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A Crossectional Observational Study to Assess Distribution of the Blood Pressure and It's Association With Biophysical Profile Among Selected College Students in Kancheepuram District Tamilnadu,India

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ABSTRACT

Background: The risk of hypertension and hence the complications of hypertension might start very early in life and their discovery and modification could help in prevention of these events in future.

Objectives:To correlate the level of blood pressure with biophysical profile of the college students. And to associate the level of blood pressure with biophysical profile and with selected demographical variables.

Materials and Methods:A cross sectional observational study was carried out among 146 students aged between 17 – 22 years were randomly selected . The study assessed the selected biophysical profile along with blood pressure measurements twice each ten minutes apart was done.

RESULTS :The finding shows that, the mean systolic and diastolic blood pressure had significantly increased with age and there was a correlation between the age ,BMI, and Waist to Hip ratio with mean systolic and diastolic blood pressure at 0.05 level. There was a significant association between mean systolic and diastolic blood pressure with the certain demographical variables like age, sleep pattern and fast foods.

CONCLUSION:The study points out the need for early screening for blood pressure variation in students and introducing effective lifestyle modifications at an early age to prevent the epidemic of non-communicable diseases in future.

KEYWORDS : Cross sectional study, Blood Pressure,Biophysical profile

INTRODUCTION:

Blood pressure is the pressure exerted by circulating blood upon the walls of blood vessels(Klabude, 2007). Various factors, such as age and gender influence average values, influence a person's average BP and variations occur. An individual's BP varies with exercise, salt intake, emotional reactions, sleep, digestion, stress, drugs, disease, standing or sitting position and time of the day. Hypertension is a major health problem in developed and developing countries. Around one billion adult world populations were found to have hypertension in the year 2000 and this is expected to increase to 1.56 billion by 2025. Studies have consistently reported that elevated blood pressure (BP), systolic blood pressure (SBP), and diastolic blood pressure (DBP) are significantly correlated with BMI. World-wide prevalence of hypertension in children and adolescents appear to be increasing. The growing prevalence of hypertension is coupled with increase body weight and many reports have shown an association between blood pressure (BP) and body mass index (BMI). Raised blood pressure (Hypertension) remains to be the leading risk factor for cardiovascular disease and leading cause of death accounting for 16.5% of global death. The increased blood pressure has its root from the childhood itself which often remains asymptomatic. Thus the asymptomatic hypertension continues to be silent for next two decades which turns to be the risk factor for other diseases also. The study aimed to assess the distribution of BP and its relationship with BMI, WC, physical activity, and in students.

METHODOLOGY:

A cross sectional observational study was conducted in selcted college at kelambakkam . 146 students belongs to 17 -22 years were selected by simple random sampling technique.

Inclusion Citeria:

Sample who are willing.

- Sample who are at the age of 17 to 22 years.
- Sample who are available.

Exclusion Criteria:

- Sample who are affected with diseases
- Sample who are not available during the study.

Method:

Description Of The Tool:

The tool consists of three sections

Section A: It consist demographical variables including age, sex, area of living, alcohol ,smoking, family history of hypertension, regular sleep hours, diet, fast food and exercise.

Section B: It deals with Biophysical profile including height, weight, body mass index; and waist circumference and Blood Pressure Assessment were recorded as per the recommendation

Ethical Considerations

Permission was obtained from the institutional human ethical committee prior to conduct the study. The written permission obtained from the head of the Institution and the investigator explained about the study to the patient and obtained written consent prior to the data collection.

Study Protocol:

Height:

The height of the students were measured using a portable height measuring device in standing position without their footwear, with heels together and their head positioned perpendicular to the body

WEIGHT:

A standard weighing machine was calibrated against known weights regularly. The zero error was checked for and removed before starting the examination every day. The weight and height were recorded to the nearest 0.1 kg by weighing scale and 0.5 cm by measuring scale respectively.

BMI:

BMI was calculated using the following formula: weight (kg) / [height (m)]2

Blood Pressure Measurement:

Blood Pressure was measured using standard method with appropriate size cuff, covering two-thirds of the arm. After five minutes rest in sitting position with the arm at the level of the heart, the blood pres-

sure was measured. The cuff was inflated to a level at which the distal arterial pulse was not palpable. Then both systolic blood pressure (SBP) and diastolic blood pressure (DBP) were determined. Hypertension is defined as "SBP or DBP exceeding the 95th percentile for age, gender and blood pressure >120/80 mm Hg". If the SBP was higher than 120 mm Hg and the DBP higher than 80 mm Hg, two additional readings were obtained and cross checked. The lowest of the three readings was recorded . All the readings were made by the same observer to avoid inter-observer variation.

Data Analysis

Descriptive statistics are frequency distribution, percentage, mean, standard deviation and inferential statistics, chi-square test was used to analyze the data.

Results an Discussion:

One hundred and forty six samples (77.4% female and 22.6% male) belongs to 17 to 22 years of age were analysed.The frequency and percentage distribution of age, gender, type of living, family history, exercise pattern of the students, among these 68.5% of the sample belongs to 17- 19 years, most of the sample 77.40% were female, 60.30% were living in hostel, 13.7%, 8.2%, both 2.1% father, mother and both had history of hypertension. Majority of the sample were not having habit of doing regular exercise. It was estimated that 6.8% and 4.8% of the sample have over weight and obese. The study result revealed that the mean systolic and diastolic blood pressure relatively increased with age, BMI and wasit to hip ratio.(Table 1). Pearson's correlation coefficient of blood pressure with age, waist to hip ratio SBP, DBP and BMI is significant at the 0.05 level .

Table I- Mean Systolic Blood Pressure And Mean Diastolic Blood Pressure With Age, Waist To Hip Ratio And BMI.

S.No	Variables	Division	SBP		DBP	
1.	Age	17-19 Years	109.20	10.32	69.80	8.41
		19-22 Years	113.48	9.48	72.61	6.12
2.	Waist to Hip ratio	Male	116.06	9.33	72.73	7.61
		Female	108.94	9.94	70.09	7.85
3.	BMI	Under Weight	108.13	9.3	68.33	6.94
		Normal	110.74	9.32	71.60	7.82
		Over Weight	116.00	17.13	73.00	10.59
		Obese	117.14	9.51	72.86	7.56

CONCLUSION

The differences in patterns of increase in BP between males and females are probably related to certain biological and psychosocial factors .The study aimed to assess distribution of the blood pressure measurement and its association with biophysical profile among selected college students. The result shows that there is a significant association between blood pressure and biophysical profile among selected college students between the age group of 17 to 22 years with selected demographic variables. it concluded that the assessment of the blood pressure is very important for early identification of elevation of blood pressure and to prevent it's complications.

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