

Original Article

Awareness of non communicable diseases and their risk factors among rural school children

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Abstract

Introduction: Behavioral interventions for Non Communicable Diseases (NCD) abeyance would profit the most, if initiated at an early age. Major risk factors of NCDs are changing life style and behavior pattern which are largely due to practices adopted in younger age. Students' awareness about NCDs and their risk factors is an important part of population based prevention strategy.

Objective: To assess the awareness of NCDs and their risk factors among rural intermediate school children.

Methodology: A School based cross sectional study was conducted in Chiraigaon Community Development Block of Varanasi from July - Aug 2010. Intermediate school children from eight inter-colleges of Chiraigaon development block were the study subjects. Pretested questionnaire was used in the study and frequency and proportions were used to analyze the data.

Results: Less than one third of the children were aware about Diabetes and Hypertension (27% and 31% respectively). Only 18% knew about Body Mass Index (BMI) as an indicator of obesity. In general awareness of NCDs was more in boys than girl. **Conclusion:** Over all awareness of NCDs and their risk factors among students was not satisfactory. There is a need and scope for health education activity regarding NCDs and their risk factors to promote healthy life style among these school children.

Key words: Non Communicable Diseases, risk factors, school children

Introduction:

Changing life style patterns increase behavioral, psychological and biological risk factors levels for Non Communicable Diseases (NCDs) in the population. Owing to unusually higher inherent susceptibility to develop NCDs^{1,2} and rapidly changing life style patterns, South Asia more so India has experienced a dramatic rise in number of NCD cases. Fifty four percent of total estimated deaths in the South East Asia Region (2005) were NCD-related (Preventing chronic diseases: a vital investment: WHO global report., 2005)¹. NCDs are increasingly becoming a disease of poor and younger segments of the population. Contrary to popular opinion, available data demonstrate that nearly 80% of NCD deaths occur in low- and middle-income countries (Global status report on Non Communicable Diseases, 2010)². The major and potentially preventable risk factors of NCDs are associated with life style and behavior pattern which are largely due to practices adopted in younger age. In this age these risk factors are well tolerated and therefore barely perceived as harmful, but over time they may track and lead to eventual development of life style related diseases in later part of the life.

Intermediate school children are in the transition phase from adolescent to adulthood. This age group is known

for experimentation and vulnerability to adopt lifestyles predisposing to NCDs. Behavioral interventions for NCD abeyance would profit the most, if initiated in this age group. Hence students' awareness about NCDs and their risk factors is an important part of population based prevention strategy. Awareness level would also provide a baseline upon which, health promotional strategies can be developed. Objective of this study was to assess the awareness of NCDs and their risk factors among rural intermediate school children.

Material and Methods:

The present study was conducted in Chiraigaon Community Development Block of Varanasi, from July - Aug 2010. A school based cross sectional study was planned to accomplish the study objective. A list of all intermediate colleges in the study area was obtained from UP Board website which formed the sampling frame of the study. Out of 17 intermediate colleges located in Chiraigaon Community Development Block eight (with the intention to include at least 50% of them) were selected by simple random sampling. In each school, all the students who were present at the time of study were included in the study.

A pretested self administered questionnaire was used in this study. It consisted of questions pertaining to awareness of common NCDs like diabetes,

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hypertension and obesity and their risk factors. The study tool was translated to Hindi better understanding of the questions and anonymity was maintained throughout the study. Permission was obtained from the school principals before the data collection. The data so obtained was entered into a excel spread sheet and analysed using SPSS v16. Frequency and proportions were used for data analysis.. McNemars chi square test was applied to judge the association of

study variables with the awareness level. The level of statistical significance was set at 0.05 (two sided).

Results:

A total of 588 students participated in the study and of them 312 (53.1%) were boys and remaining were girls (46.9%). Majority (89.5%) of them were in the age group of 16-18 years

Table No.1 Distribution of study subjects according age and sex

Age (Years)	Boys		Girls		Total	
	No.	%	No.	%	No.	%
15	18	5.8	25	9.1	43	7.3
16	113	36.2	62	22.5	175	29.8
17	104	33.3	121	43.8	225	38.3
18	64	20.5	62	22.5	126	21.4
19	9	2.9	6	2.2	15	2.6
21	4	1.3	0	0.0	4	0.7
Total	312	100.0	276	100.0	588	100.0

Nearly one fourth (27.3%) and one third (30.5%) of the students were aware of diabetes and hypertension respectively (Table No.2).

Table No.2 Awareness of common NCDs among study subjects

NCD	Boys	%	Girls	%	Total	%	P
	No.	%	No.	%	No.	%	
Diabetes	90	28.8	70	25.5	160	27.3	0.370
Insulin use	57	18.3	54	19.6	111	18.9	0.688
Hypertension	105	33.7	74	26.8	179	30.5	0.070
Normal BP	159	51	144	52.2	303	51.5	0.771
Use of BMI	50	16	57	20.6	107	18.2	0.149

Almost one fifth (18.2%) of the students knew BMI as an indicator for obesity. Overall, awareness of NCDs was better among boys when compared to girls (Table No.2).

Obesity, increasing age and family history were the risk factors of diabetes according to 47.4%, 27% and 27.6% of the students, respectively (Table No.3).

Table No.3 Awareness of risk factors of diabetes mellitus

Risk factor	Boys		Girls		Total		P
	No.	%	No.	%	No.	%	
Alcohol intake	42	13.5	21	7.6	63	10.7	0.022
Tobacco use (any form)	48	15.4	81	29.3	129	21.9	<0.01
Obesity	126	40.4	153	55.4	279	47.4	<0.01
Age advancement	93	29.8	66	23.9	159	27.0	0.108
Familial	99	31.7	63	22.8	162	27.6	0.016
Lack of exercise	21	6.7	40	14.5	61	10.4	0.002

Only one tenth of the students considered that alcohol and sedentary life style as risk factors for diabetes. Awareness of diabetic risk factors, except for advancing age, was significantly ($p < 0.05$) more among boys in comparison to girls.

Tobacco use, obesity and alcohol were the risk factors for hypertension according to 54.1%, 47.4% and 46.9% of the students respectively (Table No.4). Awareness of high salt intake as a risk factor for hypertension was significantly more ($p < 0.05$) in girls while awareness of tobacco use for the same was significantly more ($p < 0.05$) among boys.

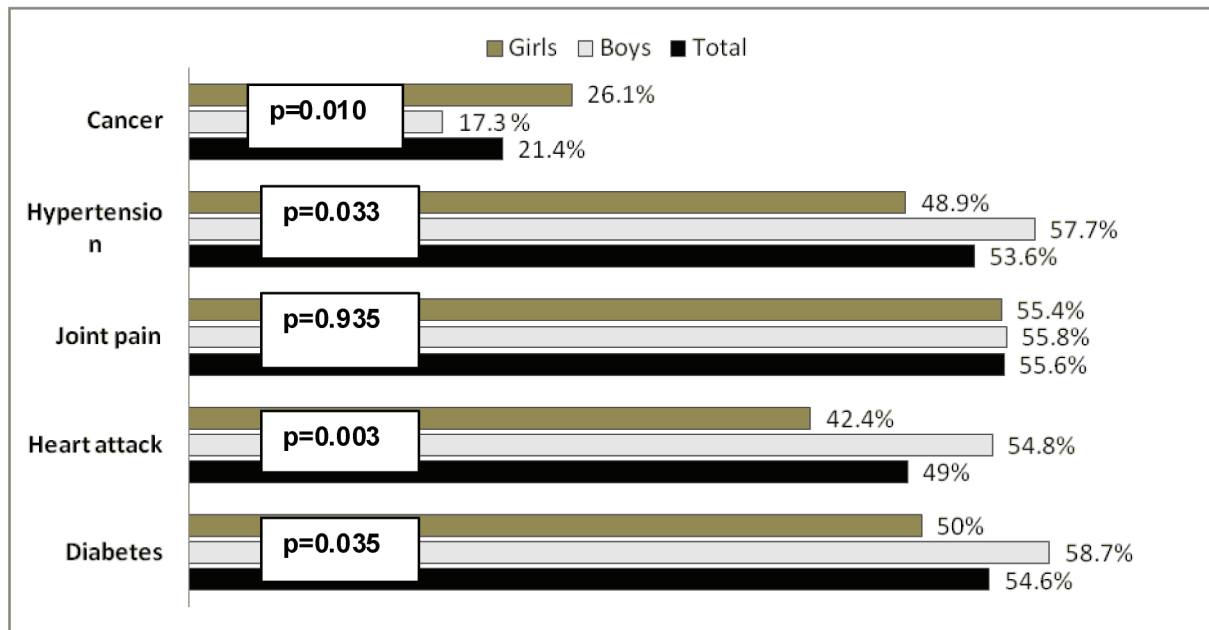
Table No.4 Awareness of risk factors of hypertension

Risk factor	Boys		Girls		Total		p
	No.	%	No.	%	No.	%	
Age advancement	72	23.1	54	19.6	126	21.4	0.300
Familial	42	13.5	36	13.0	78	13.3	0.881
Obesity	156	50.0	123	44.6	279	47.4	0.188
Alcohol intake	156	50.0	120	43.5	276	46.9	0.114
Tobacco Use (any form)	186	59.6	132	47.8	318	54.1	0.004
High salt intake	69	22.1	117	42.4	186	31.6	<0.01

More than half of the students were aware of the common complications of the obesity like diabetes, heart attack, joint pain and hypertension. Only 21.4% of them said cancer as the complication of obesity.

Awareness of complications of obesity, except for joint pain, was significantly more ($p < 0.05$) among boys than girls. (Table No. 5)

Table No.5 Awareness of complications of obesity



Discussion:

Adolescence is an age of transition and clearly recognized for its vulnerability to adoption of behavior predisposing to NCD development. Hence their

knowledge scope and behavioral pliability makes them an attractive group for intervention. The basic tenet of public health regarding primary prevention (health promotion and specific protection) thus acquires

contextual value. As a long term measure for NCD prevention health education is a priority in this population. Health education should reflect in increased awareness resulting in adoption of healthy behavior. The present study intended to assess the awareness level regarding NCDs and their risk factors among rural intermediate school children. The awareness level of the study participants regarding NCDs and their risk factors was unsatisfactory. However, awareness was significantly better ($p < 0.05$) among boys. Many studies have been conducted on students for awareness of NCDs from different parts of India and abroad. While comparability of these studies could obviously be limited (awareness has multiple determinants), some may be quoted for their scope. A study conducted by Shaikh RB et al⁵ among entry year students of a medical university highlighted that majority of the students (more than 70%) were aware about stress, high cholesterol, and obesity as the risk factors of hypertension. It also emphasized the relatively better knowledge scores among boys when compared to girls. Goel S, et al⁶ reported that 65.3% and 58.3% senior secondary school students of Chandigarh had knowledge about hypertension and diabetes, respectively. The present study from Varanasi also highlighted that awareness of modifiable risk factors for hypertension (tobacco use, high salt intake and sedentary life style) was better than awareness of non modifiable risk factors (age advancement and family history). [Table No. 4] Similar findings were reported by Shaikh RB et al⁵. Another study conducted by Jayakrishnan R et al⁷ among adolescents in a rural area of Kerala reported almost two thirds of the adolescents were aware of various hazards of smoking such as oral cancer, cardiovascular and respiratory diseases. Awareness on oral cancer and ban on smoking in public places was significantly higher among females when compared to males. ($p < 0.05$) This gender difference in NCDs awareness was contrary to the present study. Smoking, obesity and reduced physical activity were perceived as important top three risk factors for heart diseases in a urban school based study from Pune, Maharashtra⁸. A school based study on intermediate and secondary school male students in Saudi Arabia⁹ reported that few (<50%) of the students knew about the beneficial effects of physical activity in the prevention of heart disease, hypertension, diabetes mellitus. Students who knew that exercise protects from obesity were 7 times more likely to practice physical activity than students who had no such knowledge.

Conclusion:

Over all awareness of NCDs and their risk factors among students was not satisfactory. Awareness of NCDs and their risk factors among boys was better than girls. There is a need and scope for health education activity regarding NCDs and their risk factors to promote healthy life style among these school children.

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