Treatment Adherence and its Association to Quality of Life among Patients with Hypertension

Aya Ahmed Ghayadh*, Arkan Bahlol Naji**

*Academic Nurse, Ministry of Health/ Al-Diwaniyah Health Directorate, Iraq. **Prof. PhD, Community Health Nursing Department/ College of Nursing University of Baghdad, Iraq.

Abstract

Background: Chronic diseases require long-term adherence to treatment is important for the control of disease as well as prevention of complications. Non-adhere may lead to worsening of the disease, which may affect patients' quality of life. This study aimed to assess the quality of life and its relationship to treatment adherence among patients with hypertension.

Methods: A descriptive correlational study conducted in Diwaniyah city during the period from October 1st 2022 to March 8th 2023. The study sample consist of 200 patients is selected according to non probability sampling approach. The validity of the questionnaire was verified by experts and its reliability was verified through a pilot study. The total number of items included in the questionnaire was 26 items to assess quality of life and 14 items to assess treatment adherence. Data were collected through the interview and analyzed by applying descriptive and inferential statistical analysis

Results: The results indicated that the average age of the respondents is 47.67 years, (56.5%) were female, (62%) were married, (43.5%) college graduated and (55%) government employ. Over than half (70.5%) of the study participants were found to average quality of life and (57%) were low adherence. There were positive correlation between treatment adherence quality of life.

Conclusions: The results showed that mean treatment adherence of respondents was within low level, and the quality of life was within average level. Statistical significance association was found between treatment adherence and quality of life. The study adds knowledge regarding health education for all segments of society towards treatment adherence among patients with hypertension. Further study is needed to explore strategies that maintain therapeutic adherence among patients in order to improve their quality of life.

Key-wards: Treatment Adherence, Quality of Life, Patients with Hypertension.

INTRODUCTION

Long-term treatment compliance is essential for the management of chronic diseases and the avoidance of consequences. Failure to comply may aggravate the illness and lower the quality of life for the patient. This study sought to accurately evaluate individuals with hypertension's quality of life and its related to adherence to medication (1). In the world, hypertension is viewed as a serious public health issue. It is thought to be one of the main killers and a primary reason for outpatient visits. Considering its role in the expanding global CVD pandemic, which has just been validated by the Global Burden of Disease Study 2000 update, hypertension is thought to be responsible for almost 50% of CVDs globally. It is also thought to be one of the primary causes of cardiovascular mortality, which accounts for 20 to 50 percent of all fatalities (2). Due to limited healthcare access and disease awareness, approximately three-quarters of those who have hypertension are from low- and middle-income nations. The frequency of hypertension is generally very high in Middle Eastern nations. According to a study done in the Islamic Republic of Iran, more than 57% of adults under the age of 60 have hypertension, compared to 3.6% of people under the age of 30. (3). A key measure for assessing the success of hypertension treatment is quality of life (QoL) and treatment adherence. According to a recent comprehensive analysis of 20 research, patients with hypertension reported lower QoL and adherence than those with normotension (4). Patients with co-morbid conditions likely to have lower quality of life (QOL) than those without it (5). Many studies in Iraq have looked at people's quality of life, including those with chronic illnesses. To the best of our knowledge, no research has been done on the relationship between hypertension patients' quality of life and the adherence to their therapy, particularly in the southern region of Iraq (6). Understanding QoL of individuals living with hypertension will help policy makers and healthcare managers design and implement culture specific support and care. Thus, this study aimed to examine the quality of life and its relationship to treatment adherence among patients with hypertension in

Diwaniyah City in four dimensions (physical health, psychological, social relationship and environment) using the World Health Organization Quality of life - BREF instrument (WHOQOL-BREF) (6) and Hill-Bone HBP compliance scale [8].

METHODS

Study Design: The descriptive correlational study design technique was carried out in Al-Diwaniyah City in primary health care centers during the period from October 1st 2022 to March 8th 2023.

Study Sample: The study sample included in present study are patients with hypertension is selected according to non probability sampling approach with a total of (200) patients who are attended primary health care centers for the purpose of receiving care was chosen based on a set of criteria include: 1)Those who are diagnosed with hypertension, 2) who are different level of education, 3)who are different age groups and 4) volunteer to participate in the study after his consent

Study Instrument: This questionnaire consists of two part include the followings.
Part I: Patients characteristics include age, gender, monthly income, marital status, education level, occupation and duration of hypertension and associated comorbidities.
Part II: WHOQoL, is a 26-item instrument consisting of four domains: physical health, psychological health, social relationships, and environmental health. It measured on 5-level type of Likert Scale (1=Very poor, 2=Poor, 3=Moderate, 4=Good and 5=Very Good). Accordingly, points can be taken range from 26-130. The higher average defined as good quality of life. Cronbach alpha in current = 0.89 which indicated acceptable level

Part III: Hill-Bone Compliance scale, consist of (14) items of treatment adherence measured on 4-level type of Scale (1=Always, 2=Mostly, 3=Sometime and 4=Never). Accordingly, points can be taken range from 14-56. The higher average defined as good treatment adherence. Cronbach alpha in current = 0.94 which indicated acceptable level.

Data Collection: The researcher interviewee the participants, explained the instructions, answered their questions regarding the form, urged them to participate and thanked them for the cooperation. The interview techniques was used on individual bases, and each interview (15-20) minutes after taking the important steps that must be included in the study design.

Statistical Analysis: The IBM SPSS 20.0 program was used for all the analyses that follow. Numbers and percentages (No. and %) were used to categorize the variables, while the mean and standard deviation were used to characterize the continuous variables (mean and SD). Spearman's Correlation Statistics were used to correlate between study variables. Statistical significance was defined as a two-tailed p .05.

RESULTS

Table (1):Socio-Demographic Characteristics

Variables	Classification	No.	%
Age /years	<30 years old	44	22.0
	30-39 years old	18	9.0
	40-49 years old	34	17.0
	50-59 years old	46	23.0
	60-69 years old	46	23.0
	70 and older	12	6.0
	47.67 ± 14.77		
Gender	Male	87	43.5
	Female	113	56.5
Monthly income	<300 thousand dinars	48	24.0
	300-600 thousand dinars	66	33.0
	601-900 thousand dinars	58	29.0
	> 900 thousand dinars	28	14.0
Marital status	Single	33	16.5
	Married	125	62.5
	Divorced	18	9.0
	Widower	24	12.0
Education level	Illiterate	18	9.0
	Read & write	23	11.5

	Elementary school	19	9.5
	Middle school	15	7.5
	High school	38	19.0
	College	87	43.5
Occupation	Government employ	110	55.0
	Free-business	10	5.0
	Retired	23	11.5
	Unemployment	57	28.5
Duration of HTN	<1 year	30	15.0
	1-5 years	129	64.5
	>5 years	41	20.5
Chronic comorbidities	None	13	6.5
	DM	121	60.5
	Romantic Fever	15	7.5
	Asthma	17	8.5
	CVA	30	15.0
	CA	4	2.0

Findings in table (1) show participants characteristics, the mean age is 47.67, the age group 50-59 and 60-69 years old were records the highest (23%) for each them. In regard with gender, the more than half of participants were female (56.5%). Monthly income related findings, (33%) were make 300-600 thousand dinars. Concerning marital status, one third of participants were married (62%). Respect to the education level, most of participants were college graduated (43.5%). Occupation associated findings, more than half of participants were government employ (55%). Regarding duration of hypertension, approximately one-third of participants expressed 1-5 years (64.5%). In terms of chronic comorbidities, the most common associated HTN among patients with hypertension were DM (60.5%).

Table (2): Overall Level of HBP Compliance Scale and WHOQoL

Variables	Rating	No.	%	M (±SD)
HBP Compliance Scale	Low	114	57.0	27.15 ± 9.25
	Moderate	75	37.5	
	High	11	5.5	
WHOQoL	Poor	33	16.5	74.31± 21.82
	Fair	141	70.5	
	Good	26	13.0	

The results in table 2 showed that (57%) of the patients with hypertension expressed a low treatment adherence 27.15 (±9.25) and (70.5%) were average quality of life 74.31 (±21.82).

Table (3) Correlation between Treatment Adherence and Quality of Life among Patients with Hypertension

Correlation Statistics	1	2	3	4	5	6
1. HBP Compliance Scale	1					
2.Physical QoL	.218**	1				
3.Psychological QoL	.164*	.379**	1			
4.Social QoL	.195**	.231**	.232**	1		
5.Environmental QoL	.192**	.150*	.408**	.766**	1	
6.Overall WHOQoL	.242**	.600**	.600**	.666**	.743**	1

There were positive significant between quality of life and treatment adherence among patients with hypertension.

DISCUSSION

In current study, the most of patients with hypertension are female at mean age is 47.67, the age group 50-59 and 60-69 years old were records the highest for each them, followed by age of <30, 40-49, 30-39 and ≥70 years old. This findings in line with findings from Baghdad City, the most of participants with cardiovascular diseases are 50 years and older (9). This consisting with findings from AL-Najaf AL-Ashraf City and Kut city, the most of patients with hypertension are within age of 50 years and above (10)(11). These results are possible because chronic diseases such as high blood pressure often come at an advanced age. Most of participants were make 300-600 thousand dinars and this insufficient to adhere to the treatment even though they are college graduates and government employ. This results is supported by study conducted in Baghdad city and Al-Diwaniyah, find that the most of patients with insufficient income (12)(13). The economic status is an most important factor that can build adherence to treatment among patients with chronic conditions (14). Concerning marital status, one third of participants were married. This findings in agreement with findings from outpatient consultancy clinics in Al-Hilla City Hospitals, most patients with chronic diseases are married due to their age (15). The age groups is associated marital status especially among those who chronic conditions (16)(17). Regarding duration of hypertension, approximately one-third of participants expressed 1-5 years and the most common associated HTN among patients with hypertension were DM. The duration of disease play an importance roles in diseases management (18)(19). This consisting with findings from AL-Hussein Medical-City. Karbala city (20). Also, the most common associated hypertension are diabetes mellitus (21)(22).

The WHOQOL-BREF is a valid tool for assessing QOL in hypertensive individuals. The findings showed that a fair quality of life was stated by 70.5% of the hypertension patients. Patients with hypertension had an average health-related quality of life across all dimensions. These findings show that the general treatment approach needs to change, and that health professionals, government, non-governmental organizations, and the community need to pay more attention to patients' quality of life. This findings in line with finding from Malaysia (23), Poland (24) and Nigeria (25). The average age of the be a contributing factor in the average level of life quality, as the average age has a significant impact on the quality of life for people with high blood pressure. This conclusion is more significant than those from the Tertiary Care Hospital in Erode (26), Tamil Nadu (27), and Northeast Ethiopia (28), where patients with hypertension had health-related conditions of inadequate quality. Another population-based study found that hypertension was associated with a higher risk of having a lower HRQoL, which corresponds to 14 or more sick days or more per month in comparison to those with normotension. This result suggests that hypertension patients have a lower quality of life (29). The sample size, the age of the study population, and the demographic and social variables could all be contributing factors to the disparities. The current study's findings on quality of life are worse than those from Kathmandu (30), Saudi Arabia (31) and Colombia (32). The most obvious disparities result from various educational levels, demographics, and health system quality.

Several research have looked into the variables influencing treatment adherence. This study demonstrates that antihypertensive medication adherence is low. In this group, the rate of adherence to hypertension medication was found to be low (57%), similar to the Al-Khobar study but higher than the Saudi Arabia study, where the rates of non-adherence were found to be 47 and 34.7%, respectively (33) (34). Adherence rates in other research from various nations ranged from 15 to 88%. (35). The disparities in demographic characteristics, medication adherence measurement methods, and healthcare systems may be the cause of this discrepancy in adherence rate.

Quality of life (QOL) is an important indicator to evaluate hypertensive treatment outcomes. A recent systematic review of 20 studies indicated that hypertensive patients had a lower QOL compared with normotensive people (36). Findings show that the treatment adherence is positive significant physical quality of life (r= .218; p= .000), psychological quality of life (r= .164; p= .005), social quality of life (r= .195; p= .000), environmental quality of life (r= .192; p= .000) and overall quality of life (r= .242; p= .000). So, the treatment adherence improves the quality of life, so the better the commitment, the better the result of the quality of life in the physical, social and environmental fields. This findings similar to the findings of previous studies in Mathieu (37) which refer to adherence to pharmacological treatment as a promoting factor for HRQoL highlight that educational interventions can promote increased scores in its main aspects (physical, mental, sexual function, sleep, among others) (38). Moreover, a cross-sectional designed study The results of this study revealed an association between increased

adherence to treatment, a increased quality of life (4). Besides, there is an association between QOL and adherence to therapeutic recommendations among hypertensive elderly patients. It has been concluded that with an increasing QOL, the level of adherence to therapeutic recommendations increases. The level of adherence is also negatively affected by: older age, longer duration of disease, worse marital status, lower education, living alone, and using polytherapy (39).

The results showed that mean treatment adherence of respondents was 27.15 within low level, and the quality of life was 74.31 within average level. Statistical significance association was found between treatment adherence and quality of life (p=.000). The study adds knowledge regarding health education for all segments of society towards treatment adherence among patients with hypertension. Further study is needed to explore strategies that maintain therapeutic adherence among patients in order to improve their quality of life.

CONCLUSIONS

The results showed that mean treatment adherence of respondents was within low level, and the quality of life was within average level. Statistical significance association was found between treatment adherence and quality of life. The study adds knowledge regarding health education for all segments of society towards treatment adherence among patients with hypertension. Further study is needed to explore strategies that maintain therapeutic adherence among patients in order to improve their quality of life.

LIST OF REFERENCES

1. Stephenson E, Butt DA, Gronsbell J, Ji C, O'Neill B, Crampton N, Tu K. Changes in the top 25 reasons for primary care visits during the COVID-19 pandemic in a high-COVID region of Canada. PloS one. 2021 Aug 12;16(8):e0255992.

2. Xing L, Jing L, Tian Y, Liu S, Lin M, Du Z, Ren G, Sun Q, Shi L, Dai D, Liu S. High prevalence of stroke and uncontrolled associated risk factors are major public health challenges in rural northeast China: a population-based study. International Journal of Stroke. 2020 Jun;15(4):399-411.

3. Akbari M, Moosazadeh M, Ghahramani S, Tabrizi R, Kolahdooz F, Asemi Z, Lankarani KB. High prevalence of hypertension among Iranian children and adolescents: a systematic review and meta-analysis. Journal of hypertension. 2017 Jun 1;35(6):1155-63.

4. Jneid S, Jabbour H, Hajj A, Sarkis A, Licha H, Hallit S, Khabbaz LR. Quality of life and its association with treatment satisfaction, adherence to medication, and trust in physician among

5. patients with hypertension: a cross-sectional designed study. Journal of cardiovascular pharmacology and therapeutics. 2018 Nov;23(6):532-42.

5. Khayyat SM, Mohamed MM, Khayyat SM, Hyat Alhazmi RS, Korani MF, Allugmani EB, Saleh SF, Mansouri DA, Lamfon QA, Beshiri OM, Abdul Hadi M. Association between medication adherence and quality of life of patients with diabetes and hypertension attending primary care clinics: a cross-sectional survey. Quality of life research. 2019 Apr 15;28:1053-61.

6. Al-Ghuzi AA, Al-Asadi JN. Prevalence and socio-demographic determinants of hypertension in Thi-Qar Governorate: a household survey. Am J Adv Drug Deliv. 2014;2(6):802-15.

7. Whoqol Group. Development of the World Health Organization WHOQOL-BREF quality of life assessment. Psychological medicine. 1998 May;28(3):551-8.

8. Kim MT, Hill MN, Bone LR, Levine DM. Development and testing of the hill-bone compliance to high blood pressure therapy scale. Progress in cardiovascular nursing. 2000 Jun;15(3):90-6.

9. Mousa AM, Mansour K. Effectiveness of an Instructional Program Concerning Healthy Lifestyle on Patients' Attitudes after Percutaneous Coronary Intervention at Cardiac Centers in Baghdad City. Iraqi National Journal of Nursing Specialties. 2020 Sep 27;33(1):1-1.

10. Abdul-hussain M. Effectiveness of an Instructional Program Concerning Non-Pharmacological Guideline on Controlling Essential Hypertension among Patients at AL-Sader Hospital in AL-Najaf AL-Ashraf City. Iraqi National Journal of Nursing Specialties. 2020 Sep 27;33(1):93-103.

11. Radhi MM, Abd RK, Al Eqabi QA. The Body image and its relation to self-esteem among amputation patients at Artificial Limbs Hospital at Kut City, Iraq. Journal of Public Health in Africa. 2022;14(4).

12. Mohammed MY, Abdulwahed HS. Assessment of Health Follow up and Weight Control for Women with Osteoporosis in Baqubah City. Iraqi National Journal of Nursing Specialties. 2021;34(2):89-98.

13. Hermis AH, Abed RI. Effectiveness of Self-Regulation Fluid Program on Patients with Hemodialysis Self-Efficacy for Fluid Adherence in Al-Diwaniyah Teaching Hospital. Iraqi National Journal of Nursing Specialties. 2021;34(2):74-88.

14. Qassim WJ, Yasir AA, Radhi MM. Assessment of Self Hardness and its Relationship to Treatment Acceptance for Patients with Diabetes Mellitus at Diabetic Center in Hilla City/Iraq. Journal of Pharmaceutical Sciences and Research. 2018;10(1):142-5.

15. Hamzah M, Talib M. Assessment of Health Care Quality through Clients' Perspectives at Outpatient Consultancy Clinics in Al-Hilla City Hospitals.

Iraqi National Journal of Nursing Specialties. 2020;33(2):51-9.

16. AlRubaey MG, Rasheed EM. Compliance of Hypertensive Patients to Their Therapeutic Regimen in Health Facilities in Baghdad City. Age (years). 2017;50(61):19-9.

17. Juma Elywy G, Radhi MM, Khyoosh Al-Eqabi QA. Social Support and Its Association With the Quality of Life (QoL) of Amputees. Iranian Rehabilitation Journal. 2022 Jun 10;20(2):253-60.

18. Sadeq R, Lafta RK. Knowledge, attitude and practice about hypertension in hypertensive patients attending hospitals in Baghdad, Iraq. South East Asia Journal of Public Health. 2017 Dec 31;7(1):29-34.

19. Khalifa MF. Impact of Psychological Distress in Women upon Coping with Breast Cancer. Iraqi National Journal of Nursing Specialties. 2022;35(1).

20. Khudhair SS, Ahmed SA. Type 2 Diabetic Patients' Knowledge Regarding Preventive Measures of Diabetic Foot. Iraqi National Journal of Nursing Specialties. 2022;35(2).

21. Al-Ibrahimy AS, Al-Tukmagi HF. Assessing Quality of Life Among Patients with Diabetes Mellitus, Hypertension or Both Diseases in Al-Najaf Province/Iraq. Iraqi J Pharm Sci. 2017;25:29-40.

22. Mahdi HA, Al-Humairi AK. Assessment of knowledge about hypertension among hypertensive patients in Babylon Province. Medical Journal of Babylon. 2022 Jan 1;19(1):31.

23. Al-Jabi SW, Zyoud SE, Sweileh WM, Wildali AH, Saleem HM, Aysa HA, Badwan MA, Awang R. Assessment of health-related quality of life among hypertensive patients: a cross-sectional study from Palestine. Journal of Public Health. 2014 Jun;22:277-86.

24. Snarska K, Chorąży M, Szczepański M, Wojewódzka-Żelezniakowicz M, Ładny JR. Quality of life of patients with arterial hypertension. Medicina. 2020 Sep 9;56(9):459.

25. Ipinnimo TM, Adewoye KR, Durowade KA, Elegbede OE, Ojo JO, Dele-Ojo BF, Oluwademilade OJ, Atoyebi OA, Sanni TA, Asake OT, Daramola BW. Comparative assessment of health-related quality of life among hypertensive patients attending state and federal government teaching hospitals in Ekiti State, Nigeria. Dialogues in Health. 2022 Dec 1;1:100069.

26. Kaliyaperumal S, Hari SB, Siddela PK, Yadala S. Assessment of quality of life in hypertensive patients. Journal of Applied Pharmaceutical Science. 2016 May 28;6(5):143-7.

27. Praveen V, Preetha G, Prabhakaran R, Prabhushankar J, Sathiyapriya V. Assessment of Level of Anxiety among Diabetes Mellitus Patients in Selected Tertiary Hospital in Kelambakkam, Kanchipuram District, Tamil Nadu, India. Prof.(Dr) RK Sharma. 2020 Apr;20(2):2152.

28. Adamu K, Feleke A, Muche A, Yasin T, Mekonen AM, Chane MG, Eshete S, Mohammed A, Endawkie A, Fentaw Z. Health related quality of life among adult hypertensive patients on treatment in Dessie City, Northeast Ethiopia. Plos one. 2022 Sep 29;17(9):e0268150.

29. Jufar AH, Nuguse FG, Misgna HG. Assessment of health related quality of life and associated factors among hypertensive patients on treatment at public hospitals in Mekelle, North Ethiopia. Journal of Hypertension. 2017;6(1):1000239.

30. Bhandari N, Bhusal BR, Takma KC, Lawot I. Quality of life of patient with hypertension in Kathmandu. International journal of nursing sciences. 2016 Dec 1;3(4):379-84.

31. Alshammari SA, Alajmi AN, Albarrak RA, Alaqil AB, Alsaeed GK, Alzayed MZ, Alajami HN, Baqar JB, Ali S. Quality of life and awareness of hypertension among hypertensive patients in Saudi Arabia. Cureus. 2021 May 6;13(5).

32. Parra DI, Romero LA, Cala LM. Quality of life related to health in people with hypertension and diabetes mellitus. Enfermería Global. 2021 Apr 1;20(2):331-44.

33. Elbur AI. Level of adherence to lifestyle changes and medications among male hypertensive patients in two hospitals in Taif; Kingdom of Saudi Arabia. Int J Pharm Pharm Sci. 2015;7(4):168-72.

34. Algabbani FM, Algabbani AM. Treatment adherence among patients with hypertension: findings from a cross-sectional study. Clinical hypertension. 2020 Dec;26(1):1-9.

35. Egan BM, Forman JP. Patient adherence and the treatment of hypertension. UpToDate Retrieved Feb. 2017;5:2018.

36. Trevisol DJ, Moreira LB, Kerkhoff A, Fuchs SC, Fuchs FD. Health-related quality of life and hypertension: a systematic review and meta-analysis of observational studies. Journal of hypertension. 2011 Feb 1;29(2):179-88.

37. Lauzière TA, Chevarie N, Poirier M, Utzschneider A, Bélanger M. Effects of an interdisciplinary education program on hypertension: A pilot study. Canadian Journal of Cardiovascular Nursing. 2013 May 1;23(2).

38. Souza AC, Borges JW, Moreira TM. Quality of life and treatment adherence in hypertensive patients: systematic review with meta-analysis. Revista de saude publica. 2016 Dec 22;50.

39. Uchmanowicz B, Chudiak A, Mazur G. The influence of quality of life on the level of adherence to therapeutic recommendations among elderly hypertensive patients. Patient preference and adherence. 2018 Dec 4:2593-603.