

# The Evaluation of Awareness Level Regarding the Risk Factors and Complications of Hypertension among the Normotensive and Hypertensive Adult Population of Arar City, Kingdom of Saudi Arabia

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## ABSTRACT

**Background:** Hypertension is among the major causes of myocardial infarction, stroke and renal failure. Awareness level in the community regarding the risk factors of hypertension may be helpful in the prevention, early detection and treatment of hypertension which may reduce the morbidity and mortality associated with it.

**Aim:** To evaluate the awareness level about the preventable and non-modifiable risk factors and complications of hypertension among the normotensive and hypertensive adult population of Arar city - KSA.

**Methods:** A total of 400 structured questionnaires have been distributed among the willing participants which included normotensive and hypertensive adults with age 18 years or above from the Arar city – KSA during the study period of March - April 2019. This questionnaire has been translated into the Arabic language for the better comprehension of the questions. The completely filled questionnaires have been included in the study for analysis.

**Results:** During the study period, a total of 400 questionnaires have been distributed among the adult willing participants. The completely filled questionnaires have been received from 312 participants with a response rate of 78%. These included 86 female and 226 male participants. The analysed data revealed that the participants with higher level of education (graduation or above) have sufficient knowledge (more than 50 %) regarding the risk factors and complication of hypertension as compared to the participants with low level of education (secondary school level or below). The p is significant (<0.0001) regarding the knowledge of risk factors of hypertension among the persons with higher level of education as compared to lower level of education and p value is 0.0031 regarding the knowledge of complications of hypertension among the adults with higher education as compared to low level of education and this p value is also significant.

**Conclusion:** The higher level of education among the community is associated with raised level of awareness about the risk factors and complications of hypertension.

**Keywords:** Awareness, Risk Factors, Complications, Hypertension

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## INTRODUCTION

Ischemic heart disease is quite common public health issue all over the world and it poses a significant threat to human life. There is a rising trend in the prevalence of cardiovascular diseases which has been attributed to the rising prevalence of risk factors of the Ischemic heart disease<sup>1</sup>.

Hypertension is a preventable major risk factor of cardiovascular disease, cerebrovascular accidents and nephrosclerosis. The prevalence of hypertension varies from 26.4% to 43.5% among the different countries<sup>2,3,4</sup>. The reduction in the prevalence of hypertension will be an effective strategy for the control of morbidity and mortality due to cardiovascular disease, cerebrovascular diseases and nephrosclerosis.

The risk factors associated with the occurrence of hypertension include gender, advancing age, lack of physical activity, sedentary life style, overweight, obesity, abdominal obesity, cigarette smoking, alcohol intake, marital status, occupation, educational status, mechanization, urbanization, adolescent pregnancy, parity, family history, high intake of sodium, low intake of potassium, stress, diabetes mellitus, sleep apnea, oral contraceptives<sup>5,6,7</sup>.

The awareness of preventable risk factors of hypertension among the community will reduce the burden of disease and will result in decreased morbidity and

mortality associated with cardiovascular and cerebrovascular diseases. The knowledge of non-preventable risk factors will be helpful for the identification of high risk persons which may be closely followed for the early detection and control of the hypertension. This will further reduce the chance of complications associated with hypertension.

The aims and objective of the present study is to evaluate the awareness level about the preventable and non-modifiable risk factors and complications of hypertension among the hypertensive as well as normotensive adult population of Arar City – KSA.

## MATERIALS AND METHODS

After getting the approval of present research project from the local committee of bioethics - Northern Border University, the study was initiated by dividing the various areas of the Arar city among the field workers regarding the distribution and collection of questionnaire from the local adult residents of the Arar city.

A total of 400 questionnaires have been distributed in the Arar city – KSA by convenience sampling among the willing participants during the period of March 2019 to April 2019. This questionnaire has been translated into the Arabic language for the better comprehension of the questions. The structured proforma contains twelve questions regarding the documented risk factors of hypertension and

four questions about the complications associated with hypertension. The confidentiality of the obtained data from the participant is ensured. The incompletely filled proformas have been excluded while the completely filled questionnaires have been analyzed with the help of computer software after the entry of data on excel sheets.

**RESULTS**

During the study period, a total of 400 proformas have been distributed among the adult residents of Arar city-KSA. Three hundred and twelve completely filled proformas have been gathered with a response rate of 78% which included 86 female and 226 male participants. Among the female participants, there were 47 females with the education level of graduation or above while 39 female have secondary school level education or less than this education level. Similarly, there are 112 male participants

with education level of graduation or more than graduation while 114 male have education level of secondary school or less than that.

The data analysis revealed that majority of participants with higher level of education (graduation or above ) have sufficient knowledge (more than 50%) regarding the risk factors and complication of hypertension as compared to the persons with lower level of education (secondary school level or below). The results are shown in table 1-2 and depicted in figure 1. The evaluation of data also revealed that there is an improvement in the knowledge about the risk factors and complication of hypertension among the persons with lower level of education ( secondary school level or below) with advancement in their age. The results are shown in figure 1.

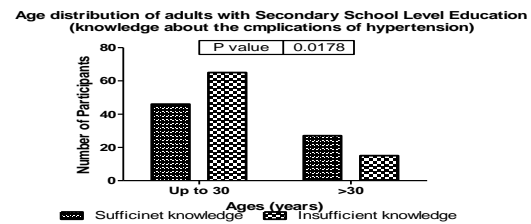
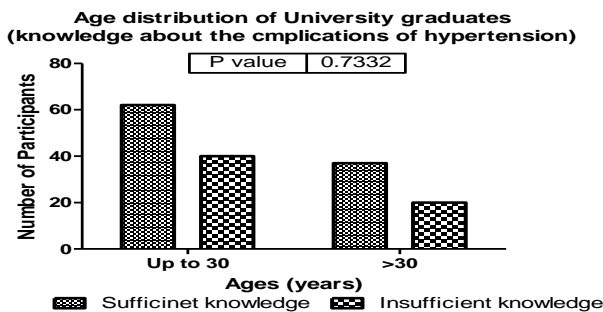
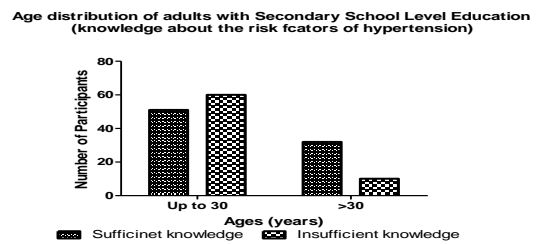
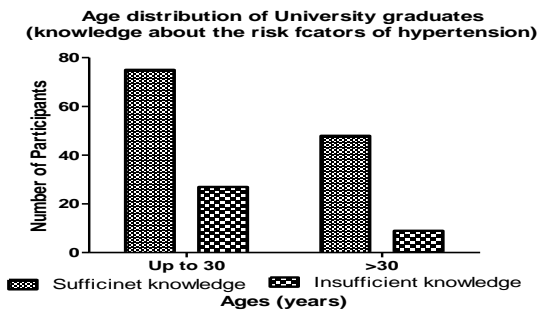
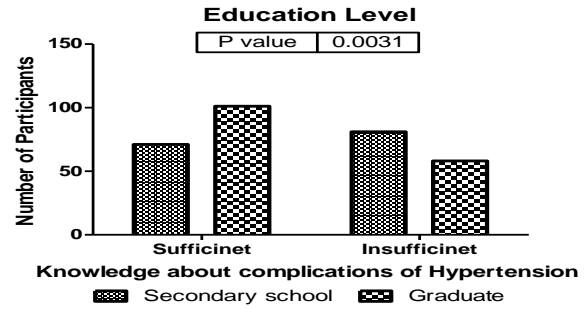
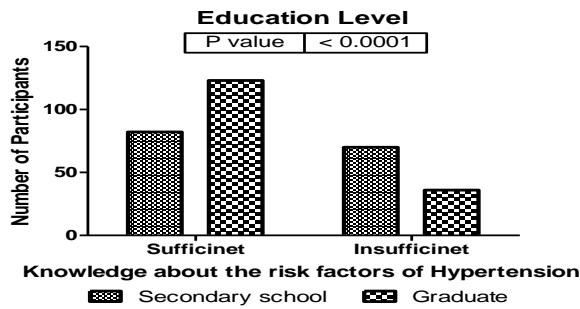


Table 1: The assessment of awareness level regarding the risk factors of Hypertension among the adult population of Arar City. Kingdom of Saudi Arabia

Questions Do you know that these risk factors are associated with hypertension	Education level	Female				Male				Total			
		Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
Sedentary life style	Graduation	40	85	7	15	92	82	20	18	132	83	27	17
	Secondary school	31	79	8	21	66	58	48	42	97	63	56	37
Lack of physical activity	Graduation	41	87	6	13	95	85	17	15	136	86	23	14
	Secondary school	30	77	9	23	72	63	42	37	102	67	51	33
Overweight	Graduation	41	87	6	13	94	84	18	16	135	85	24	15
	Secondary school	23	59	16	41	64	56	50	44	87	57	66	43
Cigarette smoking	Graduation	33	70	14	30	79	71	33	29	112	70	47	30
	Secondary school	22	56	17	44	52	46	62	54	74	48	79	52
Alcohol intake	Graduation	25	53	22	47	49	44	63	56	74	47	85	53
	Secondary school	17	44	22	56	31	27	83	73	48	31	105	69
High intake of Sodium	Graduation	29	62	18	38	66	59	46	41	95	60	64	40
	Secondary school	22	56	17	44	24	21	90	79	46	30	107	70
Stress	Graduation	36	77	11	23	89	79	23	21	125	79	34	21
	Secondary school	32	82	7	18	59	52	55	48	91	59	62	41
Diabetes mellitus	Graduation	26	55	21	45	73	65	39	35	99	62	60	38
	Secondary school	25	64	14	36	51	45	63	55	76	50	77	50
Oral Contraceptives	Graduation	14	30	33	70	25	22	87	78	39	25	120	75
	Secondary school	15	38	24	62	14	12	100	88	29	19	124	81
Pregnancy	Graduation	28	60	19	40	41	37	71	63	69	43	90	57
	Secondary school	22	56	17	44	24	21	90	79	46	30	107	70
Increasing age	Graduation	40	85	7	15	84	75	28	25	124	78	35	22
	Secondary school	29	74	10	26	57	50	57	50	86	56	67	44
Family history	Graduation	25	53	22	47	68	61	44	39	93	58	66	42
	Secondary school	25	64	14	36	50	44	64	56	75	49	78	51

Table 2: The assessment of awareness level regarding the complications of Hypertension among the adult population of the ArarCity – Kingdom of Saudi Arabia

Questions Do you know that these are complications of uncontrolled / untreated hypertension	Education level	Female				Male				Total			
		Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
Heart attack	Graduation	35	74	12	26	77	69	35	31	112	70	47	30
	Secondary school	28	72	11	28	56	49	58	51	84	55	69	45
Cerebrovascular accident (Paralysis)	Graduation	24	51	23	49	66	59	46	41	90	57	69	43
	Secondary school	29	74	10	26	44	39	70	61	73	48	80	52
Kidney damage / failure	Graduation	20	43	27	57	51	46	61	54	71	45	88	55
	Secondary school	17	44	22	56	31	27	83	73	48	31	105	69
Vision damage / loss	Graduation	15	32	32	68	44	39	68	61	59	37	100	63
	Secondary school	19	49	20	51	29	25	85	75	48	31	105	69

## DISCUSSION

One of the most important threats to human health is coronary heart disease. A rising trend in the prevalence of Ischemic heart disease further complicates the problem of human health<sup>1</sup>. Hypertension is one of the major modifiable risk factor of atherosclerosis and atherosclerosis is the most common cause of myocardial infarction.

About one fourth population of the world has been suffering from hypertension<sup>2</sup>. A rise in the prevalence of hypertension has been observed in persons with age more than thirty years<sup>8</sup>. Coronary heart disease, cerebrovascular disease and renal failure are dreadful complications of hypertension<sup>9,10,11</sup>.

The prevention and early diagnosis of hypertension will be of vital importance for the reduction of morbidity and mortality associated with the ischemic heart disease, cerebrovascular accidents and nephrosclerosis. Many risk factors have been attributed with the development of

hypertension which include lack of physical activity, sedentary life style, overweight, abdominal obesity, cigarette smoking, alcohol intake, occupation, educational status, mechanization, urbanization, adolescent pregnancy, parity, family history, high intake of sodium, low intake of potassium, stress, diabetes mellitus, sleep apnea, oral contraceptives, gender and increasing age<sup>5,6,7</sup>. Among these risk factors of hypertension, many of them can be easily preventable by healthy diet and lifestyle.

In the present study, a significant majority of adults (male and female) whose level of education is graduation or above have sufficient knowledge regarding the majority of risk factors and complication of hypertension while the people with lesser level of education (secondary school level or below) are deficient in knowledge about the most of the risk factors and complications of hypertension.

A study conducted on Jordanian adults also revealed that educated people have more knowledge about

hypertension<sup>12</sup>. Some studies revealed that the prevalence of hypertension is higher among the less educated persons as compared to educated people<sup>13,14</sup>. Similarly, a published study from china revealed that the knowledge of the risk factor of hypertension like salt intake among the hypertensive patients help in the control of hypertension among these persons<sup>15</sup>. These finding raise the possibility that lack of knowledge about the risk factors may increase the risk of hypertension and this lack of knowledge may be attributed to the lack of education.

One of the important factors for the prevention of hypertension is to increase the awareness level regarding the risk factors of hypertension among the community through social, electronic or print media and addition of some topic related to hypertension in the course curriculum at the school level.

**Conclusion:** Higher level of education in the community is associated with more awareness about the risk factors and complication of hypertension as compared to low level of education.

**Conflict of interest:** Nil

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