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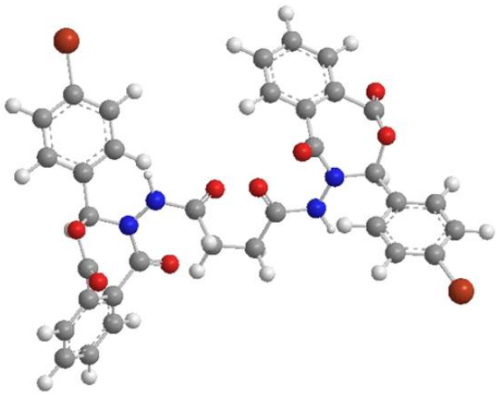

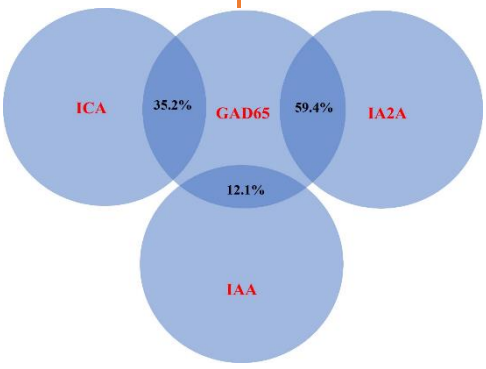

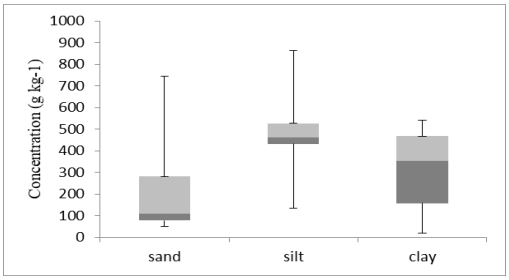

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Awareness regarding hypertension complications among hypertensive patients attending Kalar General Hospital in Sulaimaniyah province of Iraq

Rahman Othman Hussein [1*], Omed Ahmed Muhammed [2]

1 Department of Nursing, Kalar Technical College, Sulaimani Polytechnic University, Iraq
2 Department of Medicine, College of Medicine, University of Garmyan, Iraq
*Corresponding email: rahman.hussein@univsul.edu.iq

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Abstract

Background: Hypertension complications are amongst the principal cause of admission in most healthcare facilities worldwide. Unawareness of hypertension complications increases morbidity and mortality rate. Patients' awareness regarding hypertension and its complications plays an important role in preventing or delaying the relevant events. **Objectives:** To assess the awareness toward hypertension-related complications in patients with hypertension. **Patients and methods:** A quantitative-descriptive cross-sectional study was conducted in Kalar General Hospital in Kalar city from May 2022 to January 2023. About 250 patients with hypertension consented to participate in the study. Non-probability convince sampling method was used to select the participants. The data were collected through a questionnaire by direct interview. **Results:** Most patients were aged between (40-65 years), females, married, housewives, illiterate, and lived in an urban area. The study's findings revealed insufficient awareness in >50% of patients. A highly significant correlation between awareness and the level of education has been founded and also a significant association with age, gender, and profession was found. While marital status and residency didn't affect the awareness. **Conclusions:** More than three quarter of patients were not aware or had inadequate awareness of hypertension complications.

Introduction

Hypertension (HTN) is one of the greatest life-threatening health problems and also the furthermost common chronic non-communicable disease worldwide **[1]**. It is the most significant modifiable risk factor for cardiovascular disease and kidney disease, leading risk factor for mortality **[2]**. Although it is one of the preventable and treatable causes of early death worldwide but still remains a hidden disease in the public **[3]**. The world health organization (WHO) approximates that more than one in three adults, or nearby one billion individuals globally are affected by HTN **[4]**. It is estimated that this number will increase to 1.56 billion people by 2025 **[5].** hypertension among adult population is growing, and its complication accounts for 9.5 million yearly deaths worldwide. Low-income countries have the uppermost prevalence of HTN. A study by the WHO in 2013 discovered that the prevalence of HTN in Iraq was 40% **[6].**

Hypertension complications are amongst the leading cause of admission in most health care facilities globally. There has been an increasing rate of HTN and its complications which has resulted in significant morbidity and mortality **[7]**. Study have revealed that the ratio of unawareness, untreated, and even uncontrolled HTN is significantly high **[8]**.

Uncontrolled HTN is common between hypertensive patients which can cause to numerous serious and life-threatening complications including cardiovascular diseases, stroke, chronic kidney disease, and retinopathy **[9].** Considering complications of HTN. it seems that some factors and barriers are related with controlling this disease. The most significant barrier to control this disorder is the deficiency of knowledge and awareness about several aspects of HTN and its complications **[10]**.

Patients' awareness regarding HTN and its complications plays an important role in controlling blood pressure and preventing or delaying the related complications **[11].** Hypertension complications can be minimised by modification of lifestyle-related risk factors and generating awareness regarding the risk factors and complications **[12].** In addition improving hypertension awareness among hypertensive patients is a crucial first step to reduce morbidity and mortality as a result of HTN complications **[5]**.

Consequently, the present study is aimed to find the level of awareness among hypertensive patients regarding HTN complications and its association with sociodemographic characteristics.

Materials and Methods

Study design and setting

A quantitative-descriptive cross-sectional design was conducted on hypertensive patients attending Kalar general hospital in Kalar city from May 2022 to January 2023.

Ethical consideration

This study proposal was revised, corrected, and accepted by the Scientific Committee at the College of Nursing and Ethics Committee at the College of Medicine, University of Sulaimani, Sulaymaniyah, Iraq.

Patient consent

Patient's consent was attained before starting the data collection, and all parts of the study were explained properly to the participants. Additionally, patients were free to leave the study at any time they desired, while the patient (s') data was kept confidential.

Study sample

A non-probability, convenience sampling technique was used to include (250) patients with established hypertension.

Inclusion criteria

Adult patients diagnosed with primary hypertension were involved in the present study.

Exclusion criteria

Patients with secondary hypertension and patients with severe physical and mental problems were excluded from the present study.

Study instrument

To achieve the objectives of the study, the researcher developed a questionnaire through an extensive review of the international literature and guidelines. The questionnaires filled out by researcher. The questionnaire is a proper and more convenient technique for data collection. The questionnaires of two parts. Part one contains 6 items including patients' sociodemographic characteristics such as age, gender, marital status, level of education, occupation, and residency. While part two consists of 7 items to identify the level of awareness of hypertensive patients regarding HTN complications such as heart attack, stroke, aneurysm, narrowing blood vessels of the kidney, retinal blood vessel stenosis, metabolic syndrome, and memory problems.

Statistical analysis

The obtained data were analyzed through the Social Package of Social Science SPSS (version 22.0) . Descriptive statistics; frequency, percentage, mean and standard deviation were performed to find the profile of the participant's demographic characteristics. Inferential statistics (fisher-exact test) were used to find the association between overall awareness and patients' characteristics. The P-value is considered significant at the level of ≤ 0.05.

Rating and scoring

As well as scoring scales of two categories for level awareness, such that (know, and don't know), are responding with integer numbers (1, and 0) respectively. Reassessment scoring scales for scale dichotomous random variable, and scoring scales according to the following intervals: L (Low) 0.00 – 33.33; M (Moderate) 33.33 – 66.66; H (High) 66.66 – 100.

Results

Half of patients were aged between (40-64) years old (49.2%), with a mean age of (54.52 ± 14.71), greater than half of the patients were females (57.2%), majority were married (71.6%) and lived in the urban area (60.0%). The illiterate proportion was (41.2%) and (28.0%) were housewives (Table 1).

Table 1: Distribution of hypertensive patients to socio-demographic characteristics.

Socio-demographic characteristics		Frequency (F)	Percentage (%)
Age	< 39 years	48	19.2
	40-64 years	123	49.2
	≥ 65 years	79	31.6
Mean ±SD 54.52 ± 14.71			
Gender	Male	107	42.8
	Female	143	57.2
Marital status	Single	18	7.2
	Married	179	71.6
	Divorced	15	6.0
	Widowed	38	15.2
Education level	Illiterate	103	41.2
	Primary school	39	15.6
	Secondary school	41	16.4
	College and above	67	26.8
Occupation	Labor	16	6.4
	Businessman	6	2.4
	Governmental employee	69	27.6
	Private employee	28	11.2
	Housewife	70	28.0
	Retired	39	15.6
	Other	22	8.8
Residency	Urban	150	60.0
	Rural	100	40.0
Total		**250**	**100**

Regarding the effect level of awareness of patients toward HTN related complications. the result showed that items of (heart attack, stroke, retinopathy and memory prblems) indicates moderate effect of awareness and the items of (aneurysm, nephropathy and metabolic syndrome) considered a low effect of awareness. Since the total mean and standard deviation of the awareness (2.21 ± 1.79) (Table 2)

Table 2: Distribution of awareness about complications of hypertension in the study sample.

Variable	I know		I don't know		Mean of score	Level effect
	F	%	F	%		
Heart attack is a complication of HTN	95	38.0	155	62.0	**0.62**	**Moderate effect**
Stroke is a complication of HTN.	105	42.0	145	58.0	**0.42**	**Moderate effect**
Aneurysm is a complication of HTN	21	8.4	229	91.6	**0.08**	**Low effect**
Narrowed blood vessels in kidney is a complication of HTN	46	18.4	204	81.6	**0.18**	**Low effect**
Narrowed blood vessels in eye is a complication of HTN	86	34.4	164	65.6	**0.34**	**Moderate effect**
Metabolic syndrome is a complication of HTN	58	23.2	192	76.8	**0.23**	**Low effect**
Trouble with memory or understanding is a complication of HTN.	85	34.0	165	66.0	**0.34**	**Moderate effect**
Total Mean± SD					**2.21 ± 1.79**	

Table 3 shows the overall awareness. Most of the participants were not aware (78 %), while (16 %) were moderately aware, and (6 %) were aware of HTN complications.

Table 3: Overall awareness about complications of hypertension.

Overall awareness	N=250	
	F	%
Not aware	195	78.0
Moderately aware	40	16.0
Aware	15	6.0

Table 4 illustrates highly significant associations between overall awareness and level of education (p=0.000). Also, a significant association between overall awareness and age (p=0.026), gender (p=0.001), and occupation (p=0.006) was observed. There was no significant association between overall awareness and marital status (p=0.090) and residency (p=0.070), respectively.

Discussion

Results of the sociodemographic variables discovered that most of the study patients with hypertension were aged between (40-64) years old, females, Married, illiterate, housewives, and living in the urban area.

Regarding the effect level of awareness of patients toward HTN-related complications. the result showed that items of (heart attack, stroke, retinopathy, and memory problems) indicate a moderate effect of awareness, and the items of (aneurysm, nephropathy and metabolic syndrome) are considered a low effect of awareness. While the respondents didn't have a high effect of awareness subsequent to the items which represent patients` awareness about HTN complications. Therefore, it means the majority of the participants have a deficient level of awareness of HTN complications. This outcome is in line with another study **[7]** which shows that the level of awareness of the study subjects on risk factors, complications, and preventive events of HTN was initiated to be deficient. In contrast, another study **[13]** reported that greater than half of the participants had sufficient knowledge concerning the risk factors and complications of HTN. The low level of awareness of HTN is a universal phenomenon **[14]**. Likewise, 2/5 of the participants level of education were illiterate. Then the overall poor level of education may partly clarify the low level of awareness in this population.

Table 4: Association between sociodemographic characteristics and overall awareness.

Variable	N=250						Total	
	Not aware		Aware		Very Aware			
	F	%	F	%	F	%	F	%
Age								
< 39 years	34	70.8	8	16.7	6	12.5	48	19.2
40-64 years	95	77.2	25	20.3	3	2.4	123	49.2
≥ 65 years	66	83.5	7	8.9	6	7.6	79	31.6
P. value 0.026	**Significant**			**x^2= 10.919**		**df=4**		
Gender								
Male	76	71.0	27	25.2	4	3.7	107	42.8
Female	119	83.2	13	9.1	11	7.7	143	57.2
P. value 0.001	**Significant**			**x^2= 13.704**		**df=2**		
Marital Status								
Single	10	55.6	5	27.8	3	16.7	18	7.2
Married	145	79.3	29	16.2	8	4.5	179	71.6
Divorced	2	80.0	3	20.0	0	0	15	6.0
Widowed	31	81.6	3	7.9	4	10.5	38	15.2
P. value 0.090	**Not Significant**			**x^2= 10.858**		**df=6**		
Education level								
Illiterate	96	93.2	7	6.8	0	0	103	41.2
Primary school	29	74.4	8	20.5	2	5.1	39	15.6
Secondary school	30	73.2	8	19.5	3	7.3	41	16.4
College and above	40	59.7	17	25.4	10	14.9	67	26.8
P. value 0.000	**Highly significant**			**x^2=31.306**		**df=6**		
Occupation								
Labor	14	87.5	2	12.5	0	0	16	6.4
Businessman	5	83.3	1	16.7	0	0	6	2.4
Governmental employee	45	65.2	16	23.2	8	11.6	69	27.6
Private employee	19	67.9	5	17.9	4	14.3	28	11.2
Housewife	65	92.9	3	4.3	2	2.9	70	28.0
Retired	32	82.1	6	15.4	1	2.6	39	15.6
Other	15	68.2	7	31.8	0	0	22	8.8
P. value 0.006	**Significant**			**FET=27.585**		**df=12**		
Residency								
Urban	113	75.3	30	20.0	7	4.7	150	60.0
Rural	82	82.0	10	10.0	8	8.0	100	40.0
P. value 0.070	**Not significant**			**x^2=5.203**		**df=2**		

Based on the overall awareness of HTN complications. Furthermost of the participants were not aware of HTN complications. This result is consistent with the study **[15]** which initiate that more than half of the patients had not been aware of HTN-related complications. Similarly, the result corroborates the finding of another study **[16]** that mentioned poor knowledge of HTN-related complications.

Our finding demonstrates highly significant associations between patients' awareness of HTN complications and level of education. This is in line with another study **[17]** which reported that educational level was the only factor linked with awareness of hypertensive patients regarding the prevention of HTN complications. Similarly, the result goes in line with another study **[18]** which reveals that the educational level of participants was significantly associated with knowledge score about HTN-associated aspects.

Moreover, consequences discovered significant correlations between patients' awareness of HTN complications and age, gender, and occupation. This outcome is supported by another study **[19]** who showed a significant correlation between age and patients' awareness of HTN. Furthermore, **[20]** showed significant associations between the knowledge, and occupation of the respondents respectively. Likewise, another study **[21]** exposes a significant association between employment and patient awareness of HTN. Although, the result agreed with a cross-sectional study **[5]** who revealed a significant association between the gender of respondents with awareness of complications of HTN.

Furthermore, results showed no significant association between patients' awareness of HTN complications with patients' marital status and residency. This outcome corresponds with another study **[7]** which patients' awareness of HTN and its complications were unaffected by marital status. While, another study **[22]** described that the place of residence (urban versus rural) did not influence awareness of HTN.

Conclusions

The present study concluded that most of the study patients with HTN were middle aged. Female, married, illiterate and housewives who lived in an urban area. Majority of the respondents had insufficient awareness about HTN-related complications. Present study conclude that patients` awareness has a significant correlation with the level of education and a significant association with patients` age, gender, and occupation. While marital status and residency didn't affect the awareness of patients about HTN complications. These findings have significant implications for developing an appropriate and continuous education program for controlling HTN and reducing the incidence of HTN related complications.

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Conflict of interest

The authors confirm that they are not affiliated with or involved in any organization or entity with financial interests.

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