Determinants of health-related quality of life of hypertensive patients attending a primary care clinic in North-Eastern Nigeria

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Abstract

Blood pressure control is critical for preventing cardiovascular disease, and studies have shown that people with high blood pressure have a lower quality of life than people with normal blood pressure. The goal of this study was to find out how hypertension patients in North-Eastern Nigeria rated their Health-Related Quality Of Life (HRQoL). This was a cross-sectional study of 277 hypertensive patients of the General Outpatient Clinic of the Abubakar Tafawa Balewa University Teaching Hospital (ATBUTH) Bauchi. Data collection was via a questionnaire that included Bulpitt and Fletcher's specific HRQoL questionnaire. The Statistical Package for the Social Sciences (SPSS) version 20 was used to analyze the data. The data was summarized using frequency and percentages, while Chi-square was used to test for the relationship. The p-values of less than 0.05 were used to determine statistical significance. The respondents' average age was 53.1±14.6 years (age range between 20 to 90 years), and 187 (67.5%) of them were female, with 183 (66.1%) of the participants currently married at the time of the study. The HRQoL mean score for respondents was 0.90±0.08, which was close to the optimal value of 1. None of the socio-demographic or clinical characteristics were found to be significantly linked to HRQoL. This study showed that the socio-demographic and clinical characteristics of hypertensive patients have little effect on HRQoL, with participants scoring near the maximum on the Bulpitt and Fletcher's specific HRQoL questionnaire.

Introduction

The most significant single contributor to the global burden of disease is hypertension.[1] It is the leading cause of Cardiovascular Disease (CVD), whose consequences are linked to major morbidity and mortality around the world.[2] It is anticipated that one billion people worldwide have high blood pressure, and that 1.56 billion adults will have hypertension by 2025.[3] According to a review of studies carried out in Nigeria, the overall crude prevalence of hypertension in adults ranges from 2.1% to 47.2%, depending on the studied area, population sample, measuring method, and hypertension cut-off value employed.[4,5] If the trend continues, Nigeria will face economic and health issues due to high blood pressure.[4]

Hypertension is one of the main causes of death when it comes to chronic diseases.[6] As a result, end organ damage such as myocardial infarction, stroke, heart failure, and kidney failure emerge, increasing overall morbidity and mortality rates.[7] Treatment costs, co-morbidities like anxiety and depression have

been linked with hypertension, and the risk of acquiring more life-threatening diseases has a significant detrimental impact on patients' everyday activities, perhaps leading to a loss of self-confidence.[7,8] Compared to patients without chronic diseases, hypertension patients had a lower general health perception, according to the Medical Outcome Study in America.[9] Because of these factors, it is thought that people with hypertension have a lower or limited Health-Related Quality of Life (HRQoL).[6] HRQoL refers to a person's perceived well-being in the physical, mental, and social aspects of health, as well as how well they function in their daily lives.[10] Healthcare practitioners use the phrase to describe variables other than illness that affect human health and its state, such as physiological, psychological, sociological, economic, and spiritual elements.[10] Hypertensive patients have more complex healthcare needs and are more likely than normotensive patients to have a lower HRQoL.[6,11] Given the lower long-term risk of cerebrovascular morbidity and mortality, it's critical to assess hypertension's impact on HRQoL.[9]

The concept of HRQoL is relatively new in the Nigerian healthcare system. To our knowledge, no study is available describing HRQoL status among hypertensive Nigerians using a comprehensive, well-validated instrument, such as Bulpitt and Fletcher's specific questionnaire for assessing HRQoL. As a result, this unique study in Nigerian health settings aimed to evaluate hypertensive patients' HRQoL using Bulpitt and Fletcher's specific questionnaire in order to gain a clear picture of their current health status.

Materials and Methods

This hospital-based descriptive cross-sectional study included hypertensive patients who visited the general outpatient clinics of a teaching hospital in North-Eastern Nigeria. The hospital is a seven hundred-bed space capacity tertiary health facility accredited for postgraduate training in medical sciences, among other mandates are research and services. According to unpublished medical records, 900 patients with hypertension were seen throughout the three-month study period. Using a systematic random sampling with a sampling interval of three, 277 patients were enrolled in the study. The sample size was determined using the approach for determining the minimum sample size for descriptive studies with populations under 10,000 (finite population). n = (Zα/2) 2p.q.N/e2(N-1)+(Zα/2)2p.q Where n = size of the sample, Zα/2 = the value of standard variant at a given confidence level and to be worked out from table showing area under the normal curve (1.96), e = level of precision, usually set at 5%, N = population size over the study period, and p = proportion of hypertensive with blood pressure control of (35.0%) adopted from the study of medication adherence and blood pressure control amongst adults with primary hypertension attending a tertiary hospital primary care clinic in South-Eastern Nigeria.[12]

We included patients with hypertension of either sex, aged 18 and above, who had a primary diagnosis of hypertension, had granted informed consent, and had been on outpatient treatment for hypertension at the general out-patients clinic for at least six months, with at least three different clinic visits. The study excluded critically ill patients, those with an established cause of hypertension (secondary hypertension), and particular high-risk populations such as hypertensive patients with endocrine disorders (diabetes mellitus), kidney diseases, and previous adverse cardiovascular events like myocardial infarction and cerebrovascular accident. The study was approved by the ethical review committee of Abubakar Tafawa Balewa University Teaching Hospital (ATBUTH) Bauchi with approval number - 0019/2019. The study was conducted in accordance with the Helsinki Declaration, which was revised in 2013.

Data was acquired after written informed consent was obtained from the participants who attended the hospital's normal outpatient clinics. Questionnaires and patients' Clinical Report Forms (CRF) were used to gather information. There were two parts to the questionnaire: clinical and socio-demographic characteristics, and the Bulpitt and Fletcher specific questionnaire for the assessment of hypertensive patients' HRQoL. The Hanson weighing scale and the Charder height measure stadiometer were used to determine the weight and height of the participants. Weight (kg) divided by the square of height (m^2) yielded the Body Mass Index (BMI) (Kg/m^2). The blood pressure was measured with an Accoson mercury sphygmomanometer; the measuring equipment was standardized and calibrated following the manufacturer's requirements. Standard operating procedures were developed for the weighing scale, height measurement, and blood pressure monitor.

Statistical Package for Social Sciences (SPSS) version 20 was used to pool, store, and analyze data. Frequency tables were used to present the results. Qualitative variables were presented using frequency and proportions, whereas means and standard deviations were employed to describe quantitative data. The Pearson chi-square test was used to measure the significance level of the association between HRQoL and some categorical variables. The limit of significance was considered the probability error of less than 5% ($p \leq 0.05$).

Results

Socio-demographic profile of respondents

Respondents ranged in age from 20 to 90 years, with a mean age of 53.1±14.6 years. However, the majority of those who responded, 123 (44.4%), were between the ages of 40 and 59. Females comprised nearly two-thirds of the respondents, 187 (67.5%), while the majority, 183 (66.1%), were married. According to the educational level obtained, more than half, 154 (55.6%) had no formal education. Only approximately a fifth of the respondents, 53 (19.1%), were government employees, with slightly more than half, 164 (59.2%), earning less than 20,000 Naira per month (Table 1).

Clinical characteristics of respondents

One hundred and fifty-nine (57.4%) of the participants had hypertension for less than five years, with 82.7% on at most two antihypertensive drugs and 59.6% having at least one form of co-morbidity. The anthropometric characteristic revealed a mean body mass index of 27.4±6.6Kgm^2, with over a third of the respondents 102(36.8%) being overweight. The mean systolic blood pressure and diastolic blood pressure were 137.1±19.9 mmHg and 84.1±11.0 mmHg, respectively. Only 113 (40.8%) of the subjects attained optimal blood pressure control of less than 140/90mmHg (Table 2).

Assessment of Health-Related Quality of Life

According to the Bulpitt and Fletcher Specific Questionnaire for hypertension patients, the HRQoL mean scores of respondents were 0.90±0.08, which was close to the optimal value of 1, indicating that the HRQoL of the study participants was good. Using a

cut-off of one standard deviation below the mean for low quality of life, over half of the participants, 146 (52.7%), reported a good quality of life (Figure 1).

Association between socio-demographic factors and Health-Related Quality of Life of respondents (N=277)

Table 3 demonstrates that there was no statistically significant difference between HRQoL and any of the socio-demographic factors of respondents when utilizing Bulpitt and Fletcher's specific questionnaire.

Relationship between clinical variables with Health-Related Quality of Life of respondents (N=277)

Table 4 reveals that there was no statistically significant difference between HRQoL and any of the clinical variables of respondents when using the Bulpitt and Fletcher's specific questionnaire.

Discussion

The mean HRQoL ratings for hypertensive patients on the Bulpitt and Fletcher Specific Questionnaire were above 90 out of 100, indicating that the participants' HRQoL was quite satisfactory. This result is consistent with research by Gusmao *et al.,* who assessed HRQoL in hypertensives with and without complication using an identical (disease-specific) instrument.[13] This study, however, contrasts with others that employed comprehensive generic tools to assess the relationship between hypertension and quality of life and found that HRQoL among hypertensive patients was poor.[6,9,11,14] The findings of this study could be explained by the fact that hypertension has a minor impact on quality of life because it is asymptomatic and only causes long-term problems.[13] Another explanation for the disparities could be that the hypertension-specific instrument utilized in our study did not include a measure of positive well-being like enthusiasm, socialization, productivity, or job satisfaction.[15] In addition, the fact that poor cognitive performance might lower quality of life, objective assessments of cognitive function were not included in this questionnaire.[15] Furthermore, disparities in HRQoL scores could be attributable to the fact that cross-sectional studies were different in terms of primary aims, sample criteria, and questionnaires used to assess quality of life, yet hypertensive individuals had the worst quality of life.

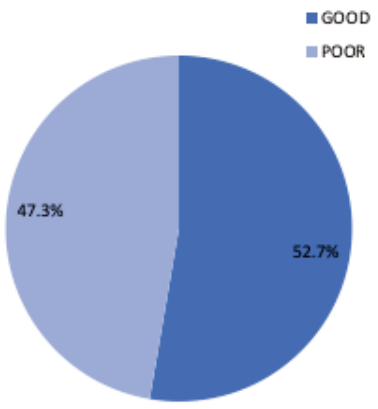

Figure 1. Assessment of Health-Related Quality of Life (HRQoL) of respondents (N=277).

The results of studies looking at the relationship between socio-demographic and clinical factors with HRQoL have been inconsistent. While some researchers imply that those characteristics may have an impact on HRQoL, others claim that they have no effect. Neither of these factors was shown to have a significant impact on HRQoL in this study.

Table 1. Socio-demographic profile of respondents (N=277).

Variables	Frequency	Percentage
Age (years)		
20-39	53	19.1
40-59	123	44.4
60-79	89	32.2
≥80	12	4.3
Gender		
Male	90	32.5
Female	187	67.5
Marital status		
Never married	34	12.3
Married	183	66.1
Divorced	7	2.5
Widowed	53	19.1
Educational level		
No formal education	154	55.6
Primary	41	14.8
Secondary	25	9.0
Tertiary	57	20.6
Occupation		
Civil servant	53	19.1
Self-employed	87	31.4
Unemployed	137	49.5
Average monthly income		
Less than 20,000	164	59.2
20,000-100,000	93	33.6
More than 100,000	20	7.2

Table 2. Clinical characteristics of respondents (N=277).

Clinical variables	Frequency	Percentage
Hypertension duration		
<5 years	159	57.4
6-10 years	61	22.0
>10 years	57	20.6
Comorbidities		
Present	165	59.6
Absent	112	40.4
Number of drugs		
At most two	229	82.7
More than two	48	17.3
Body Mass Index (kg/m^2)		27.4±6.62*
Underweight	14	5.1
Normal	94	33.9
Overweight	102	36.8
Obesity	67	24.2
Systolic blood pressure (mmHg)		137.1±19.9*
Diastolic blood pressure (mmHg)		84.1±11.0*
Blood pressure level		
Controlled	113	40.8
Uncontrolled	164	59.2

*Mean ± Standard Deviation.

Participants under the age of 60 had a higher quality of life than those over 60. When comparing middle-aged hypertension patients to elderly patients, researchers have observed that middle-aged hypertensive patients had a better health-related quality of life.[16,17] This was due to the observation that health dangers may occur as a result of physiological and functional changes as people age, making them more prone to chronic diseases that might impact their HRQoL and compromise their physical health.[18] Also, as people get older, they are more prone to develop multi-morbidity, which has a far higher impact on HRQoL than the additive effect of individual illnesses.[19] Even though most middle-aged respondents had a better quality of life in this study, the association between age and HRQoL was not statistically significant.

The study discovered that more females than males had a good HRQoL, albeit the difference in HRQoL was not statistically significant. Jufar *et al*.[20] found that gender has no effect on HRQoL in hypertension patients. This discovery could be due to the fact that women, particularly older women, prefer to spend time with their children and grandchildren in our environment. They psychologically support them, which has a positive effect on their health. Several studies, on the other hand, found that men's HRQoL was good in all domains, including physical and psychological ones.[14,16,18,21]

Individuals who were married had a higher score and, as a result, a better quality of life than those who were not currently married, albeit this difference was not statistically significant. Previous research in Nepal,[21] China,[16] and Brazil[17] had produced similar results. This study, however, contrasts with one conducted in South-Western Nigeria, which found that single male hypertension patients with no symptoms had a higher quality of life score.[14]

Table 3. Association between socio-demographic factors and Health-Related Quality of Life (HRQoL).

Socio-demographic factors	Health-Related quality of life		χ^2	p
	Poor (%)	Good (%)		
Age (years)			0.095	0.758
Less than 60	82 (46.6)	94 (53.4)		
60 and above	49 (48.5)	52 (51.5)		
Gender			0.136	0.712
Male	44 (48.9)	46 (51.1)		
Female	87 (46.5)	100 (53.5)		
Marital status			0.022	0.881
Currently married	76 (46.9)	86 (53.1)		
Not currently married	55 (47.8)	60 (52.2)		
Educational level			0.080	0.777
Literate	57 (46.3)	66 (53.7)		
Illiterate	74(48.1)	80 (51.9)		
Occupation			0.036	0.849
Actively working	64 (46.7)	73 (53.3)		
Not actively working	67 (47.9)	73 (52.1)		
Average monthly income (Naira)			1.182	0.277
Less than 20,000	82 (50.0)	82 (50.0)		
20,000 and above	49 (43.4)	64 (56.6)		

Table 4. Association between clinical variables and Health-Related Quality of Life (HRQoL).

Clinical variables	Health-Related quality of life		χ^2	p
	Poor (%)	Good (%)		
Hypertension duration			0.339	0.560
<10 years	106 (48.2)	114 (51.8)		
≥10 years	25 (43.9)	32 (56.1)		
Comorbidity			0.113	0.737
Present	80 (48.5)	85 (51.5)		
Absent	52 (46.4)	60 (53.6)		
Number of drugs			1.384	0.239
One or two	112 (48.9)	117 (51.1)		
More than two	19 (39.6)	29 (60.4)		
Body mass index			0.0001	0.985
<25 Kgm^2	51 (47.2)	57 (52.8)		
≥25 Kgm^2	80 (47.3)	89 (52.7)		
Blood pressure			0.354	0.550
Controlled	51 (45.1)	62 (54.9)		
Uncontrolled	80 (48.8)	84 (51.2)		
Less than 20,000	82 (50.0)	82 (50.0)		
20,000 and above	49 (43.4)	64 (56.6)		

While the exact mechanisms by which marriage delivers health benefits are unknown, reports show that married persons live longer and are healthier.[22] Married couples who live with their partners are more likely to have all forms of support, which unmarried persons sometimes lack. The spouse normally motivates the partner to do everything they can to keep their blood pressure under control. Due to a lack of emotional support within the family and community, psychosocial health problems and feelings of loneliness are more common among persons who live alone.[6]

Education is frequently used as a measure for socio-economic class, and it is strongly linked to a wide range of health consequences.[23] This study showed that the literate had a greater HRQoL than the illiterate, though the difference was not statistically significant; this was in line with the results of Ogunlana *et al.,*[9] Saleem *et al.,*[6] and Ghimire *et al.,*[21] who all found that the better educated had an improved HRQoL. Stronger-educated persons are more likely to be well-informed, have superior critical thinking skills and judgment, adopt healthy lifestyle behaviours and preventive measures, and use health-related information to attain better health outcomes and HRQoL.[24] Furthermore, it is a well-known fact that people with higher levels of education are less likely to have chronic disease problems or to be in a "managed" state because they frequently have greater job opportunities, higher wages, and better socio-economic status.[9]

Participants in this study who were working and receiving a monthly salary of more than 20,000 naira reported a higher quality of life than those who were jobless and earning less than 20,000 naira, though this was not statistically significant. This study was in line with previous research, which found that unemployment and low socio-economic level were linked to a lower HRQoL.[16,21] It's possible that family income and economic status have a direct impact on physical and mental health.[25] Economic vulnerabilities have an impact on health and HRQoL in terms of food availability, securing housing, transportation, and other daily necessities.[26] Employed people were more likely to have health insurance and the financial resources to care for their health, improving their overall quality of life.[25] As one's income rises, so does one's desire to pay for better health.[25]

Furthermore, respondents who did not have co-morbidity had a higher quality of life score; however, this was not statistically significant. Monica *et al.,*[27] observed similar findings in a population study. This could be explained by the fact that co-morbidities are linked to higher healthcare demands, a higher risk of disability, a higher risk of financial stress, and overall social and economic disadvantage.[28] Co-morbidities have been demonstrated to reduce the impact of medication and lower HRQoL in hypertension patients.[27] All of these are linked to a reduced quality of life.

Those who had a normal body weight had higher scores and a better quality of life; however, the difference was not significant. According to a recent study, overweight and obese people have a reduced quality of life as their BMI increases.[29] Obese or overweight people are more prone to have self-image issues, low self-esteem, poor health, depression, employment-related, and other forms of social discrimination, all of which can lead to psychological stress and a reduced quality of life.[30]

Moreover, persons who had hypertension for longer periods and were taking more than two drugs had better HRQoL. Several studies agreed with this fact. [9,17] However, Jufar *et al.*,[19] and Ghimire *et al.,*[21] found that people who discovered their diagnosis three years prior and used prescribed medication had an excellent quality of life. This could be because antihypertensive drugs assist hypertensive individuals in controlling their blood pressure, and better blood pressure control can lead to improved HRQoL.

The following were the limitations of this study: being a cross-sectional study, there was no opportunity to observe participants for a long period, which could have yielded better data. Also, the presence of other concurrent medical conditions may have affected patients' health-related quality of life. However, an attempt was made to address this by studying the impact of co-morbidity on outcome measures.

Conclusions

This study concludes that both socio-demographic and clinical characteristics of hypertensive patients have little effect on HRQoL, with participants scoring near the optimal score on the Bulpitt and Fletcher's specific questionnaire. Despite the lack of association between HRQoL and the studied variables, there is a need to recommend measurements of HRQoL among hypertensive patients at both primary care levels and specialist clinics. This could facilitate a better assessment of hypertension burden and improve the quality of services provided.

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