Research Article

A comparative study on awareness about non-communicable diseases and their risk factors among government and private high school students of Davangere city

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Abstract

Background: The burden of non-communicable diseases (NCDs) is emerging as a major public health challenge for developing countries. According to WHO report, NCDs, especially cardiovascular diseases (CVDs), cancer (Ca), and diabetes mellitus (DM) account for 53% of all deaths in India. As highlighted in the WHO report 2002, just a few NCD risk factors account for the majority of NCD burden

Objectives: (1) To assess the awareness regarding the NCDs and their risk factors among high school students. (2) To compare the awareness about NCDs and their risk factors among students of government and private high school.

Materials and Methods: Cross-sectional study from July 1 to August 31, 2010 (2 months). Total 524 students of 8th, 9th, and 10th standard (226 students from government high school and 298 students from private high school) Pre-structured and pre- tested Questionnaire was used to collect data regarding awareness about common NCDs (DM, CVD, and Ca) and their risk factors among high school students.

Results: Total students interviewed were 524. From government school there were 226 (43.1%) students and from private school 298 (56.9%) Out of 406 school children who were aware about DM, 290 were from private school and 116 were from government school. Out of 478 school children who were aware about CVD, 294 were from private school and 184 from government school. Out of 438 school children who were aware about Ca, 282 were from private school and 156 were from government school. Awareness about DM, CVD, and Ca was low among government school children than private school children, which was statically significant. Awareness about risk factors of NCDs was poor in government school children than private school children.

Conclusion: Awareness about NCDs and their risk factors was very low in high school students. As compared to private high school students, government students were having poor knowledge about NCDs and their risk factors.

KEY WORDS: Non-communicable diseases, diabetes mellitus, cardiovascular diseases, high school children

Introduction

Worldwide current health scenario is facing the major public health challenges of non-communicable diseases (NCDs).

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The burden of NCDs is emerging as a major public health challenge for developing countries.[1] India stands in the midst of transition from the burden of communicable diseases to the burden of NCDs. According to WHO report, NCDs, specially cardiovascular diseases (CVD), cancer (Ca), and diabetes mellitus (DM) account for 53% of all deaths in India.[2] As highlighted in the WHO report 2002, just a few NCD risk factors account for the majority of NCD burden.[3,4] DM has now become a major health problem in India with an estimated 40 million people having diabetes in 2007.[5] An estimated 9.2 million reproductive years of life were lost in India due to CVD in 2000 with an expected increase of 17.9 million years in 2030.[6] According to WHO Report 2002, CVD will be the largest

cause of death and disability in India by 2020.[7] The number of Ca patients are also increasing in India.[8] Awareness about NCDs and their risk factors among the general public is low.[3] To reduce the burden of NCDs among general population, we need to prevent all these risk factor by providing knowledge regarding risk factors. Awareness about NCDs and their risk factors among high school students will help to prevent NCDs at primordial level only. High school children are selected because they are at receptive age and are influential in determining the health of next generation. By keeping this in mind, this study was conducted to know the awareness about NCDs and their risk factors among high school students.

Objectives

1. To assess the awareness regarding tNCDs and their risk factors among high school students.
2. To compare the awareness about NCDs and their risk factors among students of government and private high school.

Materials and Methods

Methodology

This cross-sectional study was conducted in private and government High schools of Davangere city. The study was conducted for 2 months in 2010 (July 1 to August 31) Total 524 students of 8th, 9th, and 10th standard were included for the study. Of the 524 students, 226 students were from government and 298 students from private high school.

Sampling Procedure

High schools of Davangere city were divided into government and private group. Ten percent of the sample was randomly selected from each group of high schools and 10% students were selected from 8th, 9th, and 10th standards. According to the size of the population, students were selected proportionately by systematic sampling. After obtaining the permission from the school authorities, purpose of the study was explained to the students. Pre-structured and pre-tested questionnaire was used to collect data regarding awareness about common NCDs (DM, CVD, and Ca) and their risk factors among high school students.

Inclusion Criteria

1. Those students who were present on the study day.
2. Those who were willing to participate in the study.

Exclusion Criteria

1. Those students who were absent on the study day.
2. Those who were not willing to participate in the study.

Statistical Tests

Proportion, Chi-square test.

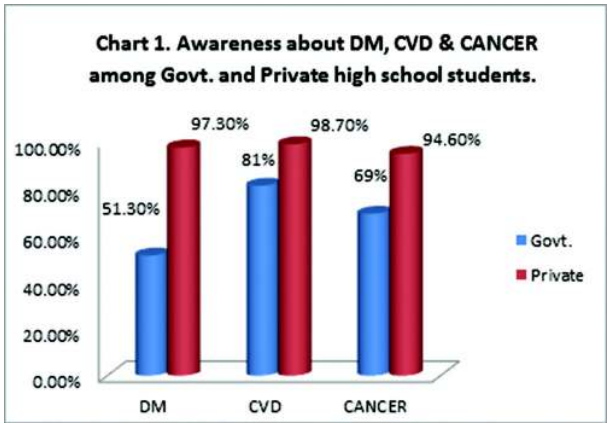

Chart 1: Awareness about DM, CVD, and Ca among government and private high school students.

Results

Total number of students interviewed were 524. From government school 226 students were selected (43.1%) and from private school 298 (56.9%) (Table 1).

Out of the 524 students, 406 (77.5%) knew about DM, 478 (91.2%) knew about CVD, and 438 (83.6%) knew about Ca (Table 2).

Out of the 406 school children who were aware about DM, 290 were from private school and 116 were from government school. Out of the 478 school children who were aware about CVD, 294 were from private school and 184 from government school. Out of the 438 school children who were aware about Ca, 282 were from private school and 156 were from government school. Awareness about DM, CVD, and Ca was low among government school children than private school children, which was statically significant (Table 3).

Awareness about risk factors of DM was low among government school children as compared to private school children, which was statistically significant (Table 4).

Awareness about CVD risk factors such as alcohol consumption, obesity, and high blood pressure was low among government school children as compared to private school children, which was statistically significant (Table 5).

Table 1: Number of students in the study

Type of school	Frequency	Percent
Govt. school	226	43.1
Private school	298	56.9
Total	524	100.0

Table 2: Awareness about DM, CVDs, and Ca among students

	Yes	No	Total
	n (%)	n (%)	
DM	406 (77.5%)	118 (22.5%)	524
CVD	478 (91.2%)	46 (8.8%)	524
CANCER	438 (83.6%)	86 (16.4%)	524

Table 3: Awareness about DM, CVDs & Cancer among govt. and private students

	Govt.		Private		Total	Chi square *p* value
	n = 226	%	n = 298	%		
DM	116	51.3	290	93.3	406	< 0.05
CVD	184	81.4	294	98.7	478	< 0.05
Ca	156	69	282	94.6	438	< 0.05

Table 4: Awareness about risk factors for DM between govt. and private students

Risk factors of DM	Govt. school		Private school		Chi square *p* value
	n = 116	%	n = 290	%	
Increasing age	14	12	78	26.8	<0.05
Diet containing fat	28	24	94	32.4	<0.05
Physical inactivity	22	18.9	46	15.8	>0.05
Obesity	26	22.4	42	14.4	>0.05
Don't know	26	22.4	30	10.3	<0.05

Table 5: Awareness about risk factors for CVD between govt. and private students

Risk factors of CVD	Govt.		Private		Chi square *p* value
	n = 184	%	n = 294	%	
Alcohol	4	2.17	42	14.2	<0.05
High BP	52	28.2	72	24.4	>0.05
Physical inactivity	16	5.5	28	9.5	>0.05
Obesity	26	14.1	32	10.8	>0.05
Stress	58	31.5	68	23.1	>0.05
Don't know	28	15.2	52	17.6	

Table 6: Awareness about risk factors for Ca between govt. and private students

Risk factors of Ca	Govt.		Private		Chi square *p* value
	n = 158	%	n = 282	%	
Smoking	42	26.9	152	53.9	<0.05
Chewing tobacco	34	21.7	64	22.6	>0.05
Alcohol	28	17.9	24	8.5	<0.05
Don't know	52	33.3	42	14.8	<0.05

Awareness about Ca risk factors such as smoking and alcohol consumption among government school children was low as compared to private school children, which was statistically significant (Table 6).

Majority of private school children knew that NCDs can be prevented and more preference was for DM followed by Ca and CVD (Table 7).

Response from government school children about the prevention of NCDs was low. Only 60% students knew that DM can be prevented.

Discussion

This study was conducted among government and private high school students to know the awareness about NCDs and their risk factors. We compared the awareness among high school students of government and private school, which showed that private high school students were having good knowledge about NCDs and their risk factors. Awareness about prevention of NCDs and their risk factors was more among private high school children. In our study, awareness about risk factors for DM, CVDs, and Ca among school-going students was low which was similar to the results of the study conducted in 375 government school children in Kerala in 2010 by Divakaran.[2] Another study conducted in Pune, Maharashtra, among 9th–12th class students showed the awareness about NCD risk factors was very low.[9] Study conducted by Yadav[10] in Kathmandu districts showed that knowledge about CVD risk factors was low (36.8%) among high school–going children. Awareness about diabetes and hypertension was very low in the study conducted by S Shivalli in Varanasi.[4] Study conducted in Delhi showed that the knowledge of the school children regarding cardiovascular risk factors was assessed and it was found that 15.3% of the

Table 7: Awareness about prevention of DM, CVD, and Ca among students

NCDs	Govt.		Private		Total
DM	n = 116	%	n = 290	%	n = 406
	70	60	272	93.7	342
CVD	n = 184	%	n = 294	%	n = 478
	134	72.9	206	70	340
Cancer	n = 156	%	n = 282	%	n = 438
	106	67.9	202	71.6	308

school children (3.2% in the government school vs. 27.2% in the private school) these results are similar to our study.[11]

In this study, 70% school children responded that CVD and other NCDs are preventable. Study conducted in Pune showed that only 42.6% students knew that CVD is preventable.[9] study conducted in Michigan High schools, USA, showed that CVDs are the greatest lifetime risk factor for death.[11]

Recommendations

It recommends the need for health education about NCDs and their risk factors among high school students. Health education is needed for children as knowledge regarding risk factors of CVDs, DM, and Ca including other NCDs and their prevention. The parents as well as the school teachers should be involved in these educational activities**.** High school teachers should be oriented about NCDs and their risk factors so that they can educate to the students.

Limitations

The study was limited to the schools of Davangere. Similar studies should be conducted in different geographical areas with a larger sample size to generalize the findings. Other cardiovascular risk factors, such as stress, waist circumference, and smoking, were not included in the study. The results may be influenced by social desirability.

Conclusions

This study concludes that the level of awareness about NCDs among government high school students was low as compared to private high school students. Awareness about risk factors of NCDs was low in government as compared to private high school students. Awareness about prevention of NCDs was low among both government and private students.

References

1. Khuwaja AK, Fatmi Z, Soomro WB, Khuwaja NK. Risk factors for cardiovascular diseases in school children: a pilot study. JPMA 2003;53(9):396–400.
2. Divakaran B, Muttapillymyalil J, Sreedharan J, Shalini K. lifestyle risk factors of non communicable diseases: awareness among school children. Indian J Cancer 2010;47(1):9–13.
3. Anita N, Garg S, Deb S, Ray A, Kaur R. A study of the profile of behavioral risk factors of non communicable diseases in an urban setting using the WHO step 1 approach. Ann Trop Med Public Health 2009;2(1):124–7.
4. Shivalli S, Gupta MK, Mohapatra A, Srivastava R. Awareness of non communicable diseases and their risk factors among rural school children. Indian J Community Health 2012;24(4):332–5.
5. Sicree R, Shaw J, Zimmet P. Diabetes and impaired glucose tolerance. In: *Diabetes Atlas,* Gan D (Ed.), 3rd edn. Belgium: International Diabetes Federation, 2006. pp 15–103.
6. Leeder SR, Raymond SU, Greeenburg H, H LuiK A Esson. *Race Against Time: The Challenge of Cardiovascular Disease in Developing Economies*. The Center for Global Health and Economic development. New York: Columbia University, 2004. p 123–6.
7. World Health Organization. The World Health Report 2002: Reducing risks, Promoting Healthy Life. Geneva: WHO; 2002. Available from: http://www.who.int/whr/2002/en/ whr02_en.pdf (last accessed on 12.04.13)
8. Mudur G. India has some of the highest cancer rates in the world. BMJ 2005;330:215.
9. Batlish R, Jadhav SL, Banerjee A. Coronary heart disease: awareness of risk factors and lifestyle among school going adolescents. Indian j Med Sci 2007;61:474–6.
10. Yadav KD, Wagle RR. Knowledge and attitude regarding major risk factors of cardiovascular diseases among 15-19 year old students of Kathmandu district. Health Prospect 2012;11:7–10
11. George GM, Sharma KK, Ramakrishnan S, Gupta SK. A study of cardiovascular risk factors and its knowledge among school children of Delhi. Indian Heart J 2014; 66:263–71.
12. Vanhecke TE, Miller WM, Franklin BA, Weber JE, McCullough PA. Awareness, knowledge, and perception of heart disease among adolescents. Eur J Cardiovasc Prev Rehabil 2006;13(5):718–23.

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