

## Risk Factors of Hypertension among School Children

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### ABSTRACT

**Objectives:** To identify the risk factors of hypertension among children of high school and to formulate preventive strategies for its prevention.

**Design:** A cross sectional study

**Place and Duration:** Government high school Township Lahore 2004.

**Patients and methods:** Total number of children enrolled in the study was 100. Their mean age was 13±1.5 years. Information about physical activity was obtained, weight and height were taken and BMI was calculated. Food records for 24 hours were also obtained.

**Results:** Significant association of the hypertension was observed with prosperity, televisionization, BMI, positive family history. Increased consumption of junk foods was observed in prosperous families. Sixty two percent were having poor knowledge about health. They consumed inadequate amounts of calories; diet was poor in fruits, vegetables but was having high fat content.

**Conclusion:** As the risk factors were significantly found in prosperous families, thus the changes in life style and behavior are need of the day in this high risk group to prevent future generations from developing the hypertension.

**Key words:** Children, hypertension, Pakistan, Physical Activity, Risk Factors,

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### INTRODUCTION

Hypertension, referred to as high blood pressure, HTN or HPN, is a medical condition in which the blood pressure is chronically elevated. It was previously referred to as nonarterial hypertension, but in current usage, the word hypertension without a qualifier normally refers to arterial hypertension.<sup>2</sup> Hypertension is considered to be present when a person's systolic blood pressure is consistently 140 mmHg or greater, and/or their diastolic blood pressure is consistently 90 mmHg or greater.<sup>2</sup> At severely high pressures, defined as mean arterial pressures 50% or more above average, a person can expect to live no more than a few years unless appropriately treated<sup>3</sup>.

The impact of this epidemic will be felt when these children will become adults and develop the long term complications of hypertension like cardiovascular diseases, cerebrovascular accidents sleep apnea, and reduced life expectancy<sup>3</sup>. Since the incidence and prevalence of childhood hypertension is on the increase, the prevention and control of hypertension is need of the day. Attempts to address this menace include population-wide measures to improve dietary choices and increase physical exercise<sup>4</sup>.

Studies have shown that if life style modifications started early in life will yield better results<sup>10</sup>. In children intake of high energy food, reduction of physical activity along with television viewing, playing video games are becoming important factors<sup>11</sup>. Primary prevention studies showed that life style changes have an impact on progression of the disease. These life style interventions at an early age may prove to be more effective than interventions done at later stage<sup>12</sup>. Pakistani children are adopting a progressively very unhealthy life style with increased sedentary entertainment such as televisionization, computerization, video gaming, increased consumption of fast foods resulting in physical inactivity and faulty food habits. These unhealthy food habits have speed up the risk of hypertension which is an important modifiable risk factor for Diabetes Mellitus, hypertension, cardiovascular diseases and dyslipidemias<sup>13</sup>. There is definite evidence that Non Communicable Diseases are initiated by unhealthy lifestyle and risk factors like unhealthy diet, obesity, televisionisation, computerization, smoking and lack of physical activity among the major modifiable lifestyle issues<sup>6</sup>. As environmental factors are such strong modifiers of hypertension risk the role of family, school teachers and community must be assessed as a modifying variable in the risk of obesity in children which constitute more than 45% of country's population.

Attempts to address hypertension should include population-wide measures to improve dietary choices and increase physical exercise<sup>4</sup>. This data will be

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useful in designing and implementing the preventive programmes for hypertension in all social classes. This study was conducted to explore the risk factors for hypertension such as dietary habits, sedentary habits, physical inactivity, body weight, body height, BMI and family history of hypertension among high school children.

## PATIENTS AND METHODS

A cross sectional study was conducted among 100 children of public sector high school. After getting informed consent the children were informed about the aims & objectives of study. The data was collected through a structured questionnaire. The children were asked about diet & nutrition to assess their knowledge. They were also examined for the risk factors like self reported dietary intake, BMI, physical activity & family history. Data was entered into in MS excel enable using SPSS version 10.

## RESULT

A total of hundred (100) children of class ix-x participated in the study.

There means age was  $13\pm 1.5$  years. Sixty (60 %) boys were having poor health knowledge. They were taking inadequate amounts of calories, had unsatisfactory intakes of milk, fruits, vegetables and higher intake of fats. On the average children watched television for 2 hours per day. Thirty five (35%) of the children were having poor physical activity, seventy eight (78%) of the children were having positive family history. Fifty six (56%) of children were belonging to well off families. Nineteen (19%) children were overweight as they were having bmi more than 20.

## DISCUSSION

In order to formulate an effective obesity risk reduction program for children, it will be required to identify the risk factors. This study was conducted on school children of Lahore to assess the risk factors for hypertension such as physical inactivity, dietary habits, western life style, socioeconomic status and family history.

Hypertension is a public health and policy problem because of its prevalence, costs and burdens.<sup>8</sup> The prevalence of hypertension has been continually rising for two decades? This sudden rise in prevalence of hypertension is attributed to environmental and population factors rather than individual behavior and biology because of the rapid and continual rise in the number of overweight and obese individuals.<sup>9</sup> Diet is

considered to be a very important risk factor of NCD. Shifting from vegetarian food to animal origin like meat, fat and others have significantly increased the risk of hypertension, obesity, diabetes mellitus, coronary heart disease, cancer and stroke<sup>14</sup>. The changing dietary habits observed in the study populace like taking meals outside and snacks are noteworthy and influx of fast food chains like McDonaldisation, KFCisation, Coca Colisation is becoming a norm and a symbol of social status. High amount of saturated fats, cholesterol and refined sugars in these diets are associated with increased incidence of obesity, hypertension and NCD<sup>14</sup>.

Health promotion policies should include health and environmental education to improve health and decrease the risk factors in our youth. More research is needed to determine the burden of the disease risk factors. With more information available it will be possible to explore the extent of this growing menace and formulate measures to decrease the obesity in our society.

Thus the need to prevent diseases like obesity, hypertension and diabetes mellitus in Pakistani population is the challenge of the future.

## CONCLUSION

This study showed that children from prosperous families are at increased risk of developing hypertension in future because of physical inactivity, unhealthy dietary habits, westernization of life style, increased weight and positive family history.

The increased incidence and prevalence of childhood hypertension is suggestive of designing and implementing early age preventive programmes. Thus the changes in life style and behavior are need of the day in this high risk group to prevent future generations from developing hypertension.

## RECOMMENDATIONS

- High blood pressure can be controlled and prevented if population takes these steps:
- Maintain a healthy weight.
- Moderate physical activity on most days of the week.
- Follow a healthy eating plan, which includes foods low in sodium and fruits.
- Stop smoking,
- Compliance with prescribed medication for hypertension
- Incorporation of fresh fruits and vegetables in the diet

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