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Risk factors of Non communicable disease among adolescents

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A B S T R A C T

Cardiovascular disease taken together account for a major proportion of all deaths during adulthood in both developed and developing countries. On both pathological and behavioral grounds, prevention should start in child hood, because this is the time when the atherosclerotic and hypertensive disease processes start and it is also when life style habits are formed. Bellary, Karnataka. Cross-sectional study. Comprised 8, 9 and 10 standard students of the selected school. Sample size is 100. The instrument used is a predesigned and pretested structured questionnaire administered using the interview method, Body mass index was calculated based on physical measurements such as height and weight using standard methods. Adequate physical activity was seen among 60% and Stress among 9%. It was observed that 6% of the study subjects consumed tobacco and 5% consumed alcohol. Percentage of overweight and obesity were 5% and 3% respectively. All the risk factors prevalent among study subjects are modifiable.

Introduction

Many of the cardiovascular risk factors have their origin in childhood. On both pathological and behavioral grounds, prevention should start in child hood, this is the time when the atherosclerotic and hypertensive disease processes start and it is also when life style habits are formed [For e.g. .smoking, eating, physical exercise].

Thus preventive efforts should be directed towards discouraging children from adopting harmful life styles than to attempt

to reverse the situation and decrease the resulting risk of atherosclerosis in adulthood¹.

The current epidemic of the cardiovascular disease can be controlled only through primordial prevention. This may be the only viable strategy if ultimately we are to eliminate these diseases². For primordial prevention, schools and youth education programs are an important focus for the preventive activities, the reason being

schools are one of the powerful social institutes with which a large proportion of the population has a relationship, they are thus ideal centers for community health promotion and can influence community health in a number of ways³.

In Indian adolescent school children there is a high prevalence of obesity, hypertension, hypercholesterolemia and high fat diet. Promotion of dietary restriction, physically active lifestyle and avoidance of tobacco use beginning from childhood is important for primordial prevention⁴.

WHO promotes school health programmes as a strategic means to prevent important health risks among youth and to engage the education sector in the efforts to change the educational, social, economic and political conditions that affect risk. WHO's Global School Health Initiative seeks to mobilize and strengthen health promotion and education activities at the local, national, regional and global levels⁵.

Not much data is available regarding proportion of cardiovascular risk factors among school going children in India. Available studies focus on isolated risk factors like tobacco use, obesity, and hypertension. To make available evidence based intervention, it is necessary that information of proportion of risk factors is obtained. Keeping this in mind, the present study has been taken up.

Experimental

A cross sectional study was carried out in a high school of Bellary, Karnataka to find the proportion of risk factors of NCD. Students studying in 8,9 and 10th standard were the study subjects. The required study subjects

were selected based on Stratified random sampling after finding probability proportionate sampling size. The sample size of the study was 86 but rounded to 100. After taking consent from the school authorities, a pre tested semi structured questionnaire was self administered to the students in the classroom and asked them to enter the relevant data, Weight and Height of the students were recorded following standard protocol and BMI was found. Data was entered in Microsoft excel and analyzed in SPSS.

The Questionnaire contains the general information of the person along with details about Tobacco use, Alcohol, Physical activity, and stress.

Result and Discussion

In this study, 33% of study subjects belong to 8th standard, 32% belong to 9th standard and 35% belong to 10th standard. The study subjects included both boys and girls, boys constituted 45% and girls 55%. The proportion of inadequate physical activity was found to be 40% among study subjects. Prevalence of stress was found among 9% of study subjects. Nearly 6% of study subjects were consuming tobacco and alcohol. Body Mass Index revealed that, 3% of children were obese and 5% were overweight.

The Study of Risk Factors for NCD among secondary school children of selected school of Bellary city aimed at finding the proportion of risk factors for NCD.

Study subjects included were both males and females, males constituted 45% and females 55%. The difference is probably due to the random selection of subjects according to their roll numbers.

Table.no1 Proportion of Risk factors of Non Communicable diseases

| Risk factors | Frequency | Percentage |
|----------------------------|------------------|-------------------|
| Standard | | |
| 8 th | 33 | 33.0% |
| 9 th | 32 | 32.0% |
| 10 th | 35 | 35.0% |
| Gender | | |
| Male | 45 | 45.0% |
| Female | 55 | 55.0% |
| Physical activity | | |
| Adequate | 60 | 60.0% |
| Not adequate | 40 | 40.0% |
| Stress | | |
| Yes | 09 | 09.0% |
| No | 91 | 91.0% |
| Tobacco consumption | | |
| Yes | 06 | 06.0% |
| No | 94 | 94.0% |
| Alcohol consumption | | |
| Yes | 05 | 05.0% |
| No | 95 | 95.0% |
| Body mass index | | |
| Overweight | 05 | 05.0% |
| Obese | 03 | 03.0% |
| Others | 92 | 92.0% |

In this study, the percentage of study subjects with adequate physical activity as 60% and 40% of them show “Not adequate”

physical activity. In a study conducted in Brazil by Maria Alayde Mendonça da Silva; Ivan Romero Rivera; Maria Roseane Mendonça Tenório Ferraz; Aluísio José Tavares Pinheiro; Sheyla Waleska dos Santos Alves; Adriana Ávila Moura; et-al, inadequate physical activity was seen in 93.5% as compared to 63.0% in the present study⁶. Measurement of physical activity: Health-related fitness includes aerobic exercises which contribute to overall physical well-being, ability to conduct daily activities, and resistance to disease.

In the present study, prevalence of stress was 9%. Chandra R, Srinivasan S, Chandrasekaran R, Mahadevan S conducted a study to find the prevalence of mental disorders in school-age children at Pondicherry in India⁷. This study does not directly give the proportion of stress in school-age children but tells us how multiple stressors can have an effect on mental disorders.

This study shows that 6% of the study subjects consumed tobacco. These were subjects who were currently consuming tobacco. Various forms in which tobacco was consumed are Cigarette ,Beedi ,Snuff and Chewable tobacco .

According to a study on Relative risk of adolescent drug abuse on male high school students of New Delhi by Mohan D, of All India institute of medical sciences, the prevalence of tobacco in males was found to be 2.8 % in the Age group 12 – 18⁸.

This is closer to the findings in this study. Sailesh Mohan, Sankara Sarma and KR Thankappan in their study among Adolescent Boys in Kerala, India revealed the prevalence of current tobacco use as 11.3% (95% CI 9.6-13.0) in contrast to 3.9% from the current study⁹.

It is seen from the above table that 5% of the study population consumed alcohol. George.A, Varghese.C, Sankaranarayanan R, Nair M.K. conducted survey to study the tobacco and alcohol use habits of 146 children and teenagers in a village Trivandrum (Kerala state) in south India. This study revealed that percentage of study subjects with drinking habits (Alcohol) was 3%. The habit pattern correlated negatively with education and positively with number of children per family¹⁰.

Center for Chronic Disease Prevention defines as Overweight if the BMI is higher than the 85th percentile and Obese if the BMI is higher than 95th percentile. In this study the above mentioned criteria is used to define overweight and obesity. The above table shows percentage of overweight and obesity as 5% and 3% respectively.

Janssen I, Katzmarzyk P T, Boyce WF, King MA, Pickett W in their study revealed 15% of 11-16 year-old Canadian youth were overweight (preobese) and 4.6% were obese¹¹.The findings of the current study show lesser prevalence of overweight and obesity compared to Canadian youth.

Ramachandran A, Snehalatha C, Vinitha R, Thayyil M, Kumar CK, Sheeba L et al. conducted a study at Chennai on Prevalence of overweight in urban Indian adolescent school children. School students in the age group of 13-18 years (n = 4700, M: F 2382:2318) were studied. Body mass index (BMI) was measured. Age-adjusted prevalence of overweight was 17.8% for boys and 15.8% for girls¹²; where as current study reveals lesser percentage.

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