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PREVALENCE AND FACTORS ASSOCIATED WITH POOR QUALITY OF LIFE OF PATIENTS WITH HYPERTENSION IN SABYA CITY, SAUDI ARABIA

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ABSTRACT

Background: Hypertensive patients frequently reported poor quality of life as a result of impaired general health. However, this study was conducted to assess the quality of life of patients with hypertension and identify possible factors for impaired quality of life among patients with hypertension in Sabya city, Southwestern region of Saudi Arabia. **Methods**: A cross-sectional quantitative study on Clinically stable out-patients with hypertension (n = 420) were interviewed to assess their quality of life using WHOQOL BREF. Personal, socio-demographic, lifestyle habits and clinical factors were gathered through the interview and by reviewing medical records. The data were analysed using SPSS (statistical package for social science studies). **Results**: The results show that 43.8% of the patients rated their quality of life as good, followed by 36.2% who didn't rated their quality of life as good. Additionally, there were 37% of participants were not satisfied with their general health. There were significant relations between quality of life domains and (age, education level, coexisting chronic illnesses, complications, duration of

and uncontrolled blood pressure) among participants in this study. **Conclusion**: There were many factors affecting quality of life of patients with hypertension including sociodemographic, clinical, lifestyle factors. Primary healthcare physician should be trained to evaluate quality of life and identify patients' problems to resolve it to improve treatment outcomes and therefore quality of life among those patients. **Word count (Abstract):** 225 words.

KEYWORDS: Quality of life, Hypertension, Chronic Disease, Disease Burden, Saudi Arabia.

1. INTRODUCTION

Hypertension is considered as a public health issue and one of the leading factors of disability-adjusted life years[1,2], as a primary risk factors for developing heart disease and stroke, and accounting for deaths due to heart disease, and stroke (45% and 51% respectively) globally and particularly in developing countries.[1,3] Nearly two-thirds of hypertensives live in low- and middle-income countries, resulting in a huge economic burden.[1] Saudi Arabia is one of the developing countries; which facing a dramatic increase in prevalence of hypertension.[4,5] The prevalence of hypertension in adult age (30-70) in Saudi Arabia was about 26.1% in crude term. For males was 28.6%, while for females was 23.9%.[4] In Saudi Health Interview Survey in 2013, found that the prevalence of hypertension in Saudi Arabia was 15.2%.[5]

Quality of life is often considered to be equally, if not more important than quantity of life. It is a multi-dimensional element of well-being affected by the physical, mental, emotional and social status of patients, which is increasingly used to assess the health status of the general public and patients, as well as the impact of health care interventions.[6] The most widely accepted model of HRQOL is based on the World Health Organization's definition of quality of life as a "complete state of physical, mental, and social well-being and not merely an absence of disease in infirmity". The importance of psychological, social and physical functioning to perceived HRQOL is stressed by this model.[7] Hypertension, especially in mild to moderate stages, is usually considered to be an asymptomatic condition. However, whether hypertension is a condition associated with alterations in wellbeing and health-related quality of life is still a controversial issue.[8] A hypertension diagnosis may increase an individual's awareness of bodily symptoms and make an otherwise 'healthy' person ill.[9]

HRQOL studies among hypertensive individuals have given some conflicting results. Some studies have found worse HRQOL among hypertensives when compared to the general population,[10-12] and others have found no impact of hypertension on HRQOL in some or all domains.[13]

A cross sectional study was conducted in UAE, to evaluate quality of life for hypertensive patients using different types of antihypertensive medications the authors found that there were a very high significance differences ($p \leq 0.001$) in the eight scales of quality of life and in physical and mental components summary scores among control group and disease group; control group had higher scores than hypertensive patients.[14] In Saudi Arabia, the mean scores for the physical component summary scale were 39.3 and 50.8 for cases and controls respectively. The mean scores for the mental component summary scale were 43.7 and 50.8 for cases and controls respectively.[15] In one study conduct to explore if there is correlation between adherence of medication and HRQOL. It found that Correlations between HRQOL and adherence were positive but typically weak or negligible in magnitude.[16]

Both hypertension and obesity deteriorate the health related quality-of-life (HRQOL) of affected patients. Lower HRQOL scores occur in overweight and obese children,[17] adolescents and adults.[18] In hypertensive patients, weight reduction and increased physical activity improved HRQOL.[19]

HRQOL measurements are helpful as a guide to policymakers, health service researchers, epidemiologists, program evaluators, and clinicians interested in the effects of interventions. Patients themselves, their family members and employers can benefit too e.g.: from information about which areas of life the patient is most comfortable with and which may need more focused therapy.[20]

2. METHODS AND MATERIALS

2.1 STUDY DESIGN: Descriptive cross-sectional design was used in the present study.

2.2 STUDY AREA: This study was conducted in Sabya City, which is located in south-western part of Saudi Arabia. The study was conducted among patients with hypertension who have been registered in the health records of all primary health care (PHC) centers in Sabya city. There are four PHC centers in Sabya city. The total number of hypertensive patients in all PHC centers were 3889.

2.3 TARGET POPULATION: The study was conducted among patients with hypertension who have been registered in the health records of all primary health care (PHC) centers in Sabya city. There are four PHC centers in Sabya city. The total number of hypertensive patients in all PHC centers in Sabya city during 2018 were 3889. Participants includes all patients who have been diagnosed by Saudi Hypertension Management Guideline in Primary Health Care.[21] The diagnosis and classification of hypertension as follows:

Table 1: Diagnosis and classification of hypertension.

Category	SBP(mm Hg)		DBP(mm Hg)
Normal	<120	And	<80
Pre-HTN	120 – 139	And/ or	80 -89
HTN Grade 1	140 – 159	And /or	90 -99
HTN Grade 2	160 – 179	And or	100 – 109
HTN Grade 3	> 180	And / or	>110

[21] Saudi Hypertension Management Guideline

All patients with hypertension who have been registered in PHC centers in Sabya city was listed in a sampling frame and stratified according to their gender. The researcher followed a stratified sampling technique with proportional allocation. The sample was distributed over all centers proportional to the number of registered patients. Within each centres, the target sample of patients was randomly selected.

2.4 SAMPLE SIZE AND SAMPLING TECHNIQUE

The minimum sample size for this study has been decided according to Dahiru et al. (2006) [22], as follows:

$$n = \frac{Z^2 \times P \times Q}{D^2}$$

where:

n: Calculated sample size

Z: The z-value for the selected level of confidence $(1- \alpha) = 1.96$.

P: Estimated prevalence in the population =50%, i.e., 0.50. (Assuming that 50% of the patients with impaired Quality of life)

Q: (1 – P) = 50%, i.e., 0.50

D: The maximum acceptable error = 0.05.

$$n = \frac{1.96^2 \times 0.50 \times 0.50}{0.05^2} = 385$$

10 % of the sample size was added to guard non response. So that the total sample size was 420 patients.

All PHC centres in Sabya city was included in this study. All patients with hypertension who have been registered in PHC centres in Sabya city was listed in a sampling frame and stratified according to their gender. The researcher followed a stratified sampling technique with proportional allocation. The sample was distributed over all centres proportional to the number of registered patients. Within each centre, the target sample of patients was randomly selected.

2.5 DATA COLLECTION TOOLS

The researcher interviewed each patient to complete the data collection sheet which was divided into two parts as followed:

First part included:

- Socio-demographic data including age in years, sex (male versus female), level of education (illiterate or low education or high education), occupation (employed versus not employed), marital status (married, widowed, single and divorced), monthly income and residence place (village vs city)
- Lifestyle habits: smoking, khat chewing, physical exercise
- Clinical data: disease duration, comorbidity and complications of hypertension, family history, type of drug taken for hypertension. Patients height, weight and BMI was measured by the researcher.

Second part included: validated questionnaires: Health Related Quality of Life Brief (WHOQOL-BREF). Arabic version of World Health Organization Quality of Life – Brief (WHOQOL-BREF): A pretested and organized survey was utilized to get the data on socio-statistic profile, history of illness. The personal satisfaction was surveyed by WHOQOL-BREF scale. The WHOQOL-BREF is an Arabic version of WHOQOL-BREF available, and validated by WHO. The Arabic version of the WHOQOL-BREF was based in the first instance on the original (English) version of the instrument.

2.7 STATISTICAL ANALYSIS PLAN

Personal, demographic variables and clinical characteristics of the participants was estimated using descriptive statistics, including frequency counts and percentages for categorical variables and means, standard deviations, medians and ranges for numerical variables (based on their normality). Quality of life were assessed using validated scales (WHOQOL-BREF),

and scores on this instruments were interpreted as continuous measurements. This was summarized using descriptive statistics and confidence intervals for means. Association between quality of life domains scores and personal, socio-demographic and clinical variables was analysed using correlation between pairs of continuous variables. Differences between groups: Based on domains score of WHOQOL-BREF differences between groups of categorical variables was analysed using Independent t-test and One Way Analysis of Variance. Domains score of WHOQOL-BREF were treated as dependent. Personal, socio demographic and clinical) variable were interpreted as independent categorical variable to explore differences among subcategories of these variable.

2.8 ETHICAL CONCIDERATIONS

Ethical Approval was obtained from Institutional Review Board at Jizan Hospital even before conducting this study. Administrative Approval was taken by Directorate of primary health care centers, for doing the study. Informed consent from each physician to participate in the study was taken.

1. RESULTS

Background characteristic is illustrated in table 2

Table 2: Demographic details of participants.
(Values are number (percentage) unless otherwise stated) N=420

Variable	N(%)
Age (years) Mean (SD)	53.3 (±12.2)
BMI Mean (SD)	28.3 (±5)
Gender	
Male	210 (50%)
Female	210 (50%)
Nationality	
Saudi	410 (97.6%)
Non Saudi	10 (2.4%)
Marital status	
Married	317 (75.5%)
Unmarried	103 (24.5%)
Residency	
Rural	280 (66.7%)
Urban	140 (33.3%)
Education	
Illiterate	100 (23.8%)
Basic	106 (25.2%)
High	214 (51%)
Employment status	
Unemployed	259 (61.7%)
Employed	161 (38.3%)

There were about 25% of patients complaining of complications. The most common form of complications came in the form of cardiac diseases (with about 14% of participants). In the study, 39.3% of patients were on ACEI and 30.5% of patients were on calcium channel blockers. More than half of patients reported suffering from at least one additional chronic disease (52%). The most common comorbidities among patients were joint and back pain and diabetes (31% and 26.7% respectively).

In the scores of quality of life domains, the lowest rating domain was for physical health with a mean of 59.3 (±17.4). While the psychological domain got an average of 67.2 (±17.4). The mean score for social domain were 64.9 (±21.4) and 65.9 (±17.8) for environmental domains. The perception of patients' quality of life was assessed using a single question that asked the patients to rate their life in general table 3.

Table 3: Perceived quality of life as rated by participants.	**N= 420**	
Rating scale of quality of life	**N**	**%**
Very poor	2	0.5
Poor	19	4.5
Neither poor nor good	131	31.2
Good	184	43.8
Very good	84	20

There was a significant negative correlation between age of participants and all domains scores ($r = 0.44$ for physical health, 0.27 for psychological health, 0.33 for social relationship and 0.24 for environmental health, $p < 0.001$ for all).

WHOQOL-BREF domains scores were examined in the context of education levels and revealed a significant difference in all domains scores across three different groups of educational level ($p< 0.001$).

Patients who have no complications recorded a higher mean scores than that for patients with complications in all domains with a significant association as follows; in the physical health domains patients with complications got a mean score of 50.3(±15.3) while those who had no complications got a mean score of 62.3(±17.2) $t(418) = 6.4$, $p < 0.001$). In comparing between them according to psychological health score we found that also complicated patients got a lower mean score than that for non-complicated (62(±16.3) versus 69(±17)) $t(418) = 3.7$, $p < 0.001$).

Patients who have had many comorbidities recorded a lower mean score in all domains if compared with patients had no comorbidities. This variation was particularly clear in physical health domain (66.2(±17.9) for patents with no comorbidities against 54.6(±15.7) for patients with comorbidities; $t(418) = 5.8$, $p < 0.001$). Number of medications where found to be significantly correlated with only physical domain, it have a negative quite small relationship ($r = -0.119$, $p = 0.01$). Negative relationships was found between blood pressure and all domains of quality of life. This relationship was clearly noticed between physical health and blood pressure reading with $r=0.3$ ($p < 0.001$).

2. DISCUSSION

Most of Patients participated in this study ratings their overall QOL and health satisfaction as neutral to good or poor, indicating relative impaired QOL in hypertensive patients. This was indicated in many studies in Saudi Arabia and around the world in which the authors argued that, a significant reduction in quality of life of hypertensive patients were noticed if compared to healthy populations and normotensive patients.[15, 23-29] These impairments may be due to changes of physical and psychological functions among hypertensive patients.

In comparing with other studies that used the same tool, among Saudi hypertensive patients in Jeddah city; the highest score were for physical health (61.30±16.79) and psychological health (61.16±16.59) while social relationships and environment got (56.94±22.04) and (55.45±16.35).[25]

There was a significant negative correlation between age of participants and all domains scores. There was a significant difference of all domains score across patients age groups; patients older than 65 got a lowest score in all domains when compared with other age group ($p < 0.001$). Similar studies concluded that elder population had a reduced quality of life.[25,28] In the same way; physical and psychological domains were the most affected domains by age as showed among hypertensive patients in Saudi Arabia, Vietnam and Israel.[25,27,28] During the aging process, health hazards may arise as a result of physiological and functional changes, making the individual more vulnerable to chronic diseases.

WHOQoL-BREF domains scores were examined in the context of education levels and revealed a significant difference in all domains scores across three different groups of educational level. illiterates got lower scores in all domains than that who obtained a higher education. This result were noticed in many studies around the world.[15,23,28,30] this may be

due to the lack of knowledge about healthy behaviors and about the disease conditions itself among illiterates which reflects on their quality of life. In our study, it seems that uncontrolled blood pressure affects all domains of quality of life. Many studies around the world argued the same result.[15,23,26,31,32]

Number of medications where found to be significantly correlated with only physical domain. Another study revealed that number of medications were only associated with social domains.[33] Furthermore, one study stated that number of medications were associated with all domains.[15,23,25] In Poland a study stated that duration of antihypertensive treatment were associated with lower score of HRQoL.[34] This can be related to the patients feeling about their condition seriousness, dissatisfactions or the side effect of medications.

3. CONCLUSION

Quality of life domains score were found to be lower among older participants, illiterate or participants with low educational level, participants who had many complications and comorbidities, participants with uncontrolled blood pressure and more number of medications. Thus, early recognition and resolving of problems contributing to impaired quality of life can be achieved through training programs addressing physicians and nurses working in PHCs clinics. Better management of the problems will improve the quality of life of hypertension patients leading to better clinical outcome.

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REFERENCES

1. Chockalingam A, Campbell NR, Fodor JG. Worldwide epidemic of hypertension. Canadian journal of cardiology, 2006; 22(7): 553-5.
2. Organization WH. Global health status report on non-communicable diseases. Geneva: World Health Organization, 2012.
3. Organization WH. Causes of death 2008: data sources and methods. Geneva: World Health Organization, 2011.

4. Al-Nozha MM, Abdullah M, Arafah MR, Khalil MZ, Khan NB, Al-Mazrou YY, et al. Hypertension in Saudi Arabia. Saudi medical journal, 2007; 28(1): 77-84.
5. El Bcheraoui C, Memish ZA, Tuffaha M, Daoud F, Robinson M, Jaber S, et al. Hypertension and its associated risk factors in the kingdom of saudi arabia, 2013: a national survey. International journal of hypertension, 2014; 2014.
6. Carvalho MAN, Silva IBS, Ramos SBP, Coelho LF, Gonçalves ID, Figueiredo Neto JAd. Quality of life of hypertensive patients and comparison of two instruments of HRQOL measure. Arquivos brasileiros de cardiologia, 2012; 98(5): 442-51.
7. Al-Rukban MO, Al-Sughair AM, Al-Bader BO, Al-Tolaihi BA. Management of hypertensive patients in primary health care setting, auditing the practice. Saudi medical journal, 2007; 28(1): 85-90.
8. Organization WH. The first ten years of the World Health Organization, 1958.
9. Wagner EH, Strogatz DS. Hypertension labeling and well-being: alternative explanations in cross-sectional data. Journal of chronic diseases, 1984; 37(12): 943-7.
10. Stewart AL, Greenfield S, Hays RD, Wells K, Rogers WH, Berry SD, et al. Functional status and well-being of patients with chronic conditions: results from the Medical Outcomes Study. Jama, 1989; 262(7): 907-13.
11. Bardage C, Isacson DG. Hypertension and health-related quality of life: an epidemiological study in Sweden. Journal of clinical epidemiology, 2001; 54(2): 172-81.
12. Didem A, Unal A, Alaettin U, Mustafa T. Prevalence of hypertension among individuals aged 50 years and over and its impact on health related quality of life in a semi-rural area of western Turkey. Chinese medical journal, 2008; 121(16): 1524-31.
13. Moum T, Næss S, Sørensen T, Tambs K, Holmen J. Hypertension labelling, life events and psychological well-being. Psychological medicine, 1990; 20(3): 635-46.
14. Shanableh S, Abdulkarem A, Shamssain M, Sarhan F. Quality of life of hypertensive patients on different types of antihypertensive medications. IOSR Journal of Pharmacy, 2014; 4(5): 23-8.
15. Al-Ghamdi MS, Taha AZ, Ahmad B, Khalil MS. Quality of life in a sample of hypertensive patients attending primary health care facilities in Al-Khobar, Saudi Arabia. Journal of family & community medicine, 2002; 9(1): 25.
16. Côté I, Farris K, Feeny D. Is adherence to drug treatment correlated with health-related quality of life? Quality of life research, 2003; 12(6): 621-33.
17. WW S, JJ R. The Malaysian Childhood Obesity Treatment Trial (MASCOT). Malaysian journal of nutrition, 2011; 17(2).

18. Al-Akour N, Khader Y, Khassawneh M, Bawadi H. Health-related quality of life of adolescents with overweight or obesity in the north of Jordan. Child: care, health and development, 2012; 38(2): 237-43.
19. Young DR, Coughlin J, Jerome GJ, Myers V, Chae SE, Brantley PJ. Effects of the PREMIER interventions on health-related quality of life. Annals of Behavioral Medicine, 2010; 40(3): 302-12.
20. Bremner AD. Antihypertensive medication and quality of life—silent treatment of a silent killer? Cardiovascular drugs and therapy, 2002; 16(4): 353-64.
21. Society SHM. Saudi hypertension management guidelines, 2007. 2004.
22. Dahiru T, Aliyu A, Kene T. Statistics in medical research: misuse of sampling and sample size determination. Ann Afr Med., 2006; 5(3): 158-61.
23. Zygmuntowicz M, Owczarek A, Elibol A, Olszanecka-Glinianowicz M, Chudek J. Blood pressure for optimal health-related quality of life in hypertensive patients. Journal of hypertension, 2013; 31(4): 830-9.
24. Sekhar NR, Chowta M, Chowta KN, Acharya SD, Shenoy KA. Effect of Antihypertensive Medications on the Subjective Quality of Life in Previously Untreated Hypertensive Patients. Journal of Young Pharmacists, 2016; 8(3): 225.
25. Qusaier R, Al-Tqiqi Y, Al-Ahmadi H, Al-Qarni A, Felemban A. Quality of Life among Hypertensive Patients Attending Primary Healthcare Centers in Jeddah, Saudi Arabia. International Journal of Advanced Research, 2016; 4(12): 2203-14.
26. Carvalho MVd, Siqueira LB, Sousa ALL, Jardim PCBV. The influence of hypertension on quality of life. Arquivos brasileiros de cardiologia, 2013; 100(2): 164-74.
27. Amir M, Bar-on D. Hypertension and quality of life: The disease, the treatment or a combination of both. Psychology and Health, 1996; 11(5): 685-95.
28. Ha NT, Duy HT, Le NH, Khanal V, Moorin R. Quality of life among people living with hypertension in a rural Vietnam community. BMC Public Health, 2014; 14(1): 833.
29. Melchiors AC, Correr CJ, Pontarolo R, Santos FdOdS, Souza RAdP. Quality of life in hypertensive patients and concurrent validity of Minichal-Brazil. Arquivos brasileiros de cardiologia, 2010; 94(3): 357-64.
30. MIZUTANI M, TASHIRO J, Nakayama K, SUGIARTO H. Identifying important aspects of quality of life among Muslims with hypertension in rural West Java, Indonesia. 滋賀医科大学雑誌, 2018; 31(2): 1-8.

31. Sheethal M, Mahendra B, Harish B. Assessment of quality of life (QoL) in known hypertensive workers of Karnataka State Road Transport Corporation (KSRTC), Mandya district. International Journal of Medical Science and Public Health, 2015; 4(10): 1393-6.
32. Youssef R, Moubarak I, Kamel M. Factors affecting the quality of life of hypertensive patients, 2005.
33. Oza BB, Patel BM, Malhotra SD, Patel VJ. Health related quality of life in hypertensive patients in a tertiary care teaching hospital. J Assoc Physicians India, 2014; 62(10): 22-9.
34. Zygmuntowicz M, Owczarek A, Elibol A, Chudek J. Comorbidities and the quality of life in hypertensive patients. Pol Arch Med Wewn, 2012; 122(7-8): 333-40.