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Awareness Regarding Prevention of Hypertension among Youths in a Selected Campus

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Abstract: ***Hypertension is a silence killer, which is the most common public health problem. Various preventive life style practices plays significant role in controlling this disease which is achieved by increasing the knowledge and awareness of the public and changing their attitude and practice in their health behaviors. This descriptive cross sectional study was carried out to find the level of awareness in youths regarding the prevention of hypertension. A total of 106 students studying bachelor first year in civil engineering in Pulchowk Campus (IOE) was taken purposively. The data was collected by self-administered structured questionnaire. The data was collected from June to July 2017. The Data were analyzed by using descriptive and inferential statistics. The findings of the study revealed that 50.9% of youths have adequate level of awareness regarding the prevention of hypertension .Only half of the respondent (50.9%) were aware about hereditary risk of hypertension. Majority of the respondents were aware about diet, stress management and exercise to prevent from hypertension. Only half of them were aware on effect of smoking and alcohol in blood pressure. There was no significant statistical association between the level of awareness and selected variables. The study findings illustrated that the awareness regarding prevention of hypertension among youths was not satisfactory so a planned awareness program should focus enhances the knowledge.***

Keywords: Blood pressure, High blood pressures, Knowledge, Awareness

1. Introduction

Hypertension is a condition in which the blood vessels have persistently raised pressure. Hypertension is defined as a systolic blood pressure equal to or above 140 mm Hg and/or diastolic blood pressure equal to or above 90 mm Hg. Normal levels of both systolic and diastolic blood pressure are particularly important for the efficient function of vital organs of our body and for overall health and wellbeing (WHO, 2013). For a normal reading, blood pressure needs to show systolic pressure between 90 and 120 and diastolic pressure between 60 and 80. The American Heart Association (AHA) considers blood pressure to be within the normal range when both your systolic and diastolic numbers are in these ranges (Health line Media, 2005-2017).

Hypertension is recognized as a silent killer as it damages the vital organs on a continuous and progressive basis until symptoms are manifested. It contributes to largest portion of cardiovascular morbidity and mortality (Familoni, 2004).

Globally, cardiovascular disease accounts for approximately 17 million deaths a year, nearly one third of the total deaths. Of these, complications of hypertension account for 9.4 million deaths worldwide every year. Hypertension is responsible for at least 45% of deaths due to total ischemic heart disease and 51% of deaths due to stroke (WHO, 2013). The prevalence of hypertension in countries of Asia was as low as 2% in rural areas to 24% in urban areas. According to new criteria of the WHO- International Society of hypertension, subcommittee (140/90 mm Hg), and the prevalence appears to be 5–35% in different countries of Asia (Singh et al., 2000).In 2008, worldwide, approximately 40% of adults aged 25 and above had been diagnosed with hypertension; the number of people with the condition rose from 600 million in 1980 to 1 billion in 2008 (WHO, 2013).

The recent National demographic and health survey-2016 results showed that 17% of women and 23% of men age 15 and above have hypertension in Nepal. About 2% of women and men have normal blood pressure and are taking medication to control their blood pressure (NDHS, 2016). In a study conducted to assess Hypertension among Young Adults in the Shopping Malls of Kathmandu in 2012; Prevalence, awareness, treatment and control rates were 23.70%, 39.13%, 18.26% and 7.83% respectively in the studied population. The prevalence of hypertension was three times higher among men (30.39%) in compare to women (10%) (Shakya, 2012). Hypertension is largely preventable and remains a constant threat to the health of our society; effective lifestyle modification and drug treatments are available that could control hypertension in nearly all (Hackam et al., 2013). A number of important causal factors for hypertension have been identified, including excess bodyweight; excess dietary sodium intake; reduced physical activity; inadequate intake of fruits, vegetables, and potassium; and excess alcohol intake. Lifestyle modifications and adoption of healthy lifestyles by all persons is critical for the prevention of high Blood pressure (Chobanian et al., 2003). It is essential to understand that appropriate knowledge of particular cardiovascular disease risk factors and risk behaviors, will help in guiding policy making for their effective control in the community (Dodani et al., 2004). In a study done to find the prevalence and awareness regarding hypertension including the risk factors, symptoms, complications, management among the male adults in a Kavreli population of Nepal subjects had low awareness regarding hypertension and associated risk factors (Kharel and Mainalee, 2017).

Hypertension and stroke occur at a relatively younger age in Asians and the risk of hypertension increases at level of body mass index of 23–25 kg/m^2. Overweight, sedentary behavior, alcohol, salt intake, diabetes mellitus and smoking

are risk factors for hypertension in most of the countries of Asia (Singh et al., 2000). Obesity, hypercholesterolemia, hypertension and habits contributing to the risk of cardiovascular diseases which have their roots in childhood, tend to continue into adulthood. Hence, any preventive actions against these diseases in late adulthood will be far too late. This is why, from an early young age, programs promoting knowledge on physical activity, healthy eating habits and a non-smoking policy should be undertaken in order to prevent the diseases (Grad et al., 2015).

Knowledge of the predisposing risk factors is vital in the modification of lifestyle behaviors conducive to optimal cardiovascular health. Measuring and appropriately disseminating knowledge of the modifiable risk factors at an early age is an essential preventive educational approach (Shaikh et al., 2011). As per the data of NDHS 2016, the prevalence of hypertension in 15-19 years is 2.9%and in 20-24 years 3.2%. The data suggested increase in the prevalence with increasing age so early awareness on the prevention of hypertension is useful to reduce overall burden of disease (NDHS, 2016). In a study done in 2000 A.D. on title Heart disease and young adult: is prevention important? The result has demonstrated that adolescent and young adult has some knowledge on cardiac risk factors and prevention and thus prevention is important to this group of population (Vale, 2000). Hypertension in youths is an important social and medical health issue but there is no precise epidemiological data on the social awareness of hypertension among youth group of population (Grad and Kiliś-Pstrusińska, 2013).

2. Methods

A descriptive cross sectional research design was used for the study. The setting of the study was Pulchowk Campus, Lalitpur, Institute of engineering, Tribhuvan University. Sampling population were First year Bachelor level students of civil engineering faculty of 18 to 24 years age. The sample size was 106. Self-administered structured questionnaire was used. Data was be analyzed on the basis of research objective by using simple descriptive statistics and inferential statistics.

3. Result

Table 1: Socio-demographic Characteristics of the Respondents, (n= 106)

Characteristics	Frequency	Percentage
Age (in completed years)		
<20	76	71.7
≥ 20	30	28.3
Mean ± SD = 19.20 ±1.037		
Sex		
Male	95	89.6
Female	11	10.4
Family structure		
Nuclear	88	83.0
Joint	15	14.2
Extended	3	2.8

Above table shows that, out of 106 respondents, the mean age ± SD was 19.20 ± 1.037. 71.7% respondents were less than 20 years old and 28.3% were 20 and more than 20 years old. Regarding sex 89.6% were male and 10.4% were female. About family structure, 83% has nuclear family and 2.8% has extended family.

Table 2: Family history of hypertension, **(n=106)**

Characteristics	Frequency	Percentage
Having hypertension in family (n=106)		
Yes	61	59.4
No	45	40.6
If yes, Relation with family members		
Parent	36	57.1
Grandparent	20	31.7
Uncle/ Aunt	5	7.9

Regarding the history of hypertension in family, out of 106 respondents 59.4% respondents had hypertension on nearest person. Out of 61 respondents 57.1% have parents with hypertension in family member.

Table 3: Awareness on High Blood Pressure, **n=106**

Variables	Frequency	Percent
Risk factors of high blood pressure *		
Stress	86	81.1
High salt intake	72	67.9
Overweight	66	62.3
Physical inactivity	63	59.4
Fatty diet	63	59.4
Family history	54	50.9
Excessive alcohol intake	47	44.3
Smoking	39	36.8
Risk of high blood pressure as per age		
Increases with increasing age	96	90.6
Amount of salt consumption healthy in diet: 1 teaspoonful (5gm)	44	41.5
Amount of oil consumption healthy in diet : 3-4 teaspoonful (15 to 20ml)	76	71.7

Multiple responses

Table 3 shows that out of 106 responses, regarding the risk factors of high blood pressure 81.1% mentioned stress to be the factor and only 44.3% mentioned excessive alcohol intake to be risk factor of high blood pressure. Concerning, 90.6% answered that the risk of high blood pressure increases with the increasing age. Above table shows that out of 106 respondents 41.5% mentioned 1 teaspoonful or 5gm salt per day is healthy in diet. Regarding amount of oil consumption healthy in diet 71.7% respondents answered 3-4 teaspoonfuls.

Table 4: Awareness on Risk Factors of High Blood Pressure, (n= 106)

Variables	Frequency	Percent
Meaning of blood pressure	94	88.7
Value of normal blood pressure in adult		
Blood pressure between 90/60-120/80mm of Hg	42	39.6
Value termed as high blood pressure in adult		
When blood pressure is above 140/90 mm of Hg	73	68.9
Knowledge on diagnosis of High blood pressure		
Blood pressure high in at least three separate regular visit	25	23.6

Table 4 shows that out of 106 respondents 88.7 % answered the meaning of blood pressure as a pressure of blood on blood vessels. Regarding the value of normal blood pressure in adult 39.6% answered that the normal range is between 90/60 to 120/80mm of Hg. Concerning the value termed as hypertension 68.9 % answered blood pressure is regarded high when it is more than 140/90 mm of Hg. About the diagnosis of high blood pressure 23.6% answered that for the diagnosis of high blood pressure it should be high in at least three separate regular visit.

Table 5: Awareness on Signs and Symptoms and Prevention of High Blood Pressure, n=106

Variables	Frequency	Percentage
Sign and symptoms of high blood pressure *		
Headache	80	75.5
Palpitation	66	62.3
Dizziness	60	56.6
Blurred vision	48	45.3
Fatigue	41	38.7
Nose bleeding	40	37.7
Flushing of face	33	31.1
Don't know	8	7.5
Preventive measures of hypertension*		
Eating healthy diet	89	84
Reducing stress	87	82.1
Doing regular exercise	86	81.1
Maintaining normal weight	78	73.6
Limiting alcohol	59	55.7

Multiple responses

Table 5 shows that out of total 106 responses, 75.5% mentioned headache to be the sign and symptom of hypertension, 31.1 % mentioned flushing of face as sign and symptoms of hypertension. Apart from this, 7.5% didn't know about any of the signs and symptoms of hypertension.

Table 6: Respondents' Level of Awareness on Prevention of Hypertension
Mean score ± S.D. = 58 ± 16.23

Level of awareness	Frequency	Percent
Adequate awareness (≥mean score)	54	50.9
Inadequate awareness (<mean score)	52	49.1
Total	106	100

Table 6 illustrates that 50.9% of youths have adequate level of awareness and 49.1% have inadequate level of awareness regarding the prevention of hypertension.

The total score for correct response of the questions regarding the awareness was calculated. Awareness score of each respondent was converted into percentage. Then the mean score (mean of awareness in percentage) was calculated. Awareness percentage of each respondent was compared with the mean score such that respondents scoring greater than or equal to mean score was categorized as having adequate awareness and respondents with awareness percentage less than mean score was categorized as having inadequate awareness.

Table 7: Association between Respondents' Level of Awareness and Selected Variables

Variables	Level of awareness				P-value
	Adequate		Inadequate		
	no.	%	no.	%	
Age					
<20	41	75.9	35	67.3	0.325
≥20	13	24.1	17	32.7	
Sex					
Male	48	88.9	47	90.4	0.801
Female	6	11.1	5	9.6	

Fisher's exact test
P value significant at ≤ 0.05

Table 7 depicts no association between the level of awareness and the selected variables (age, sex). There are no association between the level of awareness and their age and sex.

4. Discussion

Regarding meaning of blood pressure, 88.7% answered. In another study done by Kofi J (2011) only 2% answered the meaning of blood pressure. The massive variation in the findings is because of the study population. As in this current study educated group of respondent was taken whereas in the other one women of child bearing age in community was taken Concerning the value of normal blood pressure in adults 39.6% of respondents gave the correct answer that is 90/60 – 120/80 mm of hg. The study finding is similar with another study done by Nayak, S et.al (2016) where 30% of respondents had answered the normal range of blood pressure. About the meaning of hypertension i.e. above 140/90mm of Hg, 68.9% respondents gave the correct answer. The study finding of another study done by Muntner P et al. (2003) showed only 26.4% of population without the history of CVD met the definition of hypertension. The variation in the study result may be because of study population and study settings. About the risk factors of high blood pressure, out of 106 respondents in the study, 81.1 % respondent mentioned stress, the study is similar to another study done by Shaikh R (2011) where 75.5% respondents mentioned stress as a risk factor.Similarly 67.9 % mentioned high salt intake, 62.3 % obesity, 59.4% physical inactivity, 49.1% family history as a risk factor of hypertension in the current study. The findings are supported by study of Shaikh R (2011) where 69.1% mentioned high salt intake, 73.6% obesity, 47.3% physical inactivity, and 50.9% family history. 36.8% respondents in the current study mentioned smoking as a risk factor. The finding varies with the study of Shaikh R (2011) where 70.1% mentioned smoking as risk factors of hypertension the variation in the findings of both study may be because of study population as it was done in entry year students of medical university.

Regarding the awareness of higher risk of hypertension in male, 60.4% of respondents in current study mentioned the correct answer. The finding of the study varies with the study of Shaikh R (2011) where only11.8% had the knowledge of risk of hypertension in male. The variation in the study may be because of time factor. The study by Shaikh R was done around 6 years back and awareness level regarding non communicable disease is increasing

massively, which may be the reason why study population became more aware of the risk of hypertension in male in current study.

Regarding sign and symptoms of hypertension out of 106 respondents 75.5% mentioned headache, 73.2% mentioned palpitation, 45.3% mentioned blurred vision, and 37.7% mentioned nose bleeding. The study findings are supported by another study done by Zafar S. N et al. (2008) where 85.5% normotensive respondents mentioned headache, 62.3% mentioned palpitation, and 53.2% mentioned blurred vision and 53.2% answered nose bleeding as the sign and symptom of hypertension. 56.6% of respondents in the current study identified dizziness; the finding varies with the study done by Zafar S. N et al. (2008) where 81.8% respondents had mentioned dizziness as a sign and symptoms of hypertension.

About the preventive measures of hypertension, 84% of respondents mentioned eating healthy diet. The study findings varies with the study done in by Kharel S (2017) where only 25% had identified eating healthy diet as a preventive measure of hypertension. The variation in the finding is because the study was done in kavre in community setting including both educated and uneducated mass of people. In this study, regarding the preventive measures 82.2% recognized reducing stress, 83.2% recognized doing regular exercise, 73.6% recognized maintaining normal weight, 55.7% mentioned limiting alcohol, and 51.9% recognized stopping smoking. The study finding varies with the study done by Kofi J (2011) where only 5% recognized reducing stress, 40% recognized doing regular exercise, 12% mentioned maintaining normal weight, and 15% mentioned limiting alcohol and 15% mentioned stopping smoking a preventive measures of hypertension. About the food that prevents high blood pressure, 75.5 % of respondent in the study identified less fatty food which varies massively with the study done by Kofi J (2011) where only 8% of respondents had identified less fatty food. The variation in the study is because of sample population and setting.70.8% respondents in the study had identified eating plenty of fruits and vegetables which is similar finding of the study by Pandey R (2012) where 71.6% had knowledge on eating plenty of fruits and vegetables. Similarly regarding the low salt intake 65.1% respondents were found aware which varies with the study done by Kofi J (2011) where only 8 % had identified low salt intake as a measure to prevent hypertension. The variation in the findings of the study is because of selection of population and setting.

Almost all i.e. 92.5% of respondents in the study had identified the necessity of regular blood pressure checkup without any illness which varies with the study done by Vaidya et al. (2013) where only 59% had identified the necessity of regular blood pressure checkup without illness. The variation in the findings of study is because that study was done in community setting and included both educated and uneducated group of people.In the study 51.9% of respondents had adequate awareness and 48.1% of respondent had inadequate awareness regarding hypertension which varies with the study done by Zafar N.S et al. (2008) where 25.45% normotensive respondents of 16-25yrs age had adequate awareness on hypertension. The variation in the study is because of population selection and setting. Also it is similar to the findings of another study done by Pandey R (2012) where 57.8% respondents had adequate awareness.

Association of demographic variables like age, sex, economic status and family history with the awareness score was observed by doing chi square test but the selected variables were not statistically associated with the awareness score of the respondents as the p value was found >0.05. The finding contradicted with the study of Pandey R (2012) where knowledge was significantly associated with age, gender, education level and family history. The significant variation in the finding is may be due to the selection of educated group of population and small setting.

5. Conclusion

The awareness of youths regarding prevention of hypertension is adequate in half of the basic concept of hypertension. Only half of the respondents are aware on hereditary risk for hypertension. Majority of them have idea about diet modification, reducing stress and exercise for prevention of hypertension. Only half of them are aware about effects of alcohol and smoking on blood pressure. Almost all of them are aware about regular blood pressure screening. There is no significant statistical association between the respondent's level of awareness and selected variables possibly due to the selection of campus setting and educated population.

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