

Original Research Article

Assessment of knowledge regarding hypertension and its preventive measures among students of Government Science College of North Gujarat region, India

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ABSTRACT

Background: Many adult health problems e.g. hypertension, diabetes has their early origins in early adulthood, because this is the time when lifestyles are formed. Objective of this study was to determine the level of awareness among college students regarding hypertension and its preventive measures before and after educational interventional training.

Methods: An interventional study conducted in college students of Government Science college of Vadnagar city, Gujarat. Duration of the study was March to October 2019. Total 100 students between the age group of 17-19 were included after written informed consent. Baseline knowledge of students regarding hypertension and its preventive measures was assessed by pre-designed, pre-tested and semi structured questionnaire. Single educational interventional training for 45 minutes was given to selected students. Post- intervention knowledge of students for the same was assessed after training. Thus, collected data was analyzed using SPSS 17 (Trial Version).

Results: Baseline knowledge of the students regarding normal range of blood pressure, risk factors of hypertension and signs and symptoms of hypertension was 21%, 30% and 40% respectively which was significantly increased to 64%, 79% and 72% respectively after educational intervention. Baseline knowledge of the students regarding preventive measures of hypertension like avoiding junk food/ healthy diet, exercise and meditation was 26%, 29% and 6% respectively which was significantly increased to 79%, 81% and 72% respectively after educational intervention.

Conclusions: Efforts should be directed towards educating the college students about hypertension to change their lifestyles and reduce the incidence of hypertension in later life.

Keywords: Assessment, Early adulthood, Hypertension, Knowledge, Students

INTRODUCTION

Hypertension emerged as major public health problem. As blood pressure gradually increases with age, proper management leads to prevention of hypertension, cardiovascular diseases, stroke and renal diseases. Due to socio-economic and epidemiological transition of

population; hypertension becomes the commonest cardiovascular disorder and emerged as major public health concern.¹ For cardiovascular mortality, hypertension is one of the major risk factors. Hypertension contributes 13% to global mortality. It is one of the common preventable risk factors for other non-

communicable diseases as well. Among all deaths, 20-50 percent is due to hypertension.²

During adolescent and early adulthood period lifestyles are formed so, many adult health problems e.g. hypertension, diabetes have their early origins in early adulthood. By primordial prevention, efforts are directed towards discouraging adults during their early adulthood from adopting harmful lifestyles through individual and mass education. Critical development occurs during adolescence and early adulthood period.³

Awareness on different aspect of hypertension is important for prevention and compliance. Before complications of hypertension arise among younger generation, they need to be aware of various aspects of hypertension, especially of risk factors which may be modified.

This will assist in bringing necessary changes in lifestyle behaviors.⁴ The present study was undertaken to know impact of educational intervention regarding hypertension and its preventive measures before and after training among students of Government Science College of Vadnagar city.

METHODS

The present study was an interventional study undertaken in Government Science college of Vadnagar city. The permission of principal of Government Science College was taken. Total 100 students between the age group of 17-19 were included after written informed consent.

Study population was 100 students of Government Science College of Vadnagar city of Gujarat, India.

Inclusion criteria

Students who gave consent were included in the study.

Exclusion criteria

Students did not give the consent and those who were absent on the day of study were excluded from the study.

Study duration was March to October 2019.

Before conducting the study approval was obtained from institutional ethical committee for human research. Data safety and confidentiality was also given due consideration. The file containing identity related details was kept password protected and the filled Performa were kept in lock with key accessible only to researcher.

Baseline knowledge of students regarding hypertension and its preventive measures was assessed by pre-designed, pre-tested and semi structured questionnaire. Questionnaire was converted in vernacular language for assessment. Single educational interventional training for

45 minutes was given to selected students with lecture with power point presentation, charts, demonstration and discussion. Post intervention knowledge of students for the same was assessed after training by same questionnaire.

Pre and post training assessment was done by scoring method. Data were analyzed using SPSS version 17 (trial version). Parameters such as rate, ratio and percentages were calculated. In order to have valid interpretation of rates, 95% confidence intervals (CI) were calculated. To test the significance of the difference among the statistical parameters in different subsets of population, suitable statistical tests like chi square were applied.

RESULTS

Mean age of the students was 18.5 ± 0.6 years. Baseline knowledge of the students regarding normal range of blood pressure was 21% which was significantly increased to 64% after educational session (Figure 1).

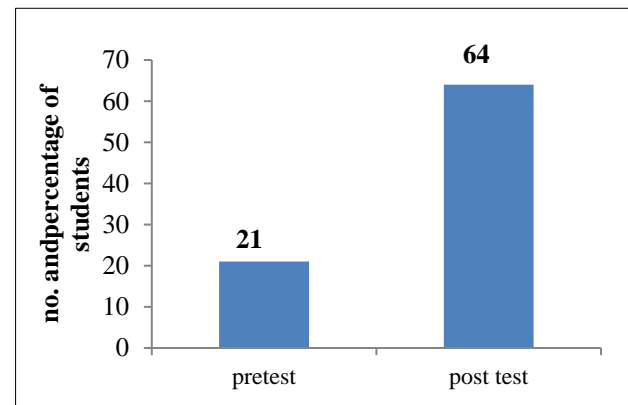


Figure 1: Pre and posttest knowledge of students regarding normal range of blood pressure.

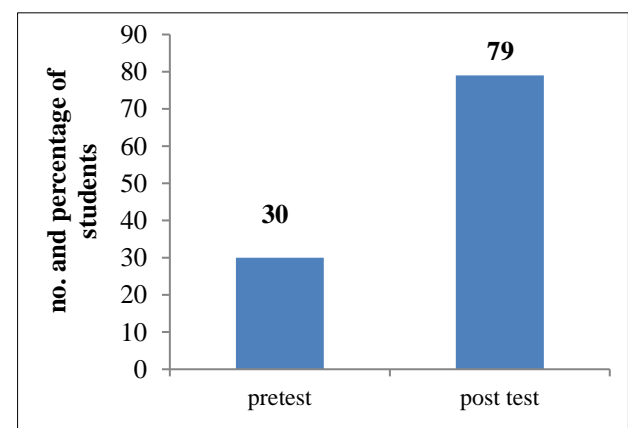


Figure 2: Pre and posttest knowledge of students regarding risk factors of hypertension.

Baseline knowledge of the students regarding risk factors of hypertension was 30% which was significantly increased to 79% after health education (Figure 2).

Baseline knowledge of the students regarding signs and symptoms of hypertension was 40% which was significantly increased to 72% after health awareness talk (Figure 3).

Baseline knowledge of the students regarding preventive measure of hypertension like avoiding junk food/ healthy diet, exercise and meditation was 26%, 29% and 6% respectively which was significantly increased to 79%, 81% and 72% respectively after interactive health educational intervention (Table 1).

DISCUSSION

The present study assessed knowledge of college students regarding hypertension and its domains such as symptoms, complications, risk factors and management of hypertension among entry year undergraduate health science students in medical university. Early adulthood period is vulnerable to adopt behavior predisposing to non-Communicable Diseases like hypertension and diabetes development because during this period

lifestyles are formed. Knowledge regarding healthy lifestyle during early adulthood be given promote their health.⁴ Adoption of high-risk behavior and lifestyle responsible for hypertension among young adults should be discouraged by health education.⁵

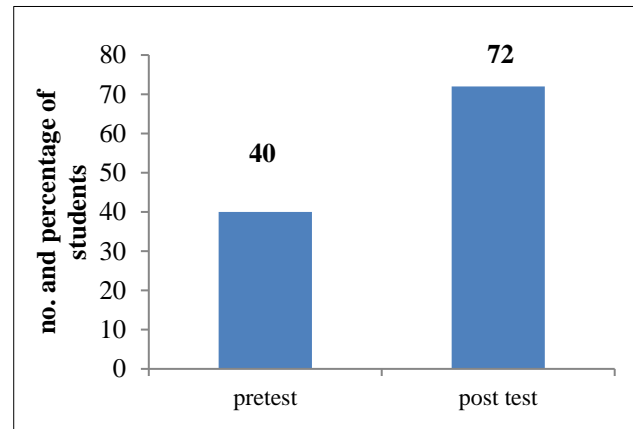


Figure 3: Pre and posttest knowledge of students regarding signs and symptoms of hypertension.

Table 1: Pre and posttest knowledge of students regarding preventive measure of hypertension.

Preventive measures of obesity	Pre test		Post test		Chi-square value	p value (significance)
	No. of students	Percentage	No. of students	Percentage		
Avoiding junk food/Healthy diet	26	26	79	79	56.039	<0.0001
Exercise	29	29	81	81	54.353	<0.0001
Meditation	6	6	72	72	91.093	<0.0001

Baseline knowledge of the students regarding normal range of blood pressure was 21% which was significantly increased to 64% after the intervention. Baseline knowledge of the students regarding risk factors of hypertension was 30% which was significantly increased to 79% after the intervention. Baseline knowledge of the students regarding signs and symptoms of hypertension was 40% which was significantly increased to 72% after the intervention. In this study baseline knowledge of the students regarding preventive measure of hypertension like avoiding junk food/ healthy diet, exercise and meditation was 26%, 29% and 6% respectively which was significantly increased to 79%, 81% and 72% respectively after the intervention. In Nayak S. et al, baseline knowledge of the students regarding normal range of blood pressure was 30% which was significantly increased to 79% after the intervention.¹ Baseline knowledge of the students regarding risk factors of hypertension was 40% which was significantly increased to 72% after the intervention. Baseline knowledge of the students regarding signs and symptoms of hypertension was 21% which was significantly increased to 64% after

the intervention. In their study baseline knowledge of the students regarding preventive measure of hypertension like avoiding junk food/ healthy diet, exercise and meditation was 23%, 25% and 4% respectively which was significantly increased to 66%, 55% and 41% respectively after the intervention. In a study done by Ruksana Akter et al, knowledge of hypertension and sign and symptoms of hypertension among entry level university students was 95% and 80% respectively.⁴ In a study done by Chaudhari AI et al, baseline knowledge of the students regarding normal range of blood pressure was 67.2% which was significantly increased to 99.1% after the intervention and baseline knowledge of the students regarding risk factor of hypertension like high salt consumption, obesity, stress and lack of physical activity was 25.9%, 23.3%, 65.5% and 21.6% respectively which was significantly increased to 73.3%, 61.2%, 92.2% and 45.7% respectively after the intervention.⁵ In their study baseline knowledge of the students regarding preventive measure of non-communicable diseases like meditation, avoiding cigarette smoking/alcohol consumption and avoiding

junk food was 11.2%, 11.2% and 5.2% respectively which was significantly increased to 40.5%, 46.6 and 37.9% respectively after the intervention.

In study by Bhuiyan M et al, among 816 university students, about 45.5% were female. The mean±SD age was 21.42±1.85 years. About 56% respondents know the normal blood pressure level but only 18% know the high blood pressure level of the body. About 60%, 58% and 30% reported that Stress, Unhealthy diet and Overweight were the risk factors of hypertension respectively. However, about 93% respondents don't know that hypertension is asymptomatic and about 49% don't know that it is a lifelong disease and have to take drugs for lifelong. About 68% and 58% said that Stroke and Heart attack are the complications of hypertension. About 65%, 58% and 54% reported that avoid unhealthy diet, reduce stress and regular physical activity can prevent hypertension.

A study conducted by Shaikh RB et al, 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.⁷ In a study by Rehman A et al, analysis of 475 participants showed that only 127 (26.74%) participants were acquainted with the basic definitions including the cut-off levels for blood pressure among the general population.⁸ Goel S et al, reported that 65.3% and 58.3% senior secondary school students of Chandigarh had knowledge about hypertension and diabetes, respectively.⁹

Osman HM et al, knowledge among medical college students about normal range of blood pressure, signs and symptoms of blood pressure and complication of blood pressure was 77.8%, 52.6% and 47.3% respectively.¹⁰ Only 61.3% knew about nutritional therapy of hypertension. The knowledge among medical students about modifiable and non-modifiable risk factors of hypertension was 41.7% and 51.7% respectively

In Rashid SA et al, three hundred and thirty six (72.4%) university students were having good knowledge about hypertension while 128(27.58%) students were having poor knowledge.¹¹

In Anju Ade et al, reported that 62.6% of the students had no knowledge about the prevention of NCDs.¹² Only 127(37.4%) students felt NCDs are preventable. A school-based study by Taha AZ et al, on intermediate and secondary school male students in Saudi Arabia reported that few (<50%) of the students knew about the beneficial effects of physical activity in the prevention of heart disease, hypertension, diabetes mellitus.¹³

In Baig M et al, half of the participants of this study were either overweight or obese and 7% were hypertensive.¹⁴ A huge gap exists in the knowledge, attitude and practice

among the sample of young Saudi population regarding risk factors of cardio vascular diseases.

In a study by Aketer R et al, among the total participants, 144(89.4%) were aware about the definition of hypertension.¹⁵ With regard to the statement on 'categorized into five stages' 69 (42.9%) had the correct knowledge. Hypertension is not preventable was correctly answered by 121(75.2%) of the participants, only 57 (35.4%) were having the correct knowledge about the cure of hypertension and 130(80.7%) were having the knowledge that hypertension can occur at any age respectively. It was observed that majority of the participants knew the symptoms of hypertension. Of all the participants, 139 (86.3%) had correct knowledge that severe headache as one of the symptoms of hypertension. Vision related problems were reported by 106 (65.8%) as one of the symptoms of hypertension followed by 128 (79.5%) reported that fatigue/tiredness as one of the symptoms of hypertension. The most common risk factor that the participants were aware about was stress, accounting for 151 (93.8%). Following it were overweight, increasing age, presence of CVS disease, family history of hypertension and hypercholesterolemia having 142 (88.2%), 137 (85.1%), 136 (84.5%), 134 (83.3%) and 134 (83.2%) respectively.

As this study was conducted in one city of Gujarat, the results are not generalized. There is definitely a need for well-planned, large-scale studies using standardized methodologies to estimate the prevalence and risk factors of hypertension in college students.

CONCLUSION

This study identified significant health-promotion opportunities for these college students that can be carried out during their college life in order to establish a healthier lifestyle to reduce the burden of hypertension and other non-communicable diseases such as diabetes and cardio-vascular diseases.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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