased research on the interactive, bio-psychosocial determinants of risk behaviours, ranging from individual biological factors, such as hormones and pubertal development, to large social factors and contexts such as peers, families, schools and communities. A large set of recommendations focused on the need to map patterns of risk behaviours and the trajectory of risk behaviours over time.[14]

1.1 Objectives

Objectives of the study were-

1) To assess the Health Behaviour among the Adolescents in selected government high schools of urban area.
2) To assess the Health Behaviour among the Adolescents in selected government high schools of rural area.
3) To compare the Health Behaviour among the Adolescents in selected government high schools of urban and rural area.
4) To find out the association between the health behaviour among the adolescents and selected demographic variables such as age, gender, religion, education of parents, occupation of parents, type of family and source of health information.

2. Materials and Methods

Research design: A comparative descriptive survey design was used to carry out the study.

Settings: Selected government high schools in urban and rural areas of Kamrup district, Assam. Hatigaon High School located in the Hatigaon region in the southern part of Kamrup (M) and Narakasur High School located in the Kahilipara region of Kamrup (M) were the selected urban settings. Schools selected from Kamrup (R) were Agdola Chariali High School and Nanara High School, located in a rural area namely Baihata Chariali which is approximately 38 km towards South from Kamrup (M). The target population for present study was the adolescents studying in 9th and 10th standards of selected government high schools of urban and rural areas of Kamrup district, Assam.

Sample: The sample of the study consisted of a total of 144 adolescents, 72 of which were studying in the selected government high schools of urban area and 72 were studying in the selected government high schools of rural area.

Sampling technique

The sampling technique used was multistage random sampling.

Sampling criteria

Inclusion criteria

- Adolescents studying in 9th and 10th standards in selected government high schools of urban and rural areas.
- Adolescents who were willing to participate in the study.

Exclusion criteria

- Adolescents who were sick or absent at the time of data collection.

Data Collection tools

Based on the objectives of the study, after in depth review of related literature and consultation and discussion with experts, a structured questionnaire was developed.

The data collection tool prepared by the investigator consisted of two sections:

Section-I: Demographic proforma including the variables like age, gender, class, religion, education of father, education of mother, occupation of father, occupation of mother, type of family and sources of health information.

Section-II: A 4-point Likert Scale to collect information regarding Health Behaviour among the Adolescents comprising of 40 items including the areas- nutrition/diet pattern, exercise, sleep pattern, alcohol use, tobacco use and drug use. Each item carried a lowest score of 0 and highest score of 3. The highest possible score of the questionnaire was 120 and lowest possible score was 0.

Ethical consideration

1) Permission was obtained from Inspector of Schools, Kamrup (Metro) and Inspector of schools, Kamrup (Rural).
2) Permission was obtained from Head Masters of the selected schools.
3) Written and informed consent was obtained from all the participants of the study and purpose of the study was explained.
4) The participants were assured of confidentiality and anonymity.

Procedure of data collection

Data collection was done from 02.03.20 to 14.04.20. Prior to data collection, formal written permission was obtained from Inspector of Schools, Kamrup (Metro), Inspector of Schools, Kamrup (Rural) and from the Head Masters of the selected government high schools for conducting the study. Self introduction was given by the investigator to the participants and purpose of the study was explained. An informed consent was obtained from each of the participants after explaining the procedure. Confidentiality and anonymity were assured. The participants took 30-35 minutes to administer the questionnaire. Data was then compiled for analysis.

3. Results

Table 1: Demographic data of study subjects

Demographic variable	Characteristics	Urban		Rural	
		Frequency	Percentage	Frequency	Percentage
Age	11-13 yrs	4	5.5	6	8.3
	13-16 yrs	57	79.2	61	84.7
	16-19 yrs	11	15.3	5	7
Gender	Male	38	52.8	36	50
	Female	34	47.2	36	50
Class	9^{th} standard	48	66.7	39	54.2
	10^{th} standard	24	33.3	33	45.8
Religion	Hindu	38	52.8	63	87.5
	Muslim	33	45.8	8	11.1
	Christian	1	1.4	1	1.4
Education of father	Illiterate	1	1.4	0	0
	Primary school	8	11.1	5	6.9
	High school	20	27.8	10	13.9
	Higher Secondary	22	30.5	27	37.5
	Graduate and above	19	26.4	26	36.1
	Professional	2	2.8	4	5.6
Education of mother	Primary school	6	8.3	8	11.1
	High school	27	37.5	25	34.7
	Higher secondary	26	36.1	28	38.9
	Graduate and above	11	15.3	11	15.3
	Professional	2	2.8	0	0
Occupation of father	Unemployed	0	0	2	2.8
	Daily wage worker	15	20.8	7	9.7
	Business	24	33.3	25	34.7
	Private	22	30.6	9	12.5
	Government service	10	13.9	28	38.9
	Professional	1	1.4	1	1.4
Occupation of mother	Housewife	27	37.5	47	65.3
	Business	21	29.2	4	5.6
	Private service	18	25	12	16.6
	Government service	6	8.3	9	12.5
Type of family	Nuclear family	66	91.7	54	75
	Joint family	6	8.3	18	25
Sources of health information	Health personnel	4	5.6	7	9.7
	Mass media	22	30.5	21	29.2
	News paper	4	5.6	8	11.1
	Books	15	20.8	6	8.3
	Teacher	27	37.5	30	41.7

Table-1 shows that in urban area, majority i.e. 57 (79.2%) of the adolescents belonged to the age group 13-16 years, while in rural area, majority of the adolescents i.e. 61 (84.7%) belonged to the age group 13-16 years. Majority 38 (52.8%) of the adolescents in urban area were males, while in rural area, number of male and female were equal i.e. 36 (50%). Majority 48 (66.7 %) adolescents were studying in 9th standard and 24 (33.3 %) were studying in 10th standard in urban area. In rural area, 39 (54.2%) adolescents were studying in 9th standard while 33 (45.8%) in 10th standard. Majority of the adolescents were Hindu, i.e. 38 (52.8%) in urban and 63 (87.5 %) in rural area.

Fathers of maximum 22(30.5%) adolescents studied up to higher secondary level, in urban area. In rural area, majority of the fathers of adolescents studied up to higher secondary level i.e. 27 (37.5%). Table-1 shows majority of the mothers of adolescents in urban area i.e. 27 (37.5%) studied up to high school level, while in rural area, 28 (38.9%) of the mothers studied up to higher secondary level.

It was found that majority i.e. 24 (33.3%) of the fathers' occupation was business in urban area. In rural area, occupation of majority of the fathers, i.e. 28 (38.9%) were government servants. Majority i.e. 27 (37.5%) and 47 (65.3%) of the mothers were housewives in both the settings. Majority of the adolescents in urban and rural area belonged to nuclear families i.e. 66 (91.7%) and 54 (75%) respectively.

Table-1 also shows that source of health information for majority of the adolescents was teachers, i.e. 27 (37.5%) in urban and 30 (41.7%) in rural area.

Table 2: Frequency and Percentage distribution of Adolescents according to Level of Health Behaviour

Level of health behaviour	Urban		Rural	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Inadequate	23	31.9	1	1.4
Moderately adequate	46	63.9	47	65.3
Adequate	3	4.2	24	33.3
Total	72	100	72	100

Maximum score= **120**

It was found that majority, i.e. 46 (63.9%) of the adolescents in urban area had moderately adequate score of Health Behaviour while 23 (31.9%) had inadequate and 3 (4.2%) had adequate score. In rural area, majority 47 (65.3%) had moderately adequate score of Health Behaviour while 24 (33.3%) had adequate score and 1 (1.4%) had inadequate score.

Table 3: Comparison of overall Health Behaviour of Adolescents of urban and rural area

Area	Mean	SD	Mean Difference	SD difference	df	t-value	P-value
Urban	89.02	±6.61	9.87	±0.71	142	9.44	<0.001*S
Rural	98.88	±5.90					

***Significant at P< 0.05**

Table-3 shows that mean score of overall Health Behaviour among urban Adolescents was 89.02 (74.18%) ±6.61 and among rural Adolescents was 98.88 (82.40%) ±5.90. There was a significant difference of overall Health Behaviour among the Adolescents in selected government high schools of urban and rural area.

Table 4: Area wise comparison of Health Behaviour among Adolescents of urban and rural area

Area	*Location*	*Mean*	*SD*	*Mean Difference*	*t-value (142 df)*	P-value
Nutrition/ Diet pattern	Urban	13.40	±2.63	*0.79*	*8.55*	<0.00001*S
	Rural	16.64	±1.84			
Exercise	Urban	9.06	±2.56	*0.42*	*4.66*	<0.00001*S
	Rural	10.89	±2.14			
Sleep pattern	Urban	13.68	±2.23	*0.3*	*4.12*	0.00004*S
	Rural	15.11	±1.93			
Alcohol use	Urban	17.11	±2.24	*0.64*	*5.17*	<0.00001*S
	Rural	18.79	±1.60			
Tobacco use	Urban	18.88	±1.96	*0.95*	*2.35*	0.0196 *S
	Rural	19.85	±2.91			
Drug use	Urban	16.89	±1.42	*0.76*	*3.83*	0.00005*S
	Rural	17.60	±0.66			

***Significant at P< 0.05**

Data presented in **Table-4** shows that there was a significant difference of area wise Health Behaviour among the Adolescents of urban and rural area.

The association between level of health behaviour among the adolescents and selected demographic variables was tested using Chi square test. In urban area, the obtained chi square values were 1.23 with P-value 0.874 for Age, 1.20 with P-value 0.548 for Gender, 2.49 with P-value 0.646 for Religion, 4.87 with P-value 0.900 for education of father, 3.45 with P-value 0.903 for education of mother, 3.31with P-value 0.913 for occupation of father, 1.49 with P-value 0.960 for occupation of mother, 2.94 with P-value 0.230 for type of family and 12.13 with P-value 0.146 for sources of health information.

In rural area, the obtained chi square values were 1.11 with P value 0.893 with for Age, 1.02 with P-value 0.600 for Gender, 0.71 with P-value 0.950 for Religion, 5.64 with P-value 0.688 for education of father, 4.25 with p-value 0.643 for education of mother, 14.4 with P-value 0.154 for occupation of father, 1.05 with P-value 0.984 for occupation of mother, 3.19 with P-value 0.203 for type of family and 7.68 with P-value 0.465 for source of health information. These findings reveal there was no significant association between the level of health behaviour and selected demographic variables in both urban and rural setting.

4. Discussion

Health behaviour score of adolescents studying in urban area revealed that majority of the participants i.e. 63.9% had moderately adequate Health Behaviour score, 31.9% had inadequate Health Behaviour score and 4.2% had adequate score. In rural area, majority 65.3% had moderately adequate score, 33.3% had adequate and 1.4% had inadequate Health Behaviour score.

A similar study was conducted by Ann J. on the Health Behaviour of Adolescents of urban and rural schools of Mangalore, India. This comparative study revealed that, among the adolescents from urban schools, majority of the participants (60%) had moderate knowledge of heath behaviour while 3.3% had very good knowledge. Among the rural school adolescents, majority (50%) had moderate knowledge and 1.7% had poor knowledge of health behaviour.[15]

Present study findings showed that the highest mean score was found in the area of tobacco use and lowest mean score was found in case of exercise pattern, among both urban and rural adolescents. The mean score percentage of tobacco use were 78.66% and 82.70% in urban and rural area respectively; while the mean score percentage for exercise were 60.40% and 72.60% in urban and rural area respectively.

Study conducted by Ann J. showed that higher percentage of mean score was obtained for nutrition/eating pattern (48.68%). Mean score of sleep pattern was 38.33% and lowest mean score was found in the area of sexual and contraceptive practice (2.67%) in urban area. The study findings also showed that in rural area, highest mean score was obtained in the area of sleep pattern (64.11%) while lowest score was 32.56% for sexual and contraceptive practices.[15]

While comparing the overall Health Behaviour of Adolescents in urban and rural areas, the study findings revealed that mean score percentage of knowledge of Health Behaviour in urban area was 74.17% and in rural area 82.40%. By using unpaired **t**-test, this difference was found to be statistically significant.

Area wise comparison of Heath behaviour among the Adolescents of urban and rural area revealed that there was significant difference of Health Behaviour in the areas of nutrition/ diet pattern, exercise, sleep pattern, alcohol use, tobacco use and drug use. Adolescents from rural schools had better mean score in all the areas of Health Behaviour, than their urban counterparts. The mean score percentage of Health Behaviour were 74.18% in urban area and 82.40% in rural area. These findings clearly depicts that the rural adolescents had better level of Health Behaviour than the urban adolescents.

This study was supported by a study conducted by Das N, Chattopadhyay D, Chakrabprty S, Dasgupta A, Akbar F on the health risk behaviour of mid adolescent school students in a rural and urban area of West Bengal, India. The findings of this study showed that overall occurrence of high risk behaviour were higher among urban students (18.8%) than students from rural back ground (6%). Occurrence of high risk behaviour in the domains of diet, physical activity, mental health and injury issues were found to be higher in urban students. Rural students had lower risk behaviour patterns in comparison to their urban counterparts in all the domains except personal hygiene.[16]

Another study conducted by Kishore J, Singh A, Grewal I, Singh SR, Roy K. on the risk behaviour in an urban and a rural male adolescent population, revealed that though there was a high prevalence of risk behaviour in both urban and rural adolescents, except for smoking all other risk behaviours were more in urban adolescents than the rural adolescents. Consuming alcohol, smoking, pre-marital sexual intercourse and consuming bhang were present in 32.2%, 25.1%, 12.5% and 11.5% of the urban students while 1.3%, 48.7%, 11.2% and 16.5% of those residing in rural village respectively.[17]

Kundarpur R, Baisil S. conducted a study to find the difference in Physical Activities (PA) among urban adolescents to that of rural in Mangalore. Findings showed that total Physical Activity Score for rural areas was 453.5 and for urban areas 376.3. The difference in proportion was statistically significant. There was a notable difference in the total number of students having physical activities in the evening after school hours each day, when the urban and rural areas were compared. The study concluded that that the adolescents studying in the schools of rural areas had better physical activities compared to their urban school counterparts.[18]

In contrast to the present study, another cross sectional study conducted by Nagendra K and Koppad R. on the prevalence of health risk behaviour among adolescents of Shivamogga, the results of the study showed prevalence of drinking alcohol was 2.08% (n=5) and 1.25% (n=3) in urban and rural area respectively. 2.92% of urban adolescents and 2.50% of rural adolescents were found to smoke tobacco. But these differences in alcohol and tobacco use were not statistically significant.[19]

5. Conclusions

In the present study the investigator made an attempt to describe and compare the Health Behaviour patterns of Adolescents in two different settings i.e. urban and rural Kamrup, Assam. On the basis of the findings of the study, in can be concluded that majority of the adolescents had moderately adequate level of Health behaviour in both urban and rural area. Comparison of Health Behaviour revealed that rural Adolescents had better level of Health Behaviour than their urban counterparts.

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