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Awareness and Perception of Hypertension in Oman

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Abstract

Introduction: The WHO report in 2010 on country profiles estimated that non-communicable diseases account for nearly 83% of the total deaths in Oman. According to preliminary data from the World Health Survey in 2008, the community prevalence of hypertension in the country was estimated to be 40%. Three quarters of this hypertensive population were found to be unaware of their status.

Objective: The objective of the study was to assess the knowledge and perception of hypertension in Oman.

Methods: A cross sectional study was carried out in Oman with a pretested questionnaire on sociodemographic variables and knowledge and perception of people related to hypertension in Oman.

Results: More than 80% of the people were aware that hypertension is a burden in Oman and it is an increasing health problem which is preventable. Compared to the knowledge of symptoms and complications, people were more aware of the prevention strategies. Almost 97% were of the opinion that regular physical activity, weight reduction and decreased fat intake were good prevention strategies. Overall knowledge was higher in males, young age group, with secondary or higher education and those with family history of hypertension.

Conclusion: The knowledge of symptoms, risk factors, complications and preventive strategies of hypertension needs to be promoted in females, middle age group, those with less education and with no family members suffering from hypertension.

Keywords: Knowledge, hypertension, age, gender, education

Introduction

In 2005, the World Health Organization (WHO) estimated that 61% of deaths (35 million) and 49% of the global burden of disease were attributable to non-communicable diseases. If current trends continue, by 2030 chronic diseases will account for 70% of total global deaths and 56% of the global disease burden.¹ The WHO report in 2010 on country profiles estimated that non-communicable diseases account for nearly 83% of the total deaths in Oman.² A high prevalence of diabetes (11.6%), obesity (20.5%) and metabolic syndrome (21.0%) exists in Omani population particularly in urban dweller and older individuals.³ Several studies over past two decades have documented the distribution of risk factors associated with non-communicable diseases along with the increase in lifestyle-related to these diseases which have emerged as new health challenges to the country.⁴⁻⁷

Hypertension is a major medical problem affecting more than 1 billion individuals worldwide. It is a major public health challenge to Omani society due to socioeconomic development and epidemiological transition. According to preliminary data from the World Health Survey in 2008, the community prevalence of hypertension in the country was estimated to be 40%. Three quarters of this hypertensive population were found to be unaware of their status.⁸ The percentage of hypertension was above the global average of between 25 and 30 per cent. WHO experts have warned that this number is likely to double to 50-60 per cent by the year 2025. National survey 2000 Oman showed that thirty three percent of the subjects had high systolic or diastolic blood pressure (35.7% in males and 30.9% in females).⁹ In a study in Oman in 2002, the main risk factors of hypertension were diabetes (12%), overweight (30%), obesity (20%), and high cholesterol (41%).¹⁰ Out of four cardiovascular disease risk factors (hypertension, high cholesterol, diabetes, overweight/obesity) it was found that 72% of subjects had less than one risk factor and 2% had all four in another study in 2003 conducted on Oman.¹¹

Studies have shown that the influence of socio-demographic factors, such as age, gender and comorbidity, on hypertension control was variable with contradictory findings.⁸ Generally, the higher the BP, the greater is the risk. Cohort studies and randomized clinical trials have shown that the risks from raised hypertension can be partially reversed if an optimal BP control is achieved. El-Badawy et al reported the prevalence of uncontrolled hypertension as 73%. The main cause of uncontrolled hypertension was due to unhealthy lifestyle such as high consumption of fatty salty food, little physical activity, obesity and age.¹²

Despite decades of public health education, hypertension awareness remains problematic, with only about two-thirds of adults and the elderly aware of their hypertension status and known differences between men and women.¹³⁻¹⁶ Efforts to control hypertension include increasing public knowledge and awareness about the risks associated with high blood pressure. Increased awareness, follow up and control of hypertension in industrialised countries has resulted in a decreased tendency to morbidity and mortality from cardiovascular disease.¹⁷ With the illustrated background, this study was conducted with the objective of assessing the knowledge and perception of hypertension in Oman.

Methods

A cross sectional study was carried out in the visitors of Rustaq polyclinic who were above 18 years of age and gave informed consent to participate in the survey. A pretested structured questionnaire was used for data collection on socio-demographic variables and knowledge and perception of people related to hypertension in Oman. A total number of 500 subjects were enrolled in the study after taking informed consent from them. The research was approved by the Ministry of Health, Oman. Data was entered and analyzed in SPSS. Descriptive statistics was done and data was represented as frequency, percentages, mean and standard deviation of variables. Chi square test was used to compare frequency in different groups. A p value less than 0.05 was considered statistically significant.

Results

There were 500 study subjects. The mean age of the subjects was 44.2 years \pm 18.5 years. Minimum age was 19 years and maximum was 91 years. There were 35.4% subjects more than 50 years of age. There were 353 males (70.6%) and 147 females (29.4%). With regards to education most of them (42.4%) were either with primary education or illiterate. 21.8% had secondary education and 35.8% were with education more than secondary level. Most of them (58%) were

with a monthly income of OMR 500 to 1000. A few (22.6%) were with a higher monthly income more than OMR 1000 and very few (19.4%) were with an income less than OMR 500 (Table 1). Around 215 (43%) had a family history of hypertension and only 55 (11%) were diagnosed as hypertension. 6.4% of the study subjects were smokers. Only 34.7% did some leisure physical activity whereas only 27% exercised regularly. 42.8% had a family history of diabetes and 14.5% of them were diagnosed as diabetics.

Table 1: Socio demographic characteristics of the sample

Variable	Total (%)
Age (years)	
30	158 (31.6)
31-50	165 (33.0)
>50	177 (35.4)
Gender	
Female	147 (29.4)
Male	353 (70.6)
Education	
Higher secondary	179 (35.8)
Secondary	109 (21.8)
Primary	212 (42.4)
Occupation	
Physical activity	263 (52.6)
Sedentary	237 (47.4)
Monthly income	
<500 OMR	72 (19.4)
500-1000 OMR	215 (58)
>1000 OMR	84 (22.6)
Family history of hypertension	
No	285 (57.0)
Yes	215 (43.0)
Family history of diabetes	
No	286 (57.2)
Yes	214 (42.8)

With regards to the burden of hypertension in Oman, around 87% people believed that hypertension is a problem in Oman. It was felt by 86% that it is increasing. Despite the fact that the people realize it as a serious health concern; only 19.5% of them were familiar with the term hypertension. Knowledge regarding symptoms of

hypertension showed that commonest symptom known to them was headache (89.2%) followed by dizziness (66.0%) and palpitations (56.6%). Very few knew that shortness of breath (38.4%) and chest pain (28.4%) are also symptoms of hypertension. Percentage of people who knew at least 1 symptom of hypertension was 12.8%.

The frequently (>90%) identified risk factors of hypertension were reduced physical activity, smoking, overweight and unhealthy diet. Family history of hypertension as a risk factor was recognized by only 48% participants. Regarding knowledge of complications of hypertension, the information was less compared to symptoms and risk factors; very few knew that stroke (38.4%) and kidney problems (37%) are complications of hypertension.

The fact that hypertension is preventable was felt by 86% people. Knowledge regarding prevention of hypertension was very high in the population. Almost 95% were of the opinion that regular physical activity, weight reduction and reduced fat intake are preventive measures of hypertension. Quitting smoking as a preventive strategy for hypertension was felt by 96% people. 94% felt that stress management and regular checkup can prevent hypertension (Table 2).

Table 2: Knowledge and perception of hypertension

Variable	Females (%)	Males (%)	Overall (%)
Burden of hypertension			
Hypertension is a problem in Oman	130 (88.4)	303 (86.6)	433 (86.6)
Hypertension is increasing in Oman	131 (89.1)	297 (85.1)	428 (85.6)
Hypertension is preventable	127 (86.4)	302 (85.8)	429 (85.8)
Knowledge of normal blood pressure values	26 (17.9)	69 (20.2)	95 (19.0)
Definition of hypertension	26 (17.8)	68 (19.7)	94 (19.1)
Symptoms of hypertension			
Headache	138 (93.9)	308 (88.3)	446 (89.2)
Shortness of breath	48 (32.7)	144 (43.0)	192 (38.4)
Dizziness	93 (63.3)	237 (68.1)	330 (66.0)
Chest pain	36 (24.5)	106 (31.5)	142 (28.4)
Palpitations	71 (48.3)	212 (60.7)	283 (56.6)
Risk factors of hypertension			
Smoking	138 (94.5)	312 (90.2)	450 (90.0)
Overweight	142 (97.3)	330 (94.3)	472 (94.4)
Reduced physical activity	145 (98.6)	336 (96.0)	481 (96.2)
Unhealthy diet	130 (93.5)	285 (94.1)	415 (93.9)
Alcohol intake	129 (87.8)	284 (82.1)	413 (82.6)
Diabetes	116 (79.5)	268 (77.2)	384 (76.8)
Family history of hypertension	57 (38.8)	182 (51.7)	239 (47.8)
Complications of hypertension			
Heart disease	48 (32.7)	180 (51.1)	228 (45.6)
Kidney disease	59 (40.1)	130 (37.5)	189 (37.8)
Stroke	36 (24.5)	156 (44.3)	192 (38.4)
Eye problems	125 (85.6)	279 (79.9)	404 (80.8)
Prevention of hypertension			
Regular physical activity	142 (97.3)	342 (96.9)	484 (96.8)
Weight reduction	142 (97.3)	342 (97.7)	485 (97.0)
Quit smoking	143 (97.9)	335 (95.4)	478 (95.6)
Reduction in fat intake	136 (97.1)	297 (96.4)	433 (86.6)
Reduction in salt intake	142 (97.3)	341 (96.9)	483 (96.6)
Avoid alcohol	137 (93.8)	330 (94.0)	467 (93.4)
Stress management	134 (91.8)	334 (94.9)	468 (93.6)

Knowledge of Symptoms

More males (65.3%) than females (48%) had the knowledge of symptoms of hypertension and this difference was statistically significant ($p < 0.01$). Knowledge was more in young adults less than 30 years of age (37.8%) compared to adults in the age group of 31 to 50 years (33.2%) and more

than 50 years (19.8%) and the difference was statistically significant ($p < 0.001$). The knowledge increased with the increase in the education level; with the least knowledge (20.1%) in primary education group ($p < 0.001$). The knowledge was significantly higher in people who had family history of hypertension (31.6%) compared to those without it (28.4%), ($p < 0.05$).

Table 3: Knowledge of hypertension risk factors by socio-demographic factors

	Knowledge of symptoms		Definition of hypertension		Family history hypertension risk factor		Overweight risk factor		Heart disease complication		Stroke complication	
	%	<i>p</i>	%	<i>p</i>	%	<i>p</i>	%	<i>p</i>	%	<i>p</i>	%	<i>p</i>
Gender												
Males	65.3	0.006	19.7	0.707	51.7	0.008	69.9	0.159	51.1	0.000	44.3	0.000
Females	48.0		17.8		38.8		30.1		32.7		24.5	
Age group												
<30	37.8	0.000	29.4	0.000	57.0	0.000	90.4	0.001	72.8	0.000	62.7	0.000
31–50	33.2		21.6		53.7		95.1		52.4		47.6	
> 50	19.8		8.0		34.5		99.4		15.3		8.5	
Educational status												
Primary	20.1	0.000	5.9	0.000	33.0	0.000	97	0.086	22.7	0.000	15.8	0.000
Secondary	40.0		13.5		52.3		91.7		67.6		57.8	
High secondary	34.7		38.3		63.5		96.0		57.5		51.1	
Family History of hypertension												
Yes	31.6	0.022	29.3	0.000	58.1	0.000	95.8	0.675	51.9	0.018	47.4	0.000
No	28.4		11.7		40.1		94.7		41.1		31.7	
Total	29.7%		19.1%		47.9%		95.2%		45.7%		38.5%	

Knowledge of risk factors

More males than females considered family history of hypertension and overweight as the risk factors 51.7% ($p < 0.01$) and 69.9% ($p > 0.05$) respectively. Whereas females had more knowledge that decreased physical activity, overweight, smoking and diabetes are risk factors for hypertension but this result was not statistically significant. Considering age there was more knowledge about overweight as risk factors in adults more than 50 years and least in adults less than 30 years ($p < 0.05$) whereas for family history of hypertension as a risk factor, younger adults had more knowledge ($p < 0.001$). Age did not have an effect on the knowledge of other risk factors. People with high education had more knowledge about family history of hypertension

as a risk factor (63.5%) compared to people with secondary (52.3%) and primary education (33%), ($p < 0.001$).

Knowledge of complications & preventive measures

Males had significantly more knowledge about complications of hypertension. Heart disease was considered as a complication by 51.1% males and 32.7% females while stroke was considered by 44.3% as a major complication by males and 24.5% females ($p < 0.001$). It was least in older adults ($p < 0.001$). People with secondary and higher education had more knowledge about complications ($p < 0.001$) compared to those with primary education (Table 3). With regards to knowledge of prevention of hypertension,

it was almost same in both the gender. More young adults had the knowledge that weight reduction is a good preventive measure for hypertension ($p < 0.05$). For other preventive measures also young adults had more knowledge but it was not significant.

Discussion

More than 80% of the people were aware that hypertension is a burden in Oman and it is an increasing health problem which is preventable. Similar good levels of basic exposure to hypertension information have been reported in several previous studies among both hypertensive and non-hypertensive patients,¹⁸⁻²⁰ especially women.²¹ Overall 41.1% respondents had low knowledge on type2 diabetes and hypertension risk factors and their associated complications in a study in Tanzania.²² Rahman et al reported 56.3% of the respondents had higher knowledge of hypertension and 63% considered it as a problem which is less compared to our study.²³ These findings are consistent with NHANES III data suggesting that there has been an increase in BP awareness.²⁴ Some other studies have assessed hypertension knowledge and awareness in the general population²⁵ and hypertensive population²⁶ showing a decreased level of knowledge and awareness.

Compared to the knowledge of symptoms and complications people were more aware of the prevention strategies. Almost 97% were of the opinion that regular physical activity, weight reduction and decreased fat intake were good prevention strategies. Tesema et al reported that 67.7% respondents believe the fact that exercise reduces blood pressure.²⁷ Rahman et al found that 56.7% respondents knew the causes of hypertension, 63% knew that overweight was related to hypertension and 64% knew that physical exercise was beneficial.²³ In another study knowledge that hypertension could lead to other complications was seen among 55.6% respondents. This knowledge was significantly associated with level of education ($p = 0.001$) and occupation ($p = 0.001$).²⁸ Similar associations have been found in other studies.²⁹

In the present study only 19% knew the values of blood pressure defining hypertension and about normal blood pressure values which is very important information to practice self-care and preventive strategies. Rahman et al also reported a lower (30%) percentage of people who were aware of normal range of hypertension.²³ While Tesema et al reported a higher percentage of 59.2% who knew the ideal blood pressure.²⁷ Overall knowledge was higher in males, young age group, with secondary or higher education and those with family history of hypertension in the present study. In a study in Tanzania, female gender, primary or no formal education and age 40 years were significant determinants of low knowledge of hypertension.²² Rahman et al also reported that exposure to hypertension knowledge was significantly associated with family history of hypertension but not with education or occupation.²³

Lifestyle interventions have pivotal role in reducing the number of medications among hypertensive patients and preventing the risk of developing hypertension among normal population.³⁰ Although they differ in their content and perspective, models for behavior change emphasize the importance of evaluating the perceptions, attitudes, beliefs, and outcome expectations of individuals as crucial elements to understand observed behaviors and to guide behavioral change.³¹ Patients who were aware that elevated BP levels lead to reductions in life expectancy had a higher compliance level with medication use and follow-up visits than patients without this awareness.³²

Conclusion

Thus this study has drawn attention to one of the major burden of disease in Oman affecting almost 40% of the population. Despite the fact that the people realize it as a serious health concern; only 20% of them were familiar what hypertension actually is. The knowledge of symptoms, risk factors, complications and preventive strategies of hypertension were adequate overall but needs to be promoted in females, middle age group, those with less education and no family members

suffering from hypertension. Increasing the awareness in the whole community is crucial. Community based health education programs can be instituted especially to target females, old age and lesser educated section to raise awareness about hypertension.

Conflicts of interest: None

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