

# **Assessment of Knowledge of Health-Related Quality of Life among Hypertensive Patients Attending Primary Health Care Centers in Makkah- Al Mokarramah, Saudi Arabia 2021**

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## **Abstract**

### **Introduction**

Hypertension is one of the serious common worldwide diseases. It is considered a leading cause to the cardiovascular diseases. Poorly controlled hypertension is a significant public health concern all over the world. Awareness and knowledge about it are important factors in determining control. Hypertension is associated with high morbidity that affects the quality of life ranging from complication from the disease itself or its treatment. The high burden of the disease imposed a load on health care professional to identify risk factors associated with patients' low quality of life and addresses them through different awareness campaigns. Inadequate health literacy is associated with worse health outcomes and carries high financial burden on both patients and healthcare system. There is insufficient data about health literacy among the hypertensive patients in Saudi Arabia. The 2014 global status report of non-communicable diseases published by the World Health Organization (WHO) showed that the

prevalence of raised blood pressure in Saudi Arabia was approximately 26.6% among adults aged 18 and older.

**Aim of the study :** To assessment Quality of Life among Hypertensive Patients Visiting the Primary Health Care Centers in Makkah- Al Mokarramah, Saudi Arabia in 2021

**Methods:** A cross-sectional study was conducted to examine the study objectives. Convenience sampling was used to recruit patients with hypertension who visited primary healthcare centers in Makkah- Al Mokarramah, 2021.

**Results :** shows that most of the participants (41.0%) were in the age group >50 years follow by the (37.0%) were in the age(25-50) years, also regarding Marital status the majority of participant are married were(56.0%) while single were(20.0%). Regarding the smoking the majority of participant Non-smoker were(88.0%). While smoker were (12.0%) . Regarding the HYN duration the majority of participant duration from 5-10. were(45.0%). Regarding level of education the majority of participant are Secondary education were(34.0%) while Postgraduate education were(25.0%). Regarding the occupation the majority of participant working were (61.0%) follow by overweight were(30.0%).

**Conclusion:** Improve service quality and increase clinics responsible for providing hypertensive patients with health information. Also, design different levels of educational program and campaign need to fit with all people in the community to raise the awareness. hypertensive patients in Saudi Arabia have moderately high scores in all domains of Related Quality of Life .

**Key words:** Assessment, knowledge, Health Related Quality, Hypertensive, Patients, PHC.

## Introduction:

Chronic diseases are an important public health problem and contribute about 71% of mortality worldwide [1]. In the Kingdom of Saudi Arabia, a large proportion of morbidity and mortality is attributed to chronic illnesses or long-term conditions. Hypertension is a global issue because it is one of the main preventable causes of morbidity and mortality. Hypertension is an illness that has a major effect on communities' health, and it is widely prevalent in the Arab Gulf region, the Middle East, and the world. It is anticipated to affect around 1.56 billion people worldwide in 2025 [2]

Chronic diseases are common, and about 50% of primary care appointments with a physician are due to chronic conditions. It is, therefore, necessary to evaluate the level of adherence to the drugs. This can help improve individuals' compliance with their medications and prevent long-term negative outcomes and attain a better quality of life [3].

People suffering from long-term conditions receive therapy for a protracted period of time. Quality of life has become an essential measure of results to evaluate the efficiency of the management plan of any illness. Drug therapy alongside with lifestyle adjustments remain the effective control of hypertension, so compliance with the drug is the main factor contributing to attaining the desired clinical result. Non-compliance with antihypertensive drugs is the main cause of poor control of high blood pressure [4,5]

Hypertension is one of the most prevalent diseases worldwide with significant morbidity and mortality. It is called silent killer because of its well-known morbidities that eventually leads to high mortality rate[6]. The prevalence of hypertension varies from country to country and within the same country from area to area . This is dependent upon the risk factors

associated with the development of the disease. In a review that assessed the prevalence of hypertension worldwide found that India especially the rural areas had the least prevalence in the world reported as 3 per 100 men. Meanwhile, the highest prevalence was in Poland with prevalence up to 68.9% [7]. In Saudi Arabia, it was found that the prevalence of hypertension in southwestern areas was 11.1%; it was found to be more in females than males unlike the worldwide proportions. It was also found that 76% of patients received treatment, however, only 20% were controlled which is considered a very low percent [8].

Studies have shown that adherence rates are typically higher among patients with acute illness compared to those with chronic illnesses [10]. Patients with chronic disorders, particularly asymptomatic conditions, such as hypertension and hypercholesterolemia, are more likely to be non-compliant [11]. Factors that contribute significantly to compliance with medication include lack of knowledge about high blood pressure and its therapy, poor awareness about the importance of adherence, and complex medication regimens [12,13]. The consequences of medication non-adherence may not only be dangerous for patient's health but also dramatically increase the financial costs of public health services and it associated with an increase in hospital admissions [14].

## Literature Review

At 2015, Burnier et al. conducted a cross-sectional descriptive study on 72 hypertensive patients in Arar, Kingdom of Saudi Arabia to assess their knowledge and awareness about their disease, drug, and compliance in 2 major hospitals. Data were collected using an interviewer-administered questionnaire, based on Hypertension Knowledge Level Scale (HK-LS). The male patients were (53%), and (47%) were female. However, patients who had a job were (55.6%) but those who were unemployed (41.6%). Also, (80%) of patients were over 50 years of age, (43%) with no formal education, (27%) with 1-8 years of formal education and (29%) with more than nine years of formal educations.[15]

About (50%) of patients could define the disease, awareness of HTN complication ranged between (74%-86%). In addition to that, awareness about medical treatment were (68%-86%) and about the importance of drug compliance were (60%-72%). The researcher used the chi-squared test for nominal variables to assess correlations. There was a significant correlation ( $p < 0.05$ ) with age and education. On the hand, there was no correlation between gender or job status and awareness of the disease.(16)

Yang et al, 2019. Reported that education has a positive and direct effect on prior knowledge and health literacy [17]. One research study showed that men had limited health literacy. However, the authors explained that as result of the men who participated in their study had low education.[18]

Many studies showed that there is association between bad lifestyle, low level of health literacy and low control of hypertension [14,19].

At 2013, Mitwalli et al. conducted a cross-sectional survey among health professionals including, medical students, interns and residents. The researcher distributed a self-administered questionnaire using (KAP) knowledge, attitude and practice. This study took place in two tertiary hospitals in Riyadh, KSA to estimate awareness, attitudes, and distribution of blood pressure among them. The total population was 672, as numbers of males and females were 224 (67%) and 448 (33%) respectively. Univariate analysis, logistic

regression, a forward stepwise regression method, odds ratio and 95% CI were applied. The prevalence of hypertension among them was (28%). The mean age of all participants was  $36 \pm 13.9$  years. Among hypertensive patients, those aware of the disease constituted (61%), but (11%) were newly discovered to have HTN from the total study population. About HTN group, (70%) were aware of BP treatment goal, (54%) knew about risk factors for uncontrolled HTN, (56%) were mindful of the fact that low BP would decrease the cardiovascular and renal disease, (88%) with BP controlled, and (90%) took their drug regularly. Of the later, (12%) does not adhere to their medications and (2%) did stop it. The most common risk factors were stress at work (44%) and lack of exercise (36%) out of total participants. The prevalence of HTN increased with age among males and females. This study showed that younger participants from hypertensive patients with age less than 30 years were less aware of having the disease. The females were aware than males with OR= 1.89. The researchers concluded that lack of awareness is a big problem, which increases chances of cardiovascular and renal complication. [20]

The above study was a cross-sectional study done in 2 hospitals in Riyadh on health professionals while the current study is a case-control in PHCC at Makkah Al-Mokarramah among registered hypertensive and non-hypertensive patients including male and female. They studied the awareness, attitude and distribution of BP but the objectives of the current study and the methods are not the same.

Poor hypertension management has many multifaceted causes including obesity [21], medical adherence [22], and poor dietary and other lifestyle habits management [23]. According to previous systematic reviews, individuals' health literacy is one of the contributing factors in controlling hypertension [24]. Health literate patients seem to have better control of their hypertension [14–20] knowledge of hypertension [21,22] and sodium restriction [19,22].

At 2011, Saeed et al. conducted a cross-sectional community-based study in whole Kingdom of Saudi Arabia including 20 health regions with locally trained teams. The objectives were to estimate the prevalence, awareness, treatment, control, and predictors of hypertension among Saudi adult population. The researcher used WHO STEPwise approach which consisted of a questionnaire, physical measurements, biochemical measurements of hypertension and additional chronic diseases and risk factors. A multistage stratified cluster random sampling was used, the stratification based on age, gender and health regions. The total number of participants was 4758 adults. (10%) Of PHCC were chosen from these areas, then the researcher did a map for PHC to reach the houses which were numbered after-then randomly selected. The overall prevalence of hypertension was (25.5%) of whom (52%) were male, but only (9%) of them were controlled. The females constituted (48%) and only (15%) of them were controlled. Among all hypertensive patients, (45%) patients knew that they had the disease and about (72%) of them taking drug treatment, but only (37%) of them were controlled. However, (55%) were not aware of the disease and discovered on screening. There was a statistically significant correlation ( $P < 0.001$ ) between hypertension and each of the gender, age, region, educational level, occupation, physical activity and BMI. The prevalence of HTN in males was higher than in females and increasing with age. Awareness of HTN was high in females, old patients, Eastern area population, housekeepers, diabetics and those with high physical activity. The control was high among younger patients (75%),

while older patients (88%) were taking more drugs. Significant predictors of hypertension (multiple and logistic regression analysis) involved male gender, urbanization, low education, low physical activity, obesity, diabetes mellitus, and dyslipidemia. The researchers concluded that the prevalence of HTN was high but awareness, control and treatment were low. (25)

### **Rational :**

With the changes in major lifestyles, the prevalence of hypertensive among patients is increasing, therefore, this issue implicated to risk the hypertensive patients. Health related quality of life is one of the new emerging studies worldwide, and as it is related to empower the chronic disease patients by improving their quality of life and decrease their health burden. The researcher has a special interest in hypertensive patients and its related risk, particularly in hypertensive patients. Up to the researcher's knowledge, no published studies were conducted in Holy Capital of Makkah defined the Knowledge about the hypertensive patients among patients with Visiting the Primary Health Care Centers Makkah City.

### **Aim of the study:**

To assessment Quality of Life among hypertensive Patients Visiting the Primary Health Care Centers in Makkah- Al Mokarramah, Saudi Arabia in 2021.

### **Objective :**

To assess the quality of life in female hypertensive patients .

To determine the socio-demographic characters of the study group and to study their effect on the quality of life among them .

### **Methodology:**

#### **Study design:**

This study is cross-sectional study was conducted among 400 of the hypertensive among Patients, has been applying a convenience sampling technique

### **Study Area**

The study has been carried out in the city of Makkah Al-Mokarramah Makkah is the holiest spot on Earth. It is the birthplace of the Prophet Mohammad and the principal place of the pilgrims to perform Umrah and Hajj. It is located in the western area in Kingdom of Saudi Arabia and called the Holy Capital. Contains a population around 2 million. This study was conducted at Visiting the Primary Health Care Centers in Makkah- Al Mokarramah, Saudi Arabia in 2021. During the April to June, 2021, participants on Visiting the Primary Health Care Centers in Makkah- Al Mokarramah, Saudi Arabia in 2021, it reflects a diversified demographic profile with a considerable portion of the population comes from rural descent, while others come from an urban one. This difference translates into biological, socioeconomic and lifestyle differences in the Makkah population.

### **Study Population**

The study has been conducted regarding the hypertensive Patients with Visiting the Primary Health Care Centers in Makkah, Saudi Arabia in 2021 During the April to June, 2021.

### **Selection criteria:**

#### **Inclusion criteria**

Adult patients .  
Diagnosis of hypertension .  
Attending Primary Health Care Centers in Makkah.  
Resident in Makkah province.  
Sound cognitive abilities  
All nationalities  
Both males and females.

#### **Exclusion criteria :**

Pediatric patients .  
Patients with severe cognitive impairment such as dementia or delirium .  
Patients unwilling to give written consent to participate.  
Severely ill patients such as patients with malignancy  
Pregnancy  
Patient without established diagnosis with hypertension

### **Sample size:**

The total population of hypertensive patients 20000 (Sample size calculated by using Epi info-2000 software) . The calculation is based on 50% response distribution. 5% margin of error and 95% confident interval. The assumption that the response rate is 50% . The calculated sample size was 37.2 to ensure accuracy , the sample size will be increased to 300 to account for any missing data or non-response rate .

**Sampling technique:** Systematic random sampling technique is adopted. After that, by using random number generator, then simple random sampling technique has been applied to select the PHC. Also, convenience sampling technique will be utilized to select the participants in the study. By using systematic sampling random as dividing the total patients by the required sample size; (400 ).

### **Data collection tool**

An Arabic version of the questionnaire was used after obtaining prior permission from the Euro WHOQOL Research Foundation the questionnaire was distributed to the participants fill a questionnaire consisting of two sections: one for socio demographic data

(name, age , gender , marital status , education level , Number of children , occupation, income-),smoking, physical activity, clinical data (for cases) including: i) duration of the illness, ii) number and types of the used antihypertensive drugs, number of daily doses, and

compliance, iii) symptoms, iv) comorbidities as diabetes mellitus, renal disease, cardiac disease, stroke .

The second section included HRQOL assessment questions using Arabic version of WHOQOL questionnaire. This is 26 items self-administered generic questioners, developed by WHO as a short form of WHOQOL-100. The WHOQOL-BREF is one of the most commonly used generic QOL questioners which were developed simultaneously across abroad range of member countries. The instrument can capture broadly and totally all aspects of QOL

Including: physical health (extent to which health limits physical activity)

psychological (general mental health, including anxiety and depression), energy/vitality (feeling energetic), bodily pain (intensity of pain and effect of pain on normal work, both inside or outside the home

social relationship (extent to which physical or mental health interferes with normal social activities)

Environment. It is composed of four domains: physical health (7 items), psychological health (6 items), social relation-ship (3 items) and environmental health (8 items) and overall QOL and general health items. The interpretation and calculation of mean scores were based on the guide provided by WHO. The mean scores ranged from 0 to 20 as the highest quality of life. Blood pressure was measured using mercury sphygmomanometer in the right arm.

### **Data Collection technique**

The researcher has be used Arabic version of the questionnaire since the target population are Saudi middle age . The questionnaire has be distributed to all patients attending primary health care center during the data collection period The questionnaire was distributed equally between male and female section because it is separate departments. The researcher has be train 2 nurses on how to fulfill the questionnaire in order to optimize the interpreter reliability. The researcher has be distribute the questionnaire in the waiting area in male while in female section, has be trained nurse was be distribute the questionnaire in female waiting area. After that, the researcher was being collected the paper daily from the nurse for data entry and analysis after thanking the participants for their precious time and effort. The services: the researcher has been providing the participants with a simple gift as an appreciation for their participation in the study, after collecting questionnaire from them.

### **Statistical analysis**

Descriptive statistics to summarize patients' characteristics were presented in the form of mean and standard deviation for continuous variables while categorical variables were presented in the form of frequency and percentage. Chi2 test (or Fisher's test, as appropriate) was used to compare between categorical variables, while Student's t-test (or Mann-Whitney test, as appropriate) was used to compare between the continuous variables. Pearson correlation was used to present the correlation between any numeric variables and domains of questionnaire. A multivariate backward linear regression analysis was conducted to assess the influence of age, blood pressure, drugs and any comorbidity on each domain scores. All analyses were two-sided considering P-value <0.05 as statistically significant and were conducted by using SPSS.

### Pilot study/pretesting

A pilot study on 60 participants representing 20% of study sample size (out of study area) has been conducted to explore applicability, acceptance and obstacles and plan to overcome these problems.

### Ethical consideration

Permission from the Makkah joint program of family medicine has been obtained.

Permission from the Directorate of Health Affairs of the Holy Capital Primary Health Care has been obtained.

Permission from administration of public health in Makkah Al-Mukarramah has been obtained.

Written consents from all participants have been obtained.

All information will be confidential, and a result has been submitted to the department.

**Budget:** The research has been self-budgeted.

### Results

**Table 1 Distribution of demographic data (age, gender, social, Smoking, HYN duration, Occupation) in our study (n=400)**

level	N	%
<b>Age</b>		
<25	88	22
25-50	148	37
>50	164	41
<b>Marital state (%)</b>		
Married	224	56
Single	80	20
Divorced	52	13
Widowed	44	11
<b>Smoking (%)</b>		
Non-smoker	352	88
Smoker	48	12
<b>HYN duration (%)</b>		
<3	44	11
3-5.	100	25
5-10.	180	45
>10	76	19
<b>Level of education</b>		
Less than secondary	76	19
Secondary	136	34
University	88	22



Postgraduate	100	25
<b>Occupation</b>		
Working	244	61
Not working	156	39

Table 1 shows that most of the participants (41.0%) were in the age group >50 years follow by the (37.0%) were in the age(25-50) years, also regarding Marital status the majority of participant are married were(56.0%) while single were(20.0%). Regarding the smoking the majority of participant Non-smoker were(88.0%). While smoker were (12.0%) . Regarding the HYN duration the majority of participant duration from 5-10. were(45.0%). Regarding level of education the majority of participant are Secondary education were(34.0%) while Postgraduate education were(25.0%). Regarding the occupation the majority of participant working were (61.0%) follow by overweight were(30.0%).

**Table 2. Distribution of the medical characteristics of participants**

	N	%
<b>Compliance on medication</b>	300	75
<b>BB control</b>	260	65
<b>ACEIs/ARBs</b>	248	62
<b>CCBs</b>	180	45
<b>Diabetic</b>	168	42
<b>BBs</b>	120	30
<b>Vision problem</b>	64	16
<b>Heart disease</b>	52	13
<b>Diuretics</b>	48	12
<b>Kidney disease</b>	36	9
<b>Stroke</b>	12	3
<b>Alpha-blocker</b>	8	2

Regarding the characteristics of participants the most of participants in Compliance on medication were (75.0%) followed by BB control were (65.0%) but patients received ACEIs/ARBs (n =248 were 62.0%) followed by calcium channel blockers CCBs (n = 180 were 45.0%), diabetes mellitus (n = 168 were 42.0%), Co-morbidities included kidney diseases (n = 36 were 9.0%), heart diseases (n = 52 were 13.0%), stroke (n = 12 were 3.0%) and vision problems (n = 64 were 16.0%).

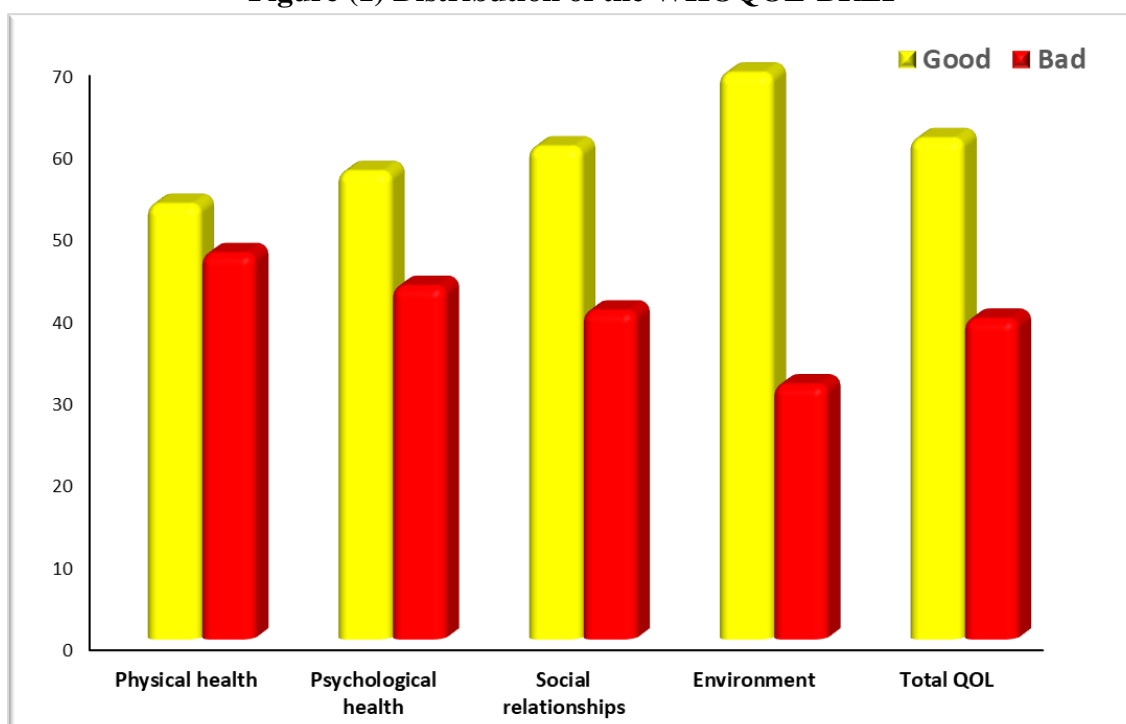
**Table 3 . Distribution of the WHOQOL-BREF**

	Score		Good		Bad	
	Mean	SD	N	%	N	%
<b>Physical health</b>	11.624	1.987	280	70	120	30
<b>Psychological health</b>	14.058	2.178	228	57	172	43
<b>Social relationships</b>	14.639	2.643	308	77	92	23
<b>Environment</b>	13.287	2.049	276	69	124	31
<b>Total QOL</b>	53.155	10.212	292	73	108	27

### Distribution of the domains of the WHOQOL-BREF

After calculating the total score for each domain based on the WHO guidelines. We found that regarding the patients had good score were 70.0% for physical health followed by Bad were 30.0% and mean were 11.624 while SD 1.987. Regarding the Psychological health the patients had good score were 57% followed by Bad were 43.0% and mean were 14.058 % while SD 2.178%. Regarding the Social relationships the patients had good score were 77% followed by Bad were 23.0% and mean were 14.639% while SD 2.643% . Also regarding the Environment the had good score were 69.0% followed by Bad were 31.0% and mean were 13.287 % while SD 2.049 %, but the total QOL the had good score were 73.0% followed by Bad were 27.0% and mean were 53.155 % while SD 10.212%.

**Figure (1) Distribution of the WHOQOL-BREF**



**Table 3 Distribution the relation between Physical health and patients' socio-demographic**

		Physical health				Chi-square	
		Bad		Good		X <sup>2</sup>	P-value
		N	%	N	%		
Age	<25	60	50.00	28	10.00	86.471	<0.001*
	25-50	40	33.33	108	38.57		
	>50	20	16.67	144	51.43		
Marital state (%)	Married	33	27.50	191	68.21	89.779	<0.001*
	Single	24	20.00	56	20.00		
	Divorced	40	33.33	12	4.29		
	Widowed	23	19.17	21	7.50		
Smoking (%)	Non-smoker	80	66.67	272	97.14	73.882	<0.001*
	Smoker	40	33.33	8	2.86		
Level of education	Less than secondary	32	26.67	44	15.71	46.068	<0.001*
	Secondary	12	10.00	124	44.29		
	University	40	33.33	48	17.14		
	Postgraduate	36	30.00	64	22.86		
Occupation	Working	99	82.50	145	51.79	33.309	<0.001*
	Not working	21	17.50	135	48.21		
HYN duration (%)	<3	37	30.83	7	2.50	116.040	<0.001*
	3-5.	50	41.67	50	17.86		
	5-10.	23	19.17	157	56.07		
	>10	10	8.33	66	23.57		

Table 3 show regarding age, results show a significant relation between Physical health and age were X<sup>2</sup> (86.471) and P-value=0.001, increase in Bad <25 years were 50.0% while in good were 51.43% in age >50, regarding marital state, results show a significant relation between Physical health and marital state were X<sup>2</sup> (89.779) and P-value=0.001, increase in Bad in divorced were 33.33% while in good were 68.21% in married, regarding Smoking, results show a significant relation between Physical health and Smoking were X<sup>2</sup> (73.882) and P-value=0.001, increase in Bad in Non-smoker were 66.67% while in good were 97.14% in Non-smoker. Regarding Level of education, results show a significant relation between Physical health and Level of education were X<sup>2</sup> (46.068) and P-value=0.001, increase in Bad in University were 33.33% while in good were 44.29% in Secondary. Regarding Occupation, results show a significant relation between Physical health and Occupation were X<sup>2</sup> (33.309) and P-value=0.001, increase in Bad in Working were 82.50% while in good were 48.21% in Not working. Regarding HYN duration, results show a significant relation between Physical health and HYN duration were X<sup>2</sup> (116.040) and P-value=0.001, increase in Bad in 3-5 were 41.67% while in good were 56.07% in 5-10.

**Table 4 Distribution the relation between Psychological health and patients' socio-demographic .**

		Psychological health				Chi-square	
		Bad		Good		X <sup>2</sup>	P-value
		N	%	N	%		
<b>Age</b>	<b>&lt;25</b>	32	18.60	56	24.56	30.769	<0.001 *
	<b>25-50</b>	43	25.00	105	46.05		
	<b>&gt;50</b>	97	56.40	67	29.39		
<b>Marital state (%)</b>	<b>Married</b>	92	53.49	132	57.89	44.281	<0.001 *
	<b>Single</b>	15	8.72	65	28.51		
	<b>Divorced</b>	33	19.19	19	8.33		
	<b>Widowed</b>	32	18.60	12	5.26		
<b>Smoking (%)</b>	<b>Non-smoker</b>	145	84.30	207	90.79	3.907	0.048*
	<b>Smoker</b>	27	15.70	21	9.21		
<b>Level of education</b>	<b>Less than secondary</b>	63	36.63	13	5.70	102.22 8	<0.001 *
	<b>Secondary</b>	33	19.19	103	45.18		
	<b>University</b>	55	31.98	33	14.47		
	<b>Postgraduate</b>	21	12.21	79	34.65		
<b>Occupation</b>	<b>Working</b>	152	88.37	92	40.35	95.033	<0.001 *
	<b>Not working</b>	20	11.63	136	59.65		
<b>HYN duration (%)</b>	<b>&lt;3</b>	15	8.72	29	12.72	59.888	<0.001 *
	<b>3-5.</b>	75	43.60	25	10.96		
	<b>5-10.</b>	65	37.79	115	50.44		
	<b>&gt;10</b>	17	9.88	59	25.88		

Table 4 show regarding age, results show a significant relation between Psychological health and age were X<sup>2</sup> (30.769) and P-value=0.001, increase in Bad >50 years were 56.40% while in good were 46.05% in age 25-50, regarding marital state, results show a significant relation between Psychological health and marital state were X<sup>2</sup> (44.281) and P-value=0.001, increase in Bad in Married were 53.49% while in good were 57.89% in married, regarding Smoking, results show a significant relation between Psychological health and Smoking were X<sup>2</sup> (3.907) and P-value=0.048, increase in Bad in Non-smoker were 84.30% while in good were 90.79% in Non-smoker. Regarding Level of education, results show a significant relation between Psychological health and Level of education were X<sup>2</sup> (102.228) and P-value=0.001, increase in Bad in Less than secondary were 36.63% while in good were 45.18% in Secondary. Regarding Occupation, results show a significant relation between Psychological health and Occupation were X<sup>2</sup> (95.033) and P-value=0.001, increase in Bad in Working were 88.37% while in good were 59.65% in Not working. Regarding HYN duration, results show a significant relation between Psychological health and HYN duration were X<sup>2</sup> (59.888) and P-value=0.001, increase in Bad in 3-5 were 43.60% while in good were 50.44% in 5-10.

**Table 5 Distribution the relation between Social relationships and patients' socio-demographic .**

		Social relationships				Chi-square	
		Bad		Good		X <sup>2</sup>	P-value
		N	%	N	%		
Age	<25	53	57.61	35	11.36	91.353	<0.001*
	25-50	25	27.17	123	39.94		
	>50	14	15.22	150	48.70		
Marital state (%)	Married	55	59.78	169	54.87	5.680	0.128
	Single	23	25.00	57	18.51		
	Divorced	8	8.70	44	14.29		
	Widowed	6	6.52	38	12.34		
Smoking (%)	Non-smoker	51	55.43	301	97.73	119.989	<0.001*
	Smoker	41	44.57	7	2.27		
Level of education	Less than secondary	23	25.00	53	17.21	4.337	0.227
	Secondary	31	33.70	105	34.09		
	University	21	22.83	67	21.75		
	Postgraduate	17	18.48	83	26.95		
Occupation	Working	81	88.04	163	52.92	36.731	<0.001*
	Not working	11	11.96	145	47.08		
HYN duration (%)	<3	12	13.04	32	10.39	47.478	<0.001*
	3-5.	23	25.00	77	25.00		
	5-10.	19	20.65	161	52.27		
	>10	38	41.30	38	12.34		

Table 5 show Regarding age, results show a significant relation between Social relationships and age were X<sup>2</sup> (91.353) and P-value=0.001, increase in Bad <25 years were 57.61% while in good were 48.70% in age 25-50, regarding marital state, results show no significant relation between Social relationships and marital state were X<sup>2</sup> (5.680) and P-value=0.128, increase in Bad in Married were 59.78% while in good were 54.87% in married, regarding Smoking, results show a significant relation between Social relationships and Smoking were X<sup>2</sup> (119.989) and P-value=0.001, increase in Bad in Non-smoker were 54.87% while in good were 97.73% in Non-smoker. Regarding Level of education, results show no significant relation between Social relationships and Level of education were X<sup>2</sup> (4.337) and P-value=0.227, increase in Bad in secondary were 33.70% while in good were 34.09% in Secondary. Regarding Occupation, results show a significant relation between Social relationships and Occupation were X<sup>2</sup> (36.731) and P-value=0.001, increase in Bad in Working were 88.04% while in good were 52.92% in Not working. Regarding HYN duration, results show a significant relation between Social relationships and HYN duration were X<sup>2</sup> (47.478) and P-value=0.001, increase in Bad in 3-5 were 41.30% while in good were 52.27% in 5-10.

**Table 6 Distribution the relation between Environment and patients' socio-demographic**

		Environment				Chi-square	
		Bad		Good		X <sup>2</sup>	P-value
		N	%	N	%		
Age	<25	35	28.23	53	19.20	4.524	0.104
	25-50	45	36.29	103	37.32		
	>50	44	35.48	120	43.48		
Marital state (%)	Married	42	33.87	182	65.94	37.958	<0.001*
	Single	37	29.84	43	15.58		
	Divorced	21	16.94	31	11.23		
	Widowed	24	19.35	20	7.25		
Smoking (%)	Non-smoker	94	75.81	258	93.48	25.303	<0.001*
	Smoker	30	24.19	18	6.52		
Level of education	Less than secondary	44	35.48	32	11.59	33.473	<0.001*
	Secondary	39	31.45	97	35.14		
	University	19	15.32	69	25.00		
	Postgraduate	22	17.74	78	28.26		
Occupation	Working	101	81.45	143	51.81	31.596	<0.001*
	Not working	23	18.55	133	48.19		
HYN duration (%)	<3	14	11.29	30	10.87	13.582	0.004*
	3-5.	45	36.29	55	19.93		
	5-10.	43	34.68	137	49.64		
	>10	22	17.74	54	19.57		

Regarding age, results show no significant relation between Environment and age were X<sup>2</sup> (4.524) and P-value=0.104, increase in Bad 25-50 years were 36.29% while in good were 37.32% in age 25-50, regarding marital state, results show a significant relation between Environment and marital state were X<sup>2</sup> (37.958) and P-value=0.001, increase in Bad in Married were 33.87% while in good were 65.94% in married, regarding Smoking, results show a significant relation between Environment and Smoking were X<sup>2</sup> (25.303) and P-value=0.001, increase in Bad in Non-smoker were 75.81% while in good were 93.48% in Non-smoker. Regarding Level of education, results show no significant relation between Environment and Level of education were X<sup>2</sup> (33.473) and P-value=0.001, increase in Bad in Less than secondary were 35.48% while in good were 35.14% in Secondary. Regarding Occupation, results show a significant relation between Environment and Occupation were X<sup>2</sup> (31.596) and P-value=0.001, increase in Bad in Working were 81.45% while in good were 51.81% in working. Regarding HYN duration, results show a significant relation between Environment and HYN duration were X<sup>2</sup> (13.582) and P-value=0.004, increase in Bad in 3-5 were 36.29% while in good were 49.64% in 5-10.

## Discussion

In this study the aim of the study to assessment Quality of Life among Hypertensive Patients Visiting the Primary Health Care Centers in Makkah- Al Mokarramah, Saudi Arabia in 2021

we had 400 hypertensive patients with, shows that most of the participants (41.0%) were in the age group >50 years, marital status the majority of participant are married were(56.0%) while single were(20.0%), the smoking the majority of participant Non-smoker were(88.0%), the HYN duration the majority of participant duration from 5-10. were(45.0%). Regarding level of education the majority of participant are Secondary education were(34.0%) the occupation the majority of participant working were (61.0%). We found that hypertensive patients had somewhat high median scores with the highest score for social relationships . We found that age had significant effect on all . (See **Table 1**)

Compliance to treatment also had a significant positive effect on each domain scores. Diabetes, heart diseases, kidney diseases and vision problems are the only diseases that had a significant effect on the scores. It was found that older age was associated with less scores in the physical health domain and higher scores in the social do-main. Being married or widowed was associated with higher scores in all domains. Meanwhile, being single had higher scores of the social and environmental .There were diseases that affected each domain scores. Generally, presence of diseases was associated with significant less scores. Compliance to treatment especially calcium channel blockers was associated with higher scores. Surprisingly, beta-blockers use was associated with fewer score in the third domain.(see table 3,4,5,6)

Our results are consistent with a study conducted in rural Vietnam in which they used the same scale [26]. Their results implied that the psycho-logical domain had the worst scores while the other domains were considered as a moderate [23]. The least domain scores were the physical do-main while the highest was social domain. In our study, the psychological domain was considered high with the highest minimal scores among all other domains. The study also confirmed our results that compliance to treatment was associated with better quality of life[26]. However, our results were inconsistent with other studies that found that it was a weak correlation. Cote et al. considered the correlation between the compliance to treatment and quality of life in hypertensive patients as negligible [27]. Another study in hypertensive geriatric found the same results 25. In addition, another study found that it is a reverse relationship and that the increase in the quality of life was associated with higher compliance to treatment [16].

Another obvious influencer on the quality of life in hypertensive patients is the presence of co-morbidity. Although their influence is inconsistent across the domains in our study . Comorbidities were generally associated with lower quality of life and lower scores[7,16,26]. Surprisingly, vision problems were not associated with low scores in our study. In a study that assessed the quality of life in hypertensive patients with co-morbidities of chronic kidney diseases and heart diseases [17]. They found that it significantly affected the quality of life in those patients. They also found that there were other cofactors in this relationship that includes age, combination of other comorbidities and anti-hypertensive treatment [27]. In contrast, another study found that diabetes did not have effect on the quality of life in hypertensive patients7. However, other studies reported that both type 1 or 2 have a deleterious effect on the quality of life in those patients [26] .

These studies implied that diabetes influenced the general domains and physical domains[26]. However, in our study, we found that only diabetes was associated with the significant lower physical domain scores. Furthermore, the heart diseases and chronic kidney diseases were not

significantly associated with lowering of the physical scores. A study found that it would takes four years to produce a significant decline on the physical health [28,29]. However, another study by Aydemir et al. found that many comorbidities e.g. congestive heart failure, cerebrovascular disease, obesity and angina affected also. Many studies assessed the quality of life in hypertensive patients with myocardial infarction, undergoing coronary artery bypass grafting (CABG) or atherosclerosis and found that they had generally less quality of life . with presence of comorbidities and older age was associated with less quality of life . Comparing our results to other studies conducted in Saudi Arabia, Al Ghamdi et al. used SF-36 to assess the quality of life in hypertensive patients [30]. The results were considered consistent to our study as they found that old age, female, diabetes, and unmarried were associated with poor quality of life 22. Another study by Qusair et al. had shown the same results. They further assessed the education level, employment and low income and found that they were associated with poor quality of life 20. Measurement of quality of life in hypertensive patients was conducted using variable questionnaires. SF-36 and WHOQOL-BREF were the most used questionnaires in Another study found that the internal consistency of WHOQOL-BREF was considered strong [23]. There are two versions of the WHOQOL, one is WHOWOL-100 and its abbreviated form WHOQOL-BREF [30]. Many studies compared between both and found that WHOQOL-BREF had much higher reliability and internal consistency[29].

## Conclusion

The previous study found that hypertensive patients attending to primary healthcare had moderate quality of life with the least scores in physical domain and highest in social domain. Prominent risk factors for high scores were compliance to treatment and marital status. Presence of co-morbidities and beta blockers were associated with lower quality of life among the studied group.

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## Conclusions

That hypertensive patients in our study had low adherence and poor quality of life. Findings suggest that uncontrolled blood pressure, presence of any comorbidity, and the duration of the disease were associated with low adherence while education up to intermediate was associated with better adherence. Domains of quality of life were not associated with medication adherence. However, overall perceived QOL is negatively associated with low medication adherence. Other significant factors associated with lower QOL in one or more domains were increasing age, uncontrolled blood pressure, and unemployment, and the presence of comorbidity. Education was associated with better QOL .

Health education and counseling related to disease and its complications, medication adherence, and dietary control such as salt reduction should be mandatory components of hypertension care in PHC settings. This will help achieve better compliance with medication and control of blood pressure, and improved QOL.