

Screening for Hypertension among Adults Attending Primary Health Care Centers in Baghdad

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ABSTRACT

Background: Hypertension is a common health problem worldwide with estimates as much as one billion patients, and cause of 7.1 million (one-third) of global preventable premature deaths. Hypertension remains a major risk factor for development of cardiovascular disease, which was responsible for 17.7 million deaths worldwide in 2015.

Objectives: To estimate the prevalence of hypertension among adults individuals aged ≥ 18 years attending primary health care centers in Baghdad.

Methods: A cross-sectional study was carried out in four primary health care centers of family medicine in Baghdad, from the first of February to the first of July 2013. A total of 350 adults aged ≥ 18 years of both gender attending the primary health care centers for any complaint were screened for hypertension. Pregnant women and previously diagnosed hypertensive patients were excluded.

Results: The studied sample included 350 adults comprising of 196 (56%) females and 154 (44%) males. Overall, the prevalence of hypertension was 24%. Male subjects had a higher prevalence of hypertension (25% for males and 23% for females). The majority (about 74%) of hypertensive patients aged ≥ 40 years.

Conclusions: About one fourth of the study sample had hypertension. Age was shown a significant associated risk factor for hypertension.

Keywords: Hypertension, Primary health care centers, Screening.

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Hypertension is a common health problem worldwide with estimates as much as one billion patients, and cause of 7.1 million (one-third) of global preventable premature deaths⁽¹⁻⁴⁾. Hypertension remains a major risk factor for development of cardiovascular disease (CVD), which was responsible for 17.7 million deaths worldwide in 2015 (about 45% of deaths due to non-communicable diseases). In the Eastern Mediterranean Region, the prevalence of hypertension about 26% and it affects approximately 125 million individuals^(5,6). In Iraq hypertension is considered as the sixth leading cause of death with a prevalence that ranges from 35.6% to 40%, and a total number of 6535 deaths occurred during 2015^(7,8).

Hypertension increases with age and a normotensive adult at age 55 has up to 90% lifetime risk of becoming hypertensive⁽⁹⁾. The outcomes of this disease must be considered: 35% of myocardial infarctions, 49% of heart failures, and 24% of premature deaths are caused by hypertension. Thus, treating a patient for hypertension detected through screening appears to provide morbidity and mortality benefits⁽¹⁰⁾.

The U.S. Preventive Services Task Force (USPSTF) strongly recommends that clinicians screen all adults for high blood pressure. The American Heart Association (AHA) and the American Academy of Family Physicians (AAFP) make similar recommendations^(10,11). Normal blood pressure is defined as levels $<120/80$ mm Hg. Systolic blood pressure of 120-139 mmHg or diastolic blood pressure 80-89 mmHg is classified as pre-hypertension. These patients are at increased risk for progression to hypertension. Hypertension

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is defined as systolic blood pressure ≥ 140 mmHg and/or diastolic blood pressure ≥ 90 mmHg⁽¹²⁾.

The aim of this study was to estimate the prevalence of hypertension among adults individuals aged ≥ 18 years attending four primary health care centers of in Baghdad.

Methods

A cross-sectional study was carried out in four primary health care centers of family medicine in Baghdad city during residency as part of the requirements for the Arab Board of family medicine, from the first of February to the first of July 2013. The selected primary health care centers of family medicine are: Bab Al-Muaadham PHCC, Al-Mustansria PHCC, Al-Mansour PHCC and Al-Dhobot PHCC. A total of 350 adults aged ≥ 18 years of both gender attending the primary health care centers for any complaint were screened for hypertension. Pregnant women and previously diagnosed hypertensive patients were excluded. The study was ethically approved by the Arab Board of Health Specializations and the four selected PHCCs in Baghdad. A short history and blood pressure measurement were noted during interview. The blood pressure was recorded in the sitting position using the same calibrated mercury sphygmomanometer with an appropriately sized cuff, after the subject had been seated for at least 5 minutes, two readings were taken and the mean of two was taken as the blood pressure measurement. When a case of high blood pressure was discovered for first time, the client was asked to return back within one week to recheck the blood pressure. Statistical analysis was done using statistical program (SPSS version 18: statistical package for social science). Finding a P value less than 0.05 were considered significant.

Results

The studied sample included 350 subjects comprising of 196 (56%) females and 154 (44%) males. The mean \pm SD of age was 38.6 ± 13.1 years. The mean age of females was 39.6 ± 12.2 years, and the mean age of males was 37.3 ± 14.2 years. For all subjects in this study the mean \pm SD systolic BP was 127.1 ± 16.6 mmHg and the mean \pm SD diastolic BP was 81.6 ± 9.2 mmHg. In hypertensive patients the mean \pm SD systolic BP was 149.4 ± 12.3 mmHg and the mean \pm SD diastolic BP was 92.1 ± 8.7 mmHg. In non-hypertensive subjects the mean \pm SD systolic BP was 120 ± 10.4 mmHg and the mean \pm SD diastolic BP was 78.3 ± 6.4 mmHg, (Table 1).

The mean \pm SD of systolic BP for males was 129.2 ± 14.4 mmHg, and for females 125.4 ± 18 mmHg. While the mean \pm SD of diastolic BP for males was 82.6 ± 9 mmHg, and for females 80.8 ± 9.3 mmHg, (Table 2).

Overall, 24% of the study sample was defined as hypertensive for all ages (females 23%, males 25%). Male subjects had a higher prevalence of hypertension, (Table 3).

The distribution of study sample according to readings of blood pressure was normal 20.3%, pre-hypertension 55.7%, hypertension 24% where 14.6% in stage 1 hypertension and 9.4% in stage 2 hypertension, (Figure 1).

The mean \pm SD of age for hypertensive patients was 48.7 ± 12.4 years, and the mean age for non-hypertensive patients was 35.4 ± 11.7 years. The distribution of subjects according to age group in relation to hypertension showed that there was gradual increase in the percentages of hypertension with age groups, it was shown 3.6% for age group (18-29) years, 22.6% for (30-39) years, 23.8% for (40-49) years, 26.2% for (50-59) years, and then decline to 23.8% for (60 and above) years. Unlike non-hypertensive; the majority of hypertensive (about 74%) aged ≥ 40 , (Table 4).

Table 1: The mean and SD of systolic and diastolic BP for the study sample.

Study Group		BP (mmHg)	
		Mean	SD
Total Sample	MSBP	127.1	16.6
	MDBP	81.6	9.2
Hypertensive	MSBP	149.4	12.3
	MDBP	92.1	8.7
Non hypertensive	MSBP	120.0	10.4
	MDBP	78.3	6.4

Table 2: The mean and SD of systolic and diastolic BP for the study sample in relation to gender.

	Gender	Mean	SD
Systolic BP	Male	129.2	14.4
	Female	125.4	18.0
Diastolic BP	Male	82.6	9.0
	Female	80.8	9.3

Table 3: The distribution of study sample according to gender in relation to hypertension.

Gender		Hypertensive	Non-hypertensive	Total
Female	No.	45	151	196
	%	23	77	100
Male	No.	39	115	154
	%	25	75	100
Total	No.	84	266	350
	%	24	76	100

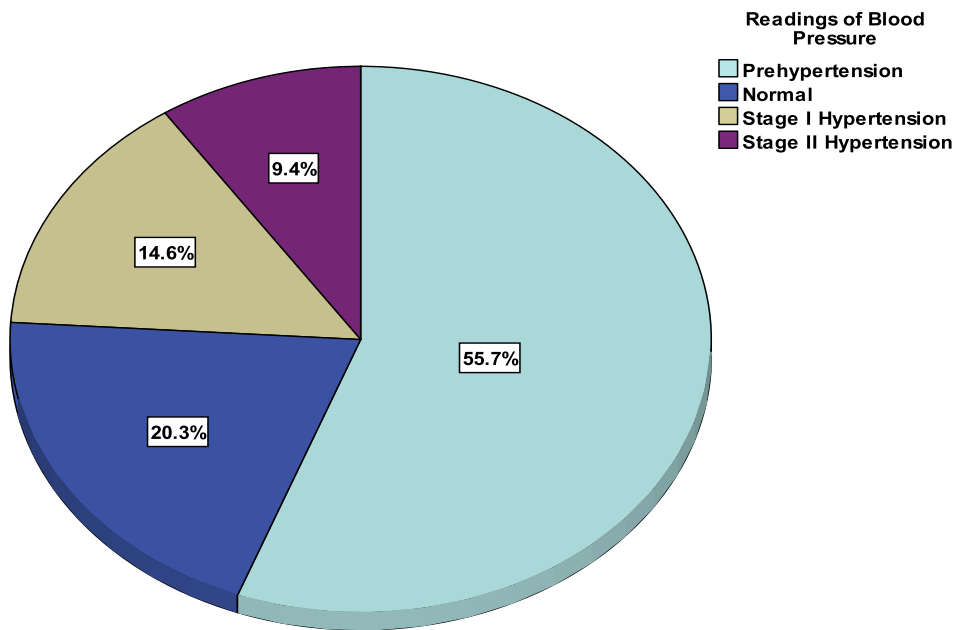


Figure 1: Distribution of study sample according to classification of blood pressure.

Table 4: The distribution of the study sample according to age group in relation to hypertension.

Age group (years)	Hypertensive (N=84)		Non-hypertensive (N=266)		Total (N=350)	
	No.	%	No.	%	No.	%
18-29	3	3.6	87	32.7	90	25.7
30-39	19	22.6	85	32.0	104	29.7
40-49	20	23.8	63	23.7	83	23.7
50-59	22	26.2	17	6.4	39	11.1
≥ 60	20	23.8	14	5.3	34	9.7

Discussion

The prevalence of hypertension in this study was 24%, being higher among men than women. Similar result was found in a household survey study conducted in Thi-Qar Governorate 2014 revealed that the overall prevalence of hypertension was 26.5%⁽¹³⁾. The prevalence of hypertension in a national survey for non-communicable diseases risk factors in Iraq 2015 by Ministry of Health was 35.6%⁽¹⁴⁾. The difference explained by that this study was excluded the already hypertensive people while in the national survey they were included. Our result was comparable to that reported in Bangladesh 23.7%, Saudi Arabia 26.1% and some African countries; Zimbabwe 27% and Nigeria 25%⁽¹⁵⁻¹⁸⁾. Some expected that sharing lifestyle patterns may be behind this similarity.

Our result was lower than that reported in some Arab and neighboring countries; Jordan 32.3%, Syria 40.6%, Qatar 32.1%, Turkey 44% and China 38.4%⁽¹⁹⁻²³⁾. However, it was higher than that reported in Kuwait (20%)⁽²⁴⁾. This difference may be due to socio-cultural factors or difference in prevalence of hypertension determinants.

Male gender had a higher prevalence of hypertension (25% for males and 23% for females) and this agree with the results from national survey for non-communicable diseases risk factors in Iraq 2015 being higher among men as compared to women (36.5% vs. 34.5% respectively)⁽¹⁴⁾. Also, this result consistent with Wahid et al and other studies in China and Bangladesh which was shown similar finding^(15,23,25). Before age 50, the prevalence of hypertension is lower in

women than in men, suggesting a protective effect of estrogen⁽²⁶⁾. Yet, this finding disagree with results from other studies in Thi-Qar Governorate 2014, Turkey and Iran where hypertension prevalence was higher in women than in men^(13,22,27).

There was a significant association between hypertension and age with gradual increase in the percentages of hypertension with increasing age and this agree with the results from study in Thi-Qar Governorate 2014 and the national survey for non-communicable diseases risk factors in Iraq 2015 which was shown that the rate increased with age approaching 80% among those 60 years and older^(13,14).

Chobanion et al 2003 was shown that hypertension increases with age and a normotensive adult at age 55 has up to 90% lifetime risk of becoming hypertensive⁽⁹⁾. Similar results were seen in other studies from Bangladesh, Turkey and China^(15,22,23). This problem is caused by the replacement of elastin by collagen and fibrous tissue in the elastic lamina of the aorta, an age-dependent process that is accelerated by atherosclerosis and hypertension or due to aggregation of the other risk factors which tend to increase with age advancement^(26,28).

In conclusion, about one fourth of the study sample had hypertension, being higher among men than women. Age was shown a significant associated risk factor for hypertension.

Since the prevalence of hypertension is high, there is a need to increase the awareness of physicians towards the

importance of screening program, aiming for early detection of asymptomatic hypertension among adults individuals aged ≥ 18 years attending primary health care centers.

Authors' contributions

Mohamed Yehya Abdul Hasan: Idea of the study, data collection, analyzer and writing of the study.

Wafaa F Tawfeeq: First supervisor and advisor.

Abdulla J Alfartoosi: Second supervisor and advisor.

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