



Original Article

A study on Socio- Demographic Profile, Prevalence of Hypertension and its association with other factor in school going Adolescents of Gorakhpur City

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Abstract

Background: Hypertension is a chronic condition of concern due to its role in causation of coronary heart diseases, stroke and other vascular complications. Assessment of prevalence of hypertension in school going adolescents is one of the best way to assess the prevalence of hypertension among adolescents. So the Objectives of the study is to determine the prevalence of hypertension among the school going adolescents of Gorakhpur city.

Method: A cross-sectional study was carried out from September 2013 to August 2014 on 520 school going adolescent (less than 16 years of age) ,4 schools selected from boys , girls and co-education category. A preforma was filled by the students and blood pressure (BP) measurements were taken for each student.

Result: Prevalence of pre- hypertension & hypertension among early adolescent was (5.7%) and (4.03%) compared to mid adolescent age group is (10.81%) & (7.21%) respectively. It has been found that Hypertension was more prevalent in males (6.59%) compared to female (4.05%).

Conclusion: Prevalence of Hypertension in school going adolescent of Gorakhpur city is 5.38%. It has been found that as the age increases, percentage of hypertension also increases.

Keywords: Hypertension, Adolescent school students.

Introduction

Hypertension is fast emerging as a major health problem amongst all school adolescents, particularly in urban areas. Regular screening of the students for this is required for preventing the emergence of complications later in life.¹ It is the commonest cardiovascular disorder posing a major public health challenge. Now a days,

hypertention increasing among the adolescents. According to the survey report, the prevalence of hypertension was varying from 17 to 21 % in all the states with marginal rural– urban differences.² Hypertension is one of the diseases which is diagnosed and treated in 25% of the cases only making it largely an under-diagnosed problem.² There is plenty of evidence to suggest that

hypertension begins in childhood and adolescence.^(3,4,5) The asymptomatic nature of hypertension in early phases of its onset during adolescence increases the chances of developing complications during adulthood.⁶ This is the study to assess the the prevalence of hypertention in school going adolescents.

Aims and Objective

To determine the prevalence of hypertension among the school going adolescents of Gorakhpur city.

Methods

The present cross sectional study was carried out between September 2013- August 2014 on school going adolescents (10 -16 years of age) studying in schools of Gorakhpur city. The study tool

comprised a semi- structured schedule. Sample size (n) was calculated 237 by using formula $n = (z)^2 p (1-p)/d^2$ with prevalence $p=5.9\%$ as per Sharma et al⁷, precision $d=3\%$ and 95% confidence Interval was taken. 4 schools each in boys, girls and coeducation categories were randomly chosen from the list of urban schools of Gorakhpur city, school going adolescents were randomly chosen from each school with equal representative from each class (5 th to 10 th standard).A design effect of 2 was applied to the sample size and non- response of 20% .Finally 600 students were selected from 12 school of Gorakhpur city.

60 adolescent students parents did not give consent while 20 adolescents students were absent during scheduled visits were excluded. So finally, 520 students were studied.

Result

Table 1: Socio- demographic profile of school going adolescent, Gorakhpur (n=520)

Charecterstics		Male n= 273(52.5%)	Female n= 247(47.5%)	Total n= 520
Type of Family	Nuclear	214(54.6%)	178(45.1%)	392
	Joint	58 (45.3%)	70 (54.7%)	128
Education of Father	Illiterate	10(43.4%)	13(50%)	23
	Primary	51(51%)	49(49%)	100
	Middle School	44(56%)	35(44%)	79
	High School	58(53.6%)	50(46.4%)	108
	Intermediate	43(46.24%)	50(42.74%)	93
	Graduate	67(57.26%)	17 (48.5%)	117
Education of Mother	Illiterate	18(51.5%)	17(48.5%)	35
	Primary	53(51.5%)	49(48.04%)	102
	Middle School	61(58.67%)	44(41.33%)	105
	High School	43(49%)	44(51%)	87
	Intermediate	37(47.7%)	41(52.2%)	78
	Graduate	61(53.48%)	52(46.51%)	113
Occupation of father	Professional	26(54.54%)	22(45.45%)	48
	Farmer	24(65.11%)	13(34.88%)	37
	Clerical, Service	84(50.98%)	81(49.11%)	165
	Business	56(50.91%)	54(49.09%)	110
	Worker	86(53.75%)	74(46.25%)	160
Occupation of mother	Professional	22(62.86%)	13(37.14%)	35
	Housewife	121(51.85%)	113(48.14%)	234
	Clerical, Service	31(64.58%)	17(35.42%)	48
	Worker	48(48.48%)	51(51.52)	99
	Business	52(50%)	52(50%)	104
Religion	Hindu	255(54.14%)	216(45.85%)	471
	Muslim	22(61.11%)	14(38.89%)	36
	Other	9 (69.23%)	4(30.77%)	13
Caste	General	97(47.4%)	108(52.5%)	205
	OBC	73(55.73%)	58(44.27%)	131
	SC/ST	102(55.74%)	81(44.26%)	183

Graduate includes graduate, post graduate and professional.

Worker includes skilled, Semi- skilled ad unskilled worker.

Table 1: shows the Socio demographic characteristics of school going adolescents of Gorakhpur city. Higher percentage of males were from nuclear family (54.6%) whereas more number of girls were from joints family. Maximum 108 students father had studied up to

high school while majority mother had studied upto middle or primary school. Maximum father occupation was clerical and service type. While that of mother was housewife. Majority of students were from hindu family.

Table 2 Distribution of Blood Pressure in school going adolescent of Gorakhpur city per their age (n= 520)

Age group	Normal	Pre Hypertensive	Hypertensive
Early Adolescent	269(90.2%)	17(5.7%)	12(4.03%)
Mid Adolescent	182(81.98%)	24(10.81%)	16(07.21%)
Total	451(86.73%)	41(7.88%)	28(5.38%)

Chi square= 2.53, df= 1, P= 0.112

Table 2: shows the prevalence of Hypertension is 28 (5.38%) and distribution of blood pressure in school going adolescents of Gorakhpur city as per their age. Prevalence of Hypertension was higher among mid adolescent 16(7.21%) compared to

early adolescents 12(4.03%). However the difference in the prevalence of hypertension in the two age group was not found to be statically significant.

Table 3 Distribution of Blood Pressure in school going adolescent of Gorakhpur city per their gender (n= 520)

	Normal	Pre Hyertensive	Hypertensive	Total
Male	232(84.98%)	23(8.41%)	18(6.59%)	273
Female	219(88.66%)	18(7.28%)	10(4.05%)	247
Total	451(86.73%)	41(7.88%)	28(5.38%)	520

Chi square= 1.49, df= 1, P= 0.199

Table 3: shows the distribution of BP in reference to gender. Prevalence of Hypertension is 28(5.38%) in this study. Hypertension was more prevalent in male 18 (6.59%) compared to female 10 (4.05%). However the difference in the prevalence of hypertension in two gender groups was not found to be statistically significant.

Discussion

In the present study, 520 students (age 10- 16 years) were studied. Among them 273(52.5%) were males and 247(47.5%) females. Similar distribution of Adolescents was reported by M. B. Soudarssanane et.al in their study (351 males and 322 females)⁸ and Rao S et.al in school going students in urban area (males 51.55% and female 48.45%)⁹.

In the present study the prevalence of Hypertension among the school going adolescents was found to be 5.38%. Similar finding have been reported by previous studies across India among adolescents. Sharma et al in their study on school

going adolescents in Shimla, had reported the prevalence of Hypertension to be 5.9%.⁷ Niray Buch et al also found the prevalence of Hypertension of 6.48% among the school children of Surat city, Western India.¹⁰ However some previous studies like M B Soudarssanane et al in Pondicherry and Verma Vivek et al in Gujarat had reported a higher prevalence of Hypertension i.e. 8.5% and 9.2% respectively.^{8,11} Taksande et al reported the prevalence of 5.76% among rural school going children (6-16years).¹²

The present study reported the prevalence of hypertension of 4.02% among early adolescent age group and 7.21% in mid adolescent age group. This finding is consistent with that of Taksande et al, who also reported a rise in prevalence of hypertension to be with age.¹² VivekVerma et al also found that then blood pressure to be positively correlated with age.¹¹

In the present study, the prevalence of hypertension was found to be 6.59% among males and 4.05% in females. The difference was not

found to be statically significant. A previous study Savitha et al had also found no sex predilection for hypertension among males and females.¹³ In the present study prevalence of Hypertension was higher among males compares to females. Similar finding were reported by Rao et al who found a higher prevalence of Hypertension (12%) among boys compared to girls (9.7%).⁹

Conclusion

Prevalence of hypertension is 5.38%. prevalence of Hypertension is higher among the mid adolescent age student group (7.21%) as compared to early adolescent age students group(4.02%). Prevalence of Hypertension is higher among boys of adolescent boy students (6.59%) as compared to adolescent girl students (4.05%).

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