Awareness about hypertension among first year undergraduate medical students in HUCOM, Hadhramout, Yemen

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Abstract:

Background: Hypertension is currently a global health problem leading to a high number of deaths in a day. Therefore, people need to be aware of various aspects regarding hypertension.

Objective: The aim of this study is to determine the level of awareness about the different aspects of hypertension among first year undergraduate medical students in HUCOM, Yemen.

Methods: A cross sectional study among medical students enrolled in first year, in the three academic programs (Medicine, Pharm D, and Laboratory) of HUCOM, with the use of a validated, self-administered questionnaire on different domains of hypertension such as general knowledge, symptoms, complications, risk factors, treatment and management. Data were collected from first of March 2018 to end of April 2018. The sample included 150 students.

Results: Out of 150 participants, 86 participants were ≤19 years where female accounted for 64%, and males 36%. Domain with highest level of awareness was treatment and management (medication –95.3%), followed by symptoms (severe headache –80%), risk factors (stress –75%), lastly organ affected (brain –70%). Some knowledge gaps were identified in the domains: organ affected (eye – 48%, heart – 50%), risk factors (gender – 41.3%, age – 44.7%), symptoms (bleeding from nose– 56.7).

Conclusion: The study shows overall good level of awareness in most domains related to hypertension with some gaps noted in others.

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ملخص البحث

الخلفية:

يعتبر ضغط الدم مشكلة صحية على مستوى العالم و يؤدي إلى وفاة أعداد كبيره يوميا. لدلك الناس بحاجه إلى معرفة المظاهر المختلفة لمرض ضغط الدم.

الهدف:

هدف الدراسة الحالية هو تقييم مستوى الوعي لمظاهر ضغط الدم المختلفة بين طلاب المستوى الأول من التعليم الجامعي في كلية الطب و العلوم الصحية بجامعة حضرموت.

منهجية البحث:

البحث عبارة عن دراسة مقطعية شملت 150 طالب من طلبة المستوى الأول من التعليم الجامعي في الأقسام الطبية الثلاثة (قسم الطب بشري, قسم دكتور صيدلاني, وقسم المختبرات) في كلية الطب والعلوم الصحية بجامعة حضرموت. تم جمع معلومات الدراسة في الفترة من بداية شهر مارس حتى نهاية شهر إبريل بإستعمال إستبيان شمل معلومات خاصة بضغط الدم كالمعرفة العامة بتعريف وتصنيف ضغط الدم, الأعراض, المضاعفات و العلاج.

النتائج:

بينت الدراسة التي شملت 150 طالب أن 86 من الطلبة كانت أعمارهم 19 عام أو أقل, كانت نسبة الإناث حوالي 64% بينما الذكور كانت نسبتهم 36%.أكثر مجال يتعلق بارتفاع ضغط الدم كان وعي الطلبة له هو العلاج (بإستخدام الأدوية بنسبة 95.3%), يليه الأعراض (عرض الصداع الشديد 80%), عوامل الخطر (عامل الضغط 75%), وفي الأخير الأعضاء المتأثرة بارتفاع ضغط الدم (الدماغ 70%). بعض القصور المعرفي كان موجود خصوصا في مجال الأعضاء المتأثرة بضغط الدم (العين 48% - القلب 50%), عوامل الخطر (الجنس 41.3% - العمر 44.7%), الأعراض (الرعاف 56.7).

الإستنتاج:

الدراسة الحالية أظهرت مستوى وعي جيد فيما يتعلق بضغط الدم في معظم المجالات المعرفية مع وجود قصور في مجالات أخرى.

Introduction:

Hypertension is a major contributor to the global disease burden. It poses an important public health challenge to both economically developing and developed countries, including Yemen. Hypertension is one of the most important modifiable risk factors for cardiovascular diseases worldwide (1).

It is a condition in which a person's heart pumps blood at a higher pressure than normal through his arteries. The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure (JNC7) defined hypertension as blood pressure >140/90 mmHg (2).

Hypertension is classified as either primary (essential) or secondary hypertension. Whilst 90-95% of cases are categorized as primary hypertension (high blood pressure with no obvious underlying medical cause), just 5-10% of cases are categorized as secondary hypertension (caused by other conditions that affect kidneys, arteries, heart or endocrine system) (3).

Hypertension is a disease related to risky health behaviors, including smoking, poor diet, overweight and obesity, physical inactivity and occupational lifestyle (4).Some risk factors for hypertension are modifiable, such as smoking, diet, and overweight, whereas some are not modifiable, such as old age and genetic predisposition (5).As blood pressure gradually increases with age, proper management leads to prevention of hypertension, cardiovascular diseases, stroke and renal diseases. People diagnosed with hypertension demand pharmacological and nonpharmacological treatment (6).

The percep¬tion of hypertension by the individual also plays an important role in changing lifestyle and risky health behaviors.In a community study done on Hispanic subjects, knowledge about hypertension on risk factors and treatment was well known compared to definition and etiology (7).

Regarding knowledge of the medical scientific community especially physicians and medical student's; a study done in Saudi Arabia about the assessment of knowledge of physicians working in primary health care units showed low level of knowledge and about two thirds of doctors didn't know the definition of hypertension (8) while medical students have low knowledge about risk factors of hypertension in gulf region (9). It is important to medical students to a quire a good and relevant knowledge about hypertension,definition, classification, symptoms, risk factor, and management for best control of the diseases

and this is an educational issue. To what extent the medical curriculum is better designed and implemented to improve competence of medical students in Hadhramout University as a future doctors? Up to my knowledge, this topic was not yet studied. The aim of this study is to assess the knowledge of first year medical students in Hadhramout University College of medicine (HUCOM) regarding hypertension during the academic year 2018/2019.

Subjects and methods:

This is a cross-sectional study. It was carried out in HUCOM in Al-Mukalla city in the eastern of Yemen during two months period (March 2018 to end of April 2018).

The study subjects are a randomly selected from the first year medical students (150 students) of the three academic departments in HUCOM (80 students from medical department, 35 students from pharm D department and 35 students from laboratory department). Data was collected by using a validated, self-administered questionnaire designed by the researcher to meet the aims of the study.

The study variables were general knowledge regarding hypertension (definition, and classification), symptoms (severe headache, problems of vision, fatigue, bleeding from nose,), organs affected (eyes, kidney, heart, and brain), non-modifiable risk factors(age, gender, and family history), modifiable risk factors (bad habits, dietary habits and physical inactivity), treatment and management (medication, exercise, weight control, diet, regular medical checkups).

The data was analyzed by Statistical Package for Social Science version 20 (SPSS 20). Numbers and percentage were used to describe participant characteristics for categorical variables and data was presented in tables.

Results:

The total sample is 150 medical students of the first year; they are 96 females (64%) and 54 males (36%). The mean age of the participating students is 19.475 years ± 876 (Table 1).

About 22% of the medical students had family history of hypertension (Figure 1).

Table 1: Socio-demographic characteristics of the participants (N=150)

Characteristics		Gender			
		Male		Female	
		No.	%	No.	%
Age group in years	≤ 19	23	15.3	63	42
	>19	31	20.7	33	22
	Mean age ± SD	19.475± 876			
	Total	54	36	96	64
Academic program	Medical	33	22	53	35.3
	Pharm D	11	7.3	15	10
	Laboratory	10	6.7	28	18.7
	Total	54	36	96	64
Family history of hypertension	Yes	12	36.4	21	63.6
	No	42	35.9	75	64.1

Figure 1. Fanmily histroy of hypetension among 150 Medical students of Hadhramout University, 2018
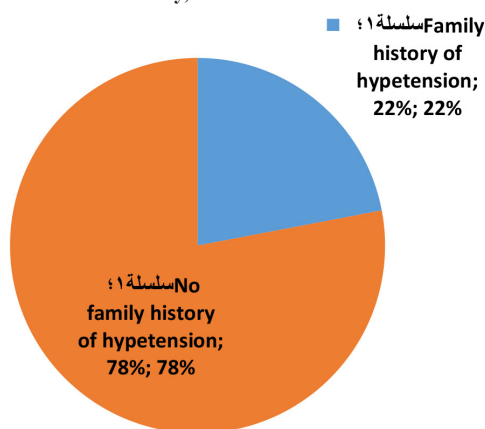

Fig 1: Percentage of medical students who had family history of hypertension.

About two thirds of the students recognized the definition of hypertension (67.3%) and classification (62.7%),while most of students know well the symptoms and signs of hypertension like headache (81.3%), Problems of vision (61.3%) and fatigue/tiredness (72.7%).The least symptom identified by students is bleeding from the nose (56.7%). Fist year medical students are still with limited knowledge regarding the organs damage due to hypertension such as eyes (48%) , kidney (57.3%),, heart (50%), and brain (66%) while seventy five students (46.6%) reported correctly that diabetes mellitus is not due to hypertension.

The most common risk factor that the student participants were aware about was stress (75.3%), dietary habits like salty food, high cholesterol food (68%) and for bad habits such as smoking, Qat chewing (65.3%), and physical inactivity (58.7%) while the least common risk factors known by the students were gender (41.3%), and age (44.7%).

Of the 150 students(95.3%) of them knew that drugs should be used in the treatment of hypertension, and (64.7%) of students knew that regular exercise prevents hypertension, while(61.3%) of students knew that weight gain needs to be controlled. About (75.3%) of students knew that patients with hypertension should not consume excessive salt or high cholesterol foods(Table 2).

Table 2 : General knowledge of the students of HUCOM regarding hypertension:

Statement / question		Good knowledge		Poor knowledge	
		No.	%	No.	%
Hypertension	Definition	101	67.3	49	32.7
	Classification	94	62.7	56	37.3
Symptoms	Severe headache	122	81.3	28	18.7
	Problems of vision	92	61.3	58	38.7
	Fatigue/tiredness	109	72.7	41	27.3
	Bleeding from nose	85	56.7	65	43.3
Organs affected	Eyes	72	48	78	52
	Kidneys	86	57.3	64	42.7
	Heart	75	50	75	50
	Brain	99	66	51	34
Risk factors	Age	67	44.7	83	55.3
	Gender	62	41.3	88	58.7
	Stress	113	75.3	37	24.7
	Bad habits (smoking, Qat chewing)	98	65.3	52	34.7
	Dietary habits (salty food, high cholesterol food)	102	68	48	32
	Physical inactivity	88	58.7	62	41.3
Treatment and management	Medication	143	95.3	7	4.7
	Exercise	97	64.7	53	35.3
	Weight gain control	92	61.3	58	38.7
	Diet control	113	75.3	37	24.7

Discussion:

The present study assessed knowledge of hypertension in different aspects like definition, symptoms, complication, risk factors and treatment among medical college students enrolled in the first year in HU-COM.

Hypertension is not well studied in young adults (10) and public awareness of hypertension was found to be quite poor (11). A study done in Gulf Medical University among entry first year students, Ajman, UAE showed 89.4% were aware about the definition of hypertension and 42.9% were aware about the classification (12),while in the present study 67.3 % of participants are well aware about the definition of hypertension and 62.7 were aware about the classification. Another study done in Tribhuvan university teaching hospital among hypertensive patients, Kathmandu, Nepal showed 56% were aware about the definition and classification of hypertension (13).

Regarding awareness of symptoms of hypertension a study reported that 86.3% of participants mentioned chronic headache as a symptom of hypertension compared to the present study (81.3%). The level of awareness was high among the subjects as compared to the participants in the present study (12). Another study reported that only 68% of participants reported chronic headache as one symptom of hypertension (13). The study done in the first year student in Gulf Medical University, Ajman, UAE, mentioned that vision related problems were reported by 65.8% as one of the symptoms of hypertension followed by 79.5% reported that fatigue/tiredness as one of the symptoms of hypertension. In this study vision related problems were reported by 61.3% of the participants and fatigue/tiredness by 72.3% as symptoms of hypertensions (12).

Regarding to organs affected, a study done in Nigeria, 84% reported stroke as main complication of hypertension and only a few subjects associated an eye problem that is retinal failure (14). Compared to this study 66% of participants reported brain stroke as a complication of hypertension while 48% reported eye damage as a complication of hypertension. A study in Korea reported that more than 75% of participants are aware of relationship between hypertension, stroke and heart diseases (15). This study reported 50% were aware that heart diseases may be a complication of hypertension.

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The results of the present study indicate that 75.3% of the participants were aware that stress is a risk factor of hypertension, dietary habits (salty food, high cholesterol food), bad habits (smoking, Qat chewing), and physical inactivity were considered as risk factors by 68 %, 65.3%, and 58.7% respectively. The overall knowledge of modifiable risk factors was better than that of non-modifiable risk factors, where only 44.3% know the risk related to male gender and 41.7% know the risk with increasing age. A similar study among entry year students in medical university found that about 70% of participants were aware that stress and physical inactivity are risk factors of hypertension, about 60% were aware of high salt and high cholesterol intake as risk factors, about 50 % were not aware of risk factor male gender, and increasing age (16). Another study done in Seychelles, reported smoking as a cause of high blood pressure by most participants (17), while in this study 65.3% were aware that smoking is a risk factor of hypertension.

In this study95.3% of students knew that drugs should be used in the treatment of hypertension, 64.7% of participants knew that regular exercise prevents hypertension, 61.3% of participants knew that weight gain needs to be controlled and 75.3% of participants knew that patients with hypertension should not consume excessive salt or high cholesterol foods. These results are consistent with a number of prior studies. Spain study showed that 96.9% of participants knew that drugs must be taken for hypertension, 70.8% of participants agreed that exercise reduce hypertension, 64.4% of participants knew that weight gain needs to be controlled and 78.5% of participants knew that salt restriction prevents hypertension (7).

Conclusion:

Despite the limitations of this study to the first year medical students, it provides an insight to the knowledge regarding different aspects of hypertension among students in the three academic departments in HUCOM. Early exposure of the first year medical students to the clinical knowledge and skill training is highly recommended.

Acknowledgement:

Reference:

1. World Health Organisation 2014. Global Strategy on Diet, Physical Activity, and Health: Childhood Overweight and Obesity. Retrieved on 30th October, 2014.

2. Shobha S and Avinash N. Prevalence of prehypertension amongst medical students in coastal karnatak. Journal of Evolution of Medical and Dental Sciences. 2012; 1(6): 974-981.

3. The American Heart Association 2014. Understanding Blood Pressure Readings. http:www.heart.org/HEARTORG/Conditions/HighBlood/Pressure/HighBloodPressure/Understanding-Blood-Pressure-Readings_UCM_301764_Article.jsp. Retrieved on 4th January 2015.

4. World Health Organization: Cardiovascular diseases: Key messages to protect heart health. 2011; Available from: http://www.who.int/cardiovascular_diseases/en/. Accessed August 22, 2011.

5. Kusuma Y. Perceptions on hypertension among migrants in Delhi, India: a qualitative study. BMC Public Health. 2009;9 (1):267.

6. Vasan RS, Beiser A, Seshadri S, et al. Residual lifetime risk for developing hypertension in middleaged women and men: The Framingham Heart Study. JAMA : the journal of the American Medical Association. 2002;287(8):1003-1010.

7. Al-Khashman AS. Screening for hypertension. Assessing the knowledge, attitudes and practice of primary health care physicians in Riyadh, Saudi Arabia. Saudi Med J. 2001; 22(12):1096-100 [Accessed on 2013 July 23]. Available from: http://www.ncbi.nlm.nih.gov/pubmed/11802184.

8. Shaikh RB, Mathew E, Sreedharan J, et al. Knowledge regarding risk factors of hypertension among entry year students of a medical university. J Family Community Med. 2011; 18(3): 124–129. doi: 10.4103/2230-8229.90011 [Accessed on 2013 July 23].Available from:URL; http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3237200.

9. Ailinger RL. Hypertension knowledge in a Hispanic community. Nurs Res. 1982 Jul-Aug; 31(4):207-10.[Accessed on 2013 July 23].Available from:URL; 31(4):207-10. [Accessed on 2013 July 23].Available from http: //www.ncbi.nlm.nih.gov/pubmed/6920657.

10. Reddy KS. Hypertension control: Challenges and opportunities. Natl Med J India. 2000; 13:1–2.

11. Akter R, Assadi RN, Ahadi H, Singh H, Lamichhane S, Abaszadhezouri MG, et al. Awareness about hypertension among entry year undergraduate health science students in Gulf Medical University, Ajman, UAE. Proceedings of the 6th Annual Scientific Meeting of Gulf Medical University, 5th & 6th November, 2014.

12. Bhandari B, Bhattarai M, Bhandari M et al. Awareness of disease and self-care among hypertensive patients attending Tribhuvan university teaching hospital, Kathmandu, Nepal. Journal of Nobel Medical College. 2012; Vol.1 No. (Accessed on 2013 Dec 11).

13. Abdullahi AA, Azmat J. Knowledge of hypertension among the staff of university of Ibadan, nigeria. Journal of public health and epidemiology 2011;3(5):204-09. Available from:URL:http://www.academia.edu/976664/Knowledge_of_hypertension_among_the_staff_of_University_of_Ibadan_Nigeria.(Acessed on 2013 Dec 11).

14. Min H, Chang J, Balkrishnan R. Socio-demographic Risk Factors of Diabetes and Hypertension Prevalence in Republic of Korea. Int.J. Hyperten. 2010.pp.1-6.

15. Acharya, R. and Chalise, H. Life style of patient before and after diagnosis of hypertension in Kathmandu. Health. 2011; 3: 490-497. Doi: 10.4236/health.2011.38081. Available from: URL: (Accessed on 2013 Dec 12).

16. Aubert L, Bovet P, Gervasoni JP, et al. Knowledge, attitudes, and practices on hypertension in a country in epidemiological transition. Hypertension. 1998; 31: 1136–45.