Quality of Life of Hypertensive Patients and Comparison of two Instruments of HRQOL Measure

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Abstract

Background: Measuring health-related quality of life (QOL) helps evaluating the efficiency of a treatment and identifies problems with major impact on the patient's QOL. However, these measures are safer if assessed by generic and specific instruments together, where it is necessary to check for compatibility between these and avoid repetitions and contradictions between the domains.

Objective: To describe the quality of life of hypertensive patients and to evaluate the compatibility of a specific instrument (MINICHAL) and a generic instrument (SF-36).

Methods: One hundred adult hypertensive under outpatient care were interviewed. The mean HRQOL as measured by MINICHAL was 6.64 (SD 6.04) in mental status and average of 5.03 (SD 4.11) in the state of somatic manifestations. The means for the instrument SF-36 were in ranking order: limitation due to physical aspects 47.3 (SD 42.9), vitality 57.4 (SD 19.7), limitation due to emotional aspects 58 (SD 44.7), functional capacity 58.7 (SD 27.8), pain 60.4 (SD 26.3), general health condition 60.7 (SD 22.7), mental health 66.8 (SD 22.1) and social aspects 78 (SD 26.1).

Results: The MINICHAL significantly correlated ($p < 0.001$) with the SF-36 in all domains.

Conclusion: The MINICHAL proved to be a useful tool in the assessment of HRQOL in patients with hypertension. (Arq Bras Cardiol 2012;98(5):442-451)

Keywords: Hypertension; outpatients; quality of life; questionnaires.

Introduction

Arterial Hypertension (AH) is the single most important risk factor for cardiovascular disease (CVD), the leading cause of mortality worldwide. According to the World Health Organization (WHO)[1], in Brazil, out of the total deaths, 20% to 50% are caused by diseases whose cause is associated with AH. Its prevalence, based on population surveys, ranges from 22.3% to 43.9% of the population over 18 years[2].

Studies show that the side effects of AH treatment are associated with lower rates of acceptance to follow the treatment and drug treatment abandonment, and may affect the quality of life (QOL) of these patients.

The WHO[3] conceptualizes quality of life as "an individual's perception of their position in life, in the context of culture and system of values in which they live and in relation to their goals, expectations, standards and concerns."

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QOL serves as an indicator in clinical trials for specific diseases, assesses the physical and psychosocial impact that the disorders may have on affected individuals, allowing a better knowledge about the patient and their adaptation to their unhealthy condition.

There is a variety of instruments to assess Health-Related Quality of Life (HRQOL). These allow us to evaluate the impact of a chronic illness on the patient's life and offer a type of treatment outcome based on the individual's own perception of their general health condition[4].

The SF-36 (The Medical Outcomes Study 36-Item Short-Form Health Survey)[5-7] is a tool widely used to reflect the QOL of patients in a wide variety of populations, including aspects such as function, dysfunction and emotional and physical well-being. Specific instruments assess health concepts specific to a disease or an intervention. As for hypertension, there is a validated instrument in Brazil: Mini-Questionnaire of Quality of Life in Hypertension (MINICHAL)[8,9]. The simultaneous use of both instruments (generic and specific) has been used as a strategy to measure HRQOL[4].

The objective of this study is to identify and measure the QOL of hypertensive patients in outpatient treatment, using two instruments, one generic and one specific, and check agreement between them.

Methods

We conducted a cross-sectional observational study in hypertensive patients followed up at the Hypertension League, at the Hospital Universitário Presidente Dutra from March to May 2009.

In this study, patients were included regardless of gender, as long as they were 18 years old. The choice of patients was for convenience. All of them were asked whether they would agree to participate in the study. The study excluded patients with a psychiatric diagnosis of mental illness, patients with problems associated with alcohol or other drugs and pregnant or breastfeeding women.

One hundred and nine hypertensive patients were invited to participate in the study, nine of whom refused to participate, leaving a total of 100 participants, 61 women and 39 men.

We analyzed demographic data (age, sex, years of education, marital status and ethnicity, socioeconomic status) and clinical data (systolic and diastolic pressure, time of diagnosis of hypertension, comorbidities and cardiovascular risk factors such as diabetes, dyslipidemia, history of myocardial infarction, history of stroke, depression, obesity and renal disease), which were collected through structured interviews and the patients reported their comorbidities. In doubtful cases, the data were confirmed in the patient's medical record. The measure of weight in the ideal range was obtained by Body Mass Index (BMI) based on the height and weight of patients. The classification employed was the one issued by the WHO[10]. Blood pressure was measured three consecutive times for each patient, with a minimum interval of 3 minutes between measurements. We used the digital automatic device OMRON HEM - 722C (Omron Healthcare Inc., Kyoto, Japan), validated by the protocols of the Association for the Advancement of Medical Instrumentation and those of the British Hypertension Society for international research[11].

For the analyses, BP values were stratified according to the stages of hypertension, according to the Brazilian guidelines on hypertension in controlled patients (BP <140/90 mmHg), stage 1 hypertension (SBP 140-159 and DBP 90 - 99); stage 2 (SBP 160-179 and DBP 100-109) and stage 3 (SBP ≥ 180 and DBP ≥ 110)[12].

Knowledge about the disease was assessed by 10 questions, with answers such as yes/no, standardized by Strelec et al[13] and used in national publications[8,14]. The knowledge was considered satisfactory for those patients who obtained scores ≥ 7, and unsatisfactory for those who obtained scores < 7[8].

The QOL assessment instruments were administered in a single interview for each patient.

Questionnaires to measure health-related quality of life

For assessment of HRQOL, we used a specific instrument for assessing QOL in hypertension (MINICHAL) and a generic instrument for assessing QOL (SF-36), both validated in Brazil. The MINICHAL was developed in Spain in 2001 and contains 16 items. Ten items are grouped in the domain mental status, and six items in the domain somatic manifestations. The domain mental state includes questions 1-9 and has a maximum score of 27 points. The domain somatic manifestations includes questions 10 to 16, with a maximum score of 21 points[15]. Both the original version in Spanish and the Brazilian version include a final question on the overall impact of hypertension on the QOL of the patient.

In the interviews, the patients were asked to respond based on the last seven days. The score scale is the Likert scale with four possible answers (0 = absolutely not; 1 = yes, a little; 2 = yes, very; 3 = yes, very much). The points range from 0 (best level of health) to 30 (worst level of health) for the domain mental state and for the domain somatic manifestations range from 0 (best level of health) to 18 (worst level of health)[16].

The MINICHAL was originally designed to be self-administered; however, in this study, due to the low education of patients, the instrument was administered through structured interviews.

Finally, we used the generic questionnaire SF-36 to assess qualitative and quantitative aspects of patients' QOL[6]. This instrument is a multidimensional questionnaire consisting of 36 items, comprehending 8 scales: functional capacity (10 items), physical aspects (4 items), pain (two items), general health (5 items), vitality (4 items), social aspects (2 items), emotional aspects (3 items), mental health (5 items) and a question designed to assess changes in health during the period of one year and, although it is not used to score any of the eight previous scales, it is of paramount importance for understanding the patient's illness.

For the evaluation of results, each question is score. The scores are then transformed into a scale of 0 to 100, where zero corresponds to the worst health condition and 100 the best health condition, considering each domain separately. Purposely, there is not a single value that summarizes the entire assessment, resulting in a better or worse general state of health in order to, on an average value, avoid error and avoid any failures to identify or even overestimate the real problems related to the patient's health[17].

As this study intends to correlate with the SF-36 with the MINICHAL questionnaire, it is necessary to describe the SF-36 into two components. Ware et al[18] proposed a classification of the SF-36 domains into two major components: the physical component involves functional capacity, physical aspects, pain and general health; and the mental component involves mental health, emotional aspects, social aspects and vitality. The domains general health and vitality can also be indirectly related to another component. This separation is intended to display, in a general way, these two major components that may be differently involved in different diseases.

A descriptive analysis was initially performed in the statistical analysis (mean, standard deviation, maximum, minimum, quartiles, median) of the numeric variables, as well as frequency tables and charts. Subsequently, multiple regression was performed between the dependent variables SBP and DBP and the independent variables age, sex, time of diagnosis, comorbidities, risk factors and number of medications. Analysis of variance (ANOVA) was made between SBP and DBP, and when there were significant differences ($p < 0.05$), the Turkey test was performed to compare the means in pairs. The Pearson correlation was performed between

the MINICHAL and SF-36 domains. The level of statistical significance was 5%.

The research study was approved by the Ethics Committee in Research of the Hospital Universitário da Universidade Federal do Maranhão (HUUFMA). It was conducted as required by Resolution CNS n º 196/96, where the individuals involved signed an informed consent (IC), thereby ensuring their participation in the study.

Results

We interviewed 100 hypertensive outpatients, 39 men and 61 women. Table 1 shows the sociodemographic and clinical profile of these patients.

The average age of patients was 61.7 years (SD 12.4), ranging from 20 to 82 years, where 59% of the population of this study were elderly (≥ 60 years). Educational level was on average 5.4 years of formal study.

As to the time of diagnosis of hypertension, the average was 9.39 years (SD 7.32). SBP averaged 143.43 mmHg (SD 24.1) and DBP, 83.62 mmHg (SD 12.6). With regard to BP control, 46% of patients have their BP under control. Regarding the stage of BP, 30% of patients were in stage I; 17% in stage II; and 7% in stage III of the disease.

As for the variable Knowledge of Hypertension, Table 2 gives the correct answers for each question with their frequencies.

Table 3 shows the domains and the scores of SF-36 and MINICHAL.

There was no significant difference between BP levels and domains measuring QOL by the instruments SF-36 and MINICHAL.

Concerning gender, significant differences ($p < 0.05$) were observed in the domain mental state of MINICHAL and in the domains functional capacity, pain, limitation due to emotional aspects and mental health of SF-36 (Table 4).

Among the comorbidities/CV risk factors: obesity, depression, history of myocardial infarction, history of stroke, renal failure in conservative treatment, family history of CVD, diabetes, dyslipidemia and smoking, those which had a significant difference ($p < 0.05$) with QOL were: depression, obesity and family history of CVD. The data are shown in Tables 5, 6 and 7.

MINICHAL and SF-36 significantly correlated with each other ($p < 0.001$) in all domains (table 8).

Discussion

Assessing QOL is of essence, as this concept serves as an indicator in clinical trials for specific diseases, assesses the physical and psychosocial impact that the disorders may have on affected individuals, allowing a better knowledge about the patient and their adaptation to their unhealthy condition. Roca-Cusachs et al[19] reported that hypertensive patients had a significant reduction in QOL compared to normotensive patients.

In this study, 46% of patients have their BP under control. SBP averaged 143.4 mmHg and DBP, 83.6 mmHg. In Brazil,

Table 1 - Sociodemographic and clinical characteristics of patients

Variable	N (%)
Age	
20 - 39 years	5 (5.0)
40 - 59 years	36 (36.0)
60 - 79 years	53 (53.0)
79>	6 (6.0)
Sex	
Female	61 (61.0)
Male	39 (39.0)
Years of study	
Illiterate	13 (13.0)
1 - 4 years	37 (37.0)
5 – 8 years	30 (30.0)
9 - 12 years	14 (14.0)
> 12 years	6 (6.0)
Marital status	
Single	15 (15.0)
Married/stable union	46 (46.0)
Separated/divorced	16 (16.0)
Widower	23 (23.0)
Color	
White	19 (19.0)
Nonwhite	81 (81.0)
No. of people in the house	
1 – 4	69 (69.0)
5 – 8	28 (28.0)
9 – 12	3 (3.0)
Cleaner or housekeeper	
Yes	5 (5.0)
No	95 (95.0)
House	
Own house	91 (91.0)
Rented house	9(9.0)
Income	
Without income	9 (9.0)
<1 salary	9 (9.0)
1-2 salaries	58 (58.0)
> 2 salaries	26 (26.0)
Occupation	
Retired	33 (33.0)
Homemaker	33 (33.0)
Employed	33 (33.0)
Unemployed	1 (1.0)

Continuation	
CV Risk Factors	
Dyslipidemia	58 (58.0)
Family History of CVD	43 (43.0)
Diabetes	23 (23.0)
Obesity	23 (23.0)
Previous CVA	19 (19.0)
Depression	15 (15.0)
Renal failure under conservative treatment	11(11.0)
Smoking	9 (9.0)
Previous AMI	4 (4.0)

prevalence studies report that patients with controlled BP under antihypertensive treatment present a variation rate of 20% to 33%[2].

It was observed that the sample, despite a low level of education, had satisfactory knowledge about the disease. Most of them got seven or more questions right in the specific questionnaire to evaluate their knowledge of the disease. A similar result was found in another study conducted in the South of Brazil, which also had a sample with low educational level, which suggests that knowledge of the disease is not affected by low educational level[20]. In our case, because it is an Academic League of Hypertension, there is a particular concern in providing the patients with lots of information about the disease.

Regarding the assessment of QOL through the generic questionnaire SF-36, the domains had the following results:

Functional Capacity (FC). As to the scores, the average value for CF was 58.7 (SD 27.8). In the study by Silqueira[7], the average for that domain was 68.0. In a study by Lima[21], the average the FC domain was 75.0. Comparing our study with the others mentioned, it is clear that our study has a worse QOL in the domain CF compared to these studies. These results can be attributed to a high prevalence of comorbidities in our sample.

Limitation for Physical Aspects (FA). This domain was the one with the lowest score, revealing greater difficulties faced by the patients due to limitations in FA. The mean value was 47.2 (SD 42.9). Comparing this result with other studies, the one with an approximate result was by Cavalcante[5], with a mean value of 55.7. In the studies by Gusmão and Pierin[22], Silqueira[7] and Magnobosco[23], the average was 72. The presence of comorbidities also negatively influences patients' physical limitations[7], which may explain the low score achieved in this domain, since our prevalence of comorbidities is similar to that obtained by Cavalcante[5], 89% and 87%, respectively. The study by Silqueira[7] excluded patients with current or previous history of associated diseases.

Pain. The mean value of this domain was 60.4 (SD 26.3). In other studies, the average of results were similar, ranging from 56.64[24] to 69.0.[7] Although SAH is a chronic disease, it is considered silent and asymptomatic, because pain is not a symptom that accompanies hypertensive patients. Black and Matassarin Jacobs[24] state that pain usually appears when the patient has other diseases or some other cardiovascular complication such as acute myocardial infarction. Thus, the high prevalence of comorbidities and cardiovascular risk factors in our sample may also have been an aggravating factor for a low score in the pain domain.

General Health (GH). The mean score was found to be 60.7 (SD 22.7). In the study by Silqueira[7], the average value found was 77.8; in the one by Gusmão and Pierin[22], the average was 73.0; and in the one by Cavalcante[5], the score was 72.0. In the study by Brito et al[25], the GH had the lowest score, 53.5. The authors believe that this result probably occurred as a result of clinical manifestations related to the etiology of hypertension and the treatment administered. According to these authors, the patients perceived hypertension as a serious situation; this idea is confirmed in our study.

Vitality (VIT). This domain had the second lowest score, with an average of 57.3 (SD 19.7). In the study by Lima[21], the domain vitality had the lowest score, averaging 56.0. A low score indicates some impairment in the vitality of hypertensive patients in relation to mood and willingness to cope with

Table 2 - Knowledge of systemic arterial hypertension

Question	N
1 Is high blood pressure a disease for life?	76
2 Is it true that those who have high blood pressure most often do not feel anything different?	53
3 Is pressure high when it is greater than or equal to 14 by 9?	81
4 Can high blood pressure cause problems for the heart, brain and kidneys?	100
5 Is treatment for high blood pressure for life?	92
6 Can high blood pressure be treated without drugs?	25
7 Does regular physical exercise help control high blood pressure?	94
8 For those who are obese, can weight loss help control high blood pressure?	97
9 Does decreasing food salt help control high blood pressure?	99
10 Does decreasing nervousness help control blood pressure?	95

n total - 100 n for right answers.*

Table 3 - Results of minimum, maximum, average values and standard deviation for each domain of SF-36 and MINICHAL

Domains	Average	Deviation	Minimum	Maximum
SF-36				
Physical aspects	47.3	42.9	0	100
Vitality	57.4	19.7	15	100
Emotional Aspects	58	44.7	0	100
Functional Capacity	58.7	27.8	5	100
Pain	60.4	26.3	0	100
General health	60.7	22.7	0	97
Mental health	66.88	22.1	4	100
Social Aspects	78	26.1	0	100
MINICHAL				
Mental State	6.6	6	0	27
Somatic manifestation	5.0	4.1	0	16

Table 4 - Quality of life and sex

		MINICHAL			Generic Questionnaire SF-36								
Sex		**EM**	**Somatic**	**QOL**	**FC**	**Health C.**	**PA**	**Pain**	**General Health**	**VIT**	**SA**	**EA**	**MH**
M	N	39	39	39	39	39	39	39	39	39	39	39	39
	Average	4.6	4.2	0.7	66.9	2.9	52.6	67.2	62.4	61.3	82.4	70.1	72.3
	SD	3.6	3.1	0.9	24.3	10.8	42.5	22.3	18.1	17.9	20.8	41.7	18.2
F	N	61	61	61	61	61	61	61	61	61	61	61	61
	Average	8.0	5.6	0.9	53.4	2.7	43.9	56.1	59.7	54.8	75.0	50.8	63.4
	SD	6.9	4.6	1.0	28.8	1.1	43.2	27.9	25.4	20.5	28.8	45.3	23.8
Total	N	100	100	100	100	100	100	100	100	100	100	100	100
	Average	6.6	5.0	0.8	58.7	2.8	47.3	60.4	60.7	57.4	77.9	58.3	66.9
	SD	6.0	4.1	1.0	27.8	1.0	42.9	26.3	22.7	19.7	26.1	44.7	22.1
	ANOVA	0.006	0.099	0.361	0.017	0.230	0.325	0.039	0.563	0.108	0.169	0.035	0.049

daily situations[7]. In the study by Gusmão and Pierin[22], the result was similar to this study, with an average of 56.0. In the study by Cavalcante[5], this domain received an average of 68.8. The study that received the lowest score was the one by Souza[14], averaging 45.1. In the study by Brito et al[25] we obtained the mean value of 63.3. The authors also suggest that living with hypertension interferes with physical condition, subject to the comments related to fatigue related to age, disease duration and others.

Social Aspects (SA). Among others, this domain had the highest score, with a mean value of 77.8 (SD 26.1), which is consistent with other studies in which this domain also had the highest score, with values ranging from 69.3 to 77.0[5,21,25]. The influence of HA in this aspect may be due to the need to change your lifestyle, including eating habits, which often involves absence from family gatherings to avoid inadequate food intake. Thus, chronic health condition may lead to various losses in social relationships, leisure activities and pleasure, leading the patient to an impairment in their QOL[25].

Emotional Aspects (EA). The average in this domain was 58.3 (SD 44.7), indicating impairment in the patients' QOL. According to Maciel[26], another aspect that is necessary to emphasize is that doctors and patients often label the hypertensive disease as "emotional" and "nervousness-related", which are reductionist explanations of the

Table 5 – Quality of life and family history of CVD

		MINICHAL			GENERIC QUESTIONNAIRE SF-36								
Family History of CVD		MS	Somatic	QOL	FC	Health	PA	Pain	General Health	VIT	SA	EA	MH
No	N	57	57	57	57	57	57	57	57	57	57	57	57
	Average	6.0	4.0	0.7	59.4	2.8	56.1	63.1	65.1	58.9	82.4	70.7	68.5
	SD	5.6	3.4	0.9	28.5	1.0	42.9	25.9	20.3	19.4	24.4	41.4	20.7
Yes	N	43	43	43	43	43	43	43	43	43	43	43	43
	Average	7.5	6.4	1.0	57.8	2.7	35.5	57.0	54.9	55.3	71.8	41.9	64.7
	SD	6.6	4.6	1.1	27.2	1.0	40.5	26.8	24.6	20.2	27.3	44.1	24.0
Total	N	100	100	100	100	100	100	100	100	100	100	100	100
	Average	6.6	5.0	0.8	58.7	2.8	47.3	60.4	60.7	57.4	77.9	58.3	66.9
	SD	6.0	4.1	1.0	27.8	1.0	42.9	26.3	22.7	19.7	26.1	44.7	22.1
	ANOVA	0.225	0.002	0.193	0.778	0.798	0.016	0.252	0.026	0.376	0.043	0.001	0.405

Table 6 – Quality of life and depression

		MINICHAL			GENERIC QUESTIONNAIRE SF-36								
Depression		MS	Somatic	QOL	FC	Health	PA	Pain	General Health	VIT	SA	EA	MH
No	N	85	85	85	85	85	85	85	85	85	85	85	85
	Average	5.6	4.4	0.7	61.5	2.7	50.6	61.4	63.8	60.4	81.3	61.5	69.6
	SD	5.2	3.9	0.8	27.0	1.0	43.5	25.3	20.4	18.3	22.6	44.3	20.2
Yes	N	15	15	15	15	15	15	15	15	15	15	15	15
	Average	12.8	8.5	1.5	43.0	2.9	28.3	54.9	43.2	40.3	58.3	40.0	51.5
	SD	6.8	3.8	1.4	28.1	1.0	35.2	32.1	27.8	19.5	35.9	44.0	26.6
Total	N	100	100	100	100	100	100	100	100	100	100	100	100
	Average	6.6	5.0	0.8	58.7	2.8	47.3	60.4	60.7	57.4	77.9	58.3	66.9
	SD	6.0	4.1	1.0	27.8	1.0	42.9	26.3	22.7	19.7	26.1	44.7	22.1
	ANOVA	0.0001	0.0001	0.002	0.017	0.619	0.064	0.382	0.001	0.0001	0.001	0.085	0.003

disease. Hence, patients seem to be unwilling to take on the responsibility for controlling the pressure, believing that their emotional state depends on others. This will probably lead to impairment in the QOL.

Mental Health (MH). As to the scores found, the average value was 66.8 (SD 22.1). Hypertension, due to its chronicity, may interfere directly with various aspects of the patient's life. Self-esteem can be undermined leading to negative feelings such as depression and anxiety[27]. Just the fact that the individual being labeled as hypertensive may lead them to manifestations of anxiety and insecurity. Elucidation of the disease is a key point in reducing these manifestations[28].

Regarding the assessment of QOL through the specific questionnaire MINICHAL, the results of domains were the following:

Mental State (MS). As to the scores found, the average value was 6.6 (SD 6). Compared to the results found in the study by Schulz et al[15] an average of 5.3, shows a lower QOL

Table 7 – Quality of life and obesity

		MINICHAL			GENERIC QUESTIONNAIRE SF-36								
Obesity		MS	Somatic	QOL	FC	Health	PA	Pain	General Health	VIT	SA	EA	MH
No	N	77	77	77	77	77	77	77	77	77	77	77	77
	Average	5.7	4.3	0.7	60.8	2.7	51.3	62.4	61.9	59.7	80.8	60.6	69.5
	SD	5.1	3.7	0.9	26.8	1.0	43.5	24.6	20.4	17.9	22.1	43.8	19.5
Yes	N	23	23	23	23	23	23	23	23	23	23	23	23
	Average	9.9	7.5	1.3	51.7	2.8	33.7	54.0	57.0	49.6	67.9	50.7	58.3
	SD	7.8	4.5	1.2	30.5	1.1	38.9	31.2	29.6	23.7	35.3	48.1	28.2
Total	N	100	100	100	100	100	100	100	100	100	100	100	100
	Average	7	5	1	59	3	47	60	61	57	78	58	67
	SD	6	4	1	28	1	43	26	23	20	26	45	22
	ANOVA	0.003	0.001	0.015	0.172	0.673	0.084	0.185	0.367	0.030	0.037	0.356	0.033

Table 8 – Pearson correlation between the domains of MINICHAL and SF-36 questionnaires

	MS	Somatic	QOL	FC	Health	PA	Pain	General Health	VIT
MS									
Somatic	.677**								
FC	-.494**	-.405**							
PA	-.410**	-.480**	.474**						
Pain	-.439**	-.469**	.578**	.475**					
Health	-.463**	-.476**	.294**	.321**	.401**				
VIT	-.566**	-.468**	.437**	.445**	.480**	.511**			
AS	-.650**	-.457**	.428**	.436**	.475**	.394**	.475**		
EA	-.475**	-.525**	.406**	.531**	.294**	.322**	.287**	.448**	
MH	-.629**	-.506**	.354**	.341**	.450**	.554**	.725**	.502**	.360**

*$p < 0.05$ **$p < 0.001$.

in our patients. In the validation study by MINICHAL in Spain[16], the average score was 6.8, similar to the one found in our study.

Somatic State (SE). The mean value was 5.0 (SD 4.1). Other studies found values of 1.8[19] and 2.8[16], showing that, in this study, patients have a greater impairment in QOL.

There was no correlation between levels of BP and QOL assessed by the instruments SF-36 and MINICHAL, which is consistent with other studies conducted in Brazil[8,23]. However, these results differ from a Chinese population-based study[29], which found that in hypertensive patients with controlled blood pressure levels, QOL was better than that of those with uncontrolled blood pressure levels.

Concerning gender, significant differences were observed in the domain mental state of MINICHAL and in the domains functional capacity, pain, limitation due to emotional aspects and mental health of SF-36, revealing a worse QOL in the female sex. This result was also observed in the original study of MINICHAL, in which females had worse scores in the domain mental state[16], as well as in the study of translation and validation of MINICHAL into Portuguese (Brazil)[15]. A study consistent with this one was conducted by Liberman[30]. By using the SF-36, it showed that male patients had higher values, with significant differences in almost all domains of this instrument.

Women more often report feelings of dissatisfaction and frustration, which influences the QOL, especially in the psychological domain[31]. Furthermore, men are generally better able to tolerate chronic diseases and remain emotionally[32].

Among the comorbidities and cardiovascular risk factors evaluated, those that were associated with a lower QOL were depression, obesity and family history of CVD. Individuals diagnosed with depression showed a worse QOL assessment in both the SF-36 (in functional capacity, general health, vitality, social aspects and mental health) and in the two domains of MINICHAL. This result is similar to the study by Melchiors[8] where depression was the only variable that significantly influenced the outcome of HRQOL in all domains of both instruments employed (MINICHAL and WHOQOL-bref). This reinforces the strong impact of depression on the HRQOL of patients, as observed in the Epidemiological Follow-up Study (NHEFS) of the first National Health and Nutrition Examination Survey (NHANES I)[33].

As for obesity, the patients had a poorer QOL assessment in both the SF-36 (in the domains vitality, social aspects and mental health) and in the two MINICHAL domains. In the study by Magnobosco[23], obesity and diabetes appear to influence the HRQOL of participants. Those participants who did not have any of these comorbidities had higher average scores in all SF-36 domains. As to obesity alone, only the domains of physical aspects, general health and emotional aspects showed statistically significant results. In the study by Melchiors[8], obese patients had an impaired QOL in the following domains: mental and somatic state (MINICHAL) and physical domain (WHOQOL-bref). Some studies show that obese patients have a worse perception of QOL[34] and it was found that improvements in patients' diet and weight loss were related to better QOL[35].

Individuals with a family history of CVD had a worse assessment in SF-36 in the domain physical aspects, general health, social aspects and emotional aspects. In MINICHAL, the somatic state was the only one affected. In the study by Melchiors[8], individuals with family history of CVD showed significant difference for the psychological domain in the generic instrument WHOQOL-bref.

As to the analysis of concurrent validity for MINICHAL, through correlation coefficients, we observe that MINICHAL had a significant correlation with SF-36 in all domains. There was correlation between mental state (MINICHAL) and mental component (mental health, emotional aspects, social aspects and vitality) of the SF-36. The same correlation was also observed in somatic manifestations (MINICHAL) and the physical component (functional capacity, physical aspects, pain and general health) of SF-36. MINICHAL proved to be a useful instrument for assessing QOL in hypertensive patients, whose results significantly correlated with the generic instrument SF-36.

Study limitations

It should be emphasized that the results obtained in this study especially relate to patients who are part of a League of Hypertension of a University Hospital, where they are probably better informed and clinically assisted, which may have contributed, for example, to a greater frequency of patients with controlled BP and a high level of knowledge of the disease. However, despite this better care, the patients showed an impaired QOL, which is consistent with other studies that evaluated QOL in hypertensive patients.

Conclusion

MINICHAL significantly correlated with SF-36 in all domains, proving to be a useful tool for the assessment of QOL in hypertensive patients, where these assessment measures may be useful in helping to choose the most appropriate treatment for hypertensive patients and population-based studies aimed at evaluating the QOL of this population.

Potential Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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Study Association

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