



PROFILE OF HEALTH AND QUALITY OF LIFE ASSESMENT OF HYPERTENSIVE PATIENTS BY THE SPECIFIC INSTRUMENT MINICHAL-BRAZIL

PERFIL DE SAÚDE E AVALIAÇÃO DA QUALIDADE DE VIDA DE HIPERTENSOS PELO INSTRUMENTO ESPECÍFICO MINICHAL-BRASIL

PERFIL DE SALUD Y EVALUACIÓN DE LA CALIDAD DE VIDA DE HIPERTENSOS POR EL INSTRUMENTO ESPECÍFICO MINICHAL-BRASIL

Fabiana Coriolano Ribeiro Cavalcanti¹, Eduardo Tavares Gomes², Eugênia Velludo Veiga³, Simone Maria Muniz da Silva Bezerra⁴

RESUMO

Objetivo: avaliar o nível de qualidade de vida dos portadores de hipertensão arterial. **Método:** estudo observacional transversal e quantitativo de 242 hipertensos adultos acompanhados nas Unidades de Estratégias de Saúde da Família no município de Recife-PE, com um instrumento específico - MINICHAL - Brasil, no período de julho a setembro de 2012. Os dados foram transcritos para meio eletrônico com auxílio do programa estatístico *Epi-info* (versão 3.5.2). O projeto de pesquisa foi aprovado pelo Comitê de Ética em Pesquisa, protocolo nº061/2013. **Resultados:** observou-se que a maioria da clientela hipertensa era do sexo feminino, idosa, com ensino fundamental, em sobrepeso ou obesidade e manutenção dos níveis pressóricos em limítrofe. A qualidade de vida não apresentou desempenho satisfatório, sem diferença entre os gêneros, níveis pressóricos ou peso corporal, sendo melhor em pacientes com <60anos ($p < 0,001$). **Descritores:** Hipertensão Arterial; Qualidade de Vida; Programa de Saúde da Família; Enfermagem.

ABSTRACT

Objective: to evaluate the quality of life of patients with arterial hypertension. **Method:** transversal and observational and quantitative study of 242hypertensive adults accompanied in Family Health Strategies Units in the municipality of Recife-PE, with a specific instrument-MINICHAL-Brazil, in the period from July to September 2012. The data were transcribed to electronic media with statistical program help *Epi-info* (version 3.5.2). The research project has been approved by the Research Ethics Committee, Protocol No. 061/2013. **Results:** it was observed that most of the clientele was hypertensive was elderly female, with elementary school, in overweight or obesity and maintenance of blood pressure in borderline. The quality of life did not provide satisfactory performance, with no difference between genders, blood pressure or body weight, being better in patients with < 60anos ($p < 0.001$). **Descriptors:** Hypertension; Quality of life; Family Health Program; Nursing.

RESUMEN

Objetivo: evaluar el nivel de calidad de vida de los portadores de hipertensión arterial. **Método:** estudio observacional transversal y cuantitativo de 242 hipertensos adultos acompañados en las Unidades de Estrategias de Salud de la Familia en el municipio de Recife-PE, con un instrumento específico - MINICHAL - Brasil, en el período de julio a setiembre de 2012. Los datos fueron transcritos para medio electrónico con auxilio del programa estadístico *Epi-info* (versión 3.5.2). El proyecto de investigación fue aprobado por el Comité de Ética en Investigación, protocolo nº061/2013. **Resultados:** se observó que la mayoría de la clientela hipertensa era del sexo femenino, anciana, con enseñanza primaria, en sobrepeso u obesidad y mantenimiento de los niveles de presión en el límite. La calidad de vida no presentó desempeño satisfactorio, sin diferencia entre los géneros, niveles de presión o peso corporal, siendo mejor en pacientes con <60anos ($p < 0,001$). **Descritores:** Hipertensión Arterial; Calidad de Vida; Programa de Salud de la Familia; Enfermería.

¹Nurse, Master student, Postgraduate Program in Nursing UPE/UEPB, University of Pernambuco. Recife (PE), Brazil. E-mail: simonemunizm2@gmail.com; ²Nurse, Specialist in Advanced Life Support Nursing, Student of Nursing Specialization Program in the Residence mode Cardiology Emergency Unit of Pernambuco - PROCAPE. Recife (PE), Brasil. E-mail: edutgs@hotmail.com; ³Nurse, Doctorate Professor in Nursing, Nursing School of Ribeirão Preto, University of São Paulo, WHO Collaborating Center for Nursing Research Development. Ribeirão Preto (SP), Brazil. E-mail: evveiga@eerp.usp.br; ⁴Nurse, Professor, Postgraduate Program in Nursing/University of Pernambuco/PPGENF/UPE/UEPB, Federal University of Pernambuco/UFPE. Recife (PE), Brazil. E-mail: simonemunizm2@gmail.com

INTRODUCTION

Hypertension is a disease of broad incidence in Brazil, reaching about 30%. It is known the increased prevalence with age and the correlation with other diseases such as diabetes and kidney disease. Hypertension is the major modifiable risk factor for cardiovascular and brain diseases, being strongly associated to the involvement by strokes and acute myocardial infarction.¹⁻²

Living with the disease and the need for changes in the lifestyle of patients brings direct impact on quality of life.²⁻⁴ This impact must be considered in the follow-up of hypertensive patients, including on non-pharmacological therapy. A national study showed that patients who knew they were carriers of hypertension showed lower levels of quality of life, while the deterioration of health status was not observed in patients who have not been diagnosed, suggesting greater treatment effect than hypertension.⁵

For the evaluation of the impact of non-pharmacological treatments as well as new drugs and associations, it is used instruments for evaluating the quality of life. To this end, it was developed in Spain in 2001, the quality of life questionnaire in hypertension (MINICHAL-BRAZIL), already translated and validated in Brazil. The MINICHAL-BRAZIL presents aspects of reliability and validity appropriate to its use as an instrument for measuring the quality of life in adult patients with hypertension.^{4,6}

The MINICHAL contains 16 items, being ten items are grouped in the mental state domain and six items in somatic manifestations domain. The mental state domain includes the issues of 1 to 9 and has maximum score of 27 points. The somatic manifestations domain includes the issues of 10 to 16, with maximum score of 21 points.^{4,6} Both the original in Spanish version as the Brazilian include one last question regarding the overall impact HAS on patient's QOL. In the interview with the patients were asked to respond on the basis of the last seven days. The scoring scale is Likert type with four possible answers (0 = no, absolutely; 1 = Yes, a little; 2 = Yes, enough; 3 = Yes, a lot). The points range from 0 (highest level of health) to 27 (worst health level) to the mental state dimension and for somatic manifestations dimension the range is from 0 (highest level of health) to 21 (worst health level).⁴

OBJECTIVE

- To assess the level of quality of life of patients with arterial hypertension.

MÉTHOD

Observational transversal and quantitative study conducted with 242 adult hypertensive accompanied in the Family Health Units of the municipality of Recife-PE, with a specific instrument (Mini-Questionnaire of Quality of Life in Arterial Hipertension-MINICHAL), in the period from July to September 2012. The choice of patients was for convenience, being questioned to all, the agreement to participate in the research and signature of free informed consent (TFCC). Patients with SAH secondary were excluded of co-morbidities of impact on QOL (terminal chronic renal failure and neoplasia) as well as those with impaired understanding and verbal communication.

Socio-demographic data were analyzed (age, sex, skin color, years of studies, marital status) and clinical (systolic and diastolic pressure, HAS diagnostic time, body mass index BMI, co-morbidities and clinical characteristics of patient hypertensive). In cases of doubt the data were confirmed in the chart of record set by HIPERDIA. The measurement of ideal weight was obtained by body mass index (BMI), calculated from the values of height and weight.

Blood pressure was measured in the left arm (BE) and right arm (BD), being considered the greatest value after consecutive measures for each patient. Automatic device was used brand digital OMRON HEM-722C (OMRON Healthcare Inc., Kyoto, Japan), validated by the protocols of the Association for the Advancement of Medical Instrumentation and British Hypertesion Society for international searches⁷ For analyses, the values of the BP were stratified according to the stages of HAS, following the Brazilian hypertension guidelines, at controlled (BP < 140/90 mmHg), stage 1 hypertension (PAS entre 140-159 e PAD entre 90-99); stage 2 (SBP entre 160-179 e DBP entre 100-109) and stage 3 (SBP > 180 and DBP > 110).

The data obtained were transcribed to electronic media with statistical program help *Epi-info* (version 3.5.2). After the transcription of the data to the worksheet, exploratory analysis was carried out for recognition of variables and correcting any errors and/or inconsistency of data collection and typing. Data analysis consisted in the descriptive statistics of the variables

(frequencies, average, median, standard deviation, minimum and maximum values), the non-parametric test of Mann-Whitney test for comparison of the averages of the numerical variables of dichotomy form, seen not dealing with paired samples and significance level 0.05 (or 5%).

The research project was submitted and approved by the Research Ethics Committee of the EERP-USP, nº 061/2013, as required by Resolution nº 196/CNS 96, where the subjects

involved signed the TCLE, ensuring their participation in the research.

RESULTS

The sample consisted of 242 patients in which 72 men (29.8%) with mean age $\pm$ 66.68 10.04 and 170 women (70.2%) aged in 65.95 ± 10.33 . The patients were distributed in their majority above 60 years (83.1%), 201; non-blanks (182; 75.2%), single or divorced (52.5%), 127; elementary school complete (86; 35.5%).

Table 1: Distribution of patients as age, gender, color, marital status and education. Recife-PE, 2013

Variável	Average±DP	Median
Age	66,17±10,23	65
Age - women	65,95±10,33	65
Age - men	66,68±10,04	66
	n	%
Older than 60 years old	41	16,9
Up to 60 years old	201	83,1
Gender		
Women	170	70,2
Men	72	29,8
Color		
White	60	24,8
Non-white	182	75,2
Marital Status		
Single / Divorced	127	52,5
Married / Stable Union	99	40,9
Widower	16	6,6
Education		
Cannot read/write	18	7,4
Incomplet elementar school	71	29,3
Completer elementar school	86	35,5
Incomplet high school	37	15,3
Completer high school	16	6,6
Higher education	13	5,4

In addition to the presence of hypertension is common to all individuals, the following Comorbidities, were found referred to by patients and confronted in the chart: diabetes (88; 36,51%); Dyslipidemia (59; 24,48%); cardiovascular

disease(41; 17,01%), smoking (31; 12,86%), depression (22; 9,13%), nephropathy(18; 7,47%), osteo-articular disease (7; 2,9%) and other (14; 5.81%).

Table 2. Distribution of patients regarding the comorbidities found. Recife-PE, 2013

Comorbidity	n	%
Diabetes	88	36,51
Dyslipidemia	59	24,48
Cardiovascular disease	41	17,01
Smoking	31	12,86
Depression	22	9,13
Nephropathy	18	7,47
Osteo-articular disease	7	2,90
Other	14	5,81

Blood pressure measures showed no significant difference between them, classifying the sample overall as borderline, even considering a slight gauging higher in men ($p > 0.05$). Whereas the patients were diagnosed with and under treatment and monitoring, it can be affirmed that the measurements reflect therapeutic scheme ineffective for most patients (123 patients, 50.9%), behavior observed in both gender. (table 3)

The body mass index BMI was measured by a parameter evaluated without statistical

difference among men (26.31 ± 3.7 ; 26.16 kg/m^2) and women (27.29 ± 4.96 ; 26.67 Kg/m^2), being the sample average (4.63 ± 26.99 ; $26, 44 \text{ kg/m}^2$) found in overweight range. Sample distribution by classes was not significant when parametrized by gender, revealing that the sample presented greater fraction of people in overweight (99; 40,9%) than normal weight (80; 33.1%). (table 3)

The time of diagnosis of hypertension in the sample was $10.62 \pm 10, 31$ years, with median of 8 years, being slightly larger in women ($11.21 \pm 11, 35$ years, and median 9

years) compared to men (9.22 ± 7 , 19 years, 8 median). (table 3) Only 5.8% had received the diagnosis less than 1 year, with the majority diagnosed with between 1 and 10 years (62.8%). The proportion of patients with a diagnosis for more than 10 years was higher in women (35.9%), although not statistically significant difference in the distribution by gender in relation to the time of diagnosis. (table 4)

Table 3. Characterization of hypertensive patients about body mass index, blood pressure measurements and time of diagnosis of hypertension. Recife-PE, 2013

Variable	Sample		Men (n=72)		Women (n=170)		P*
	Average (dp)	Median	Average (dp)	Median	Average (dp)	median	
BMI	26,99±4,63	26,44	26,31±3,7	26,16	27,29±4,96	26,67	0,34
Time of diagnosis SHA	10,62±10,31	8	9,22±7,19	8	11,21±11,35	9	0,45
1a. Measure SBP	137,84±21,37	133	137,83±18,93	136	137,85±22,38	131	0,77
1a. Measure DBP	84,58±11,55	80	86,22±12,93	82	83,88±10,88	80	0,3
2a. Measure SBP	137,64±21,3	131	138,57±19,69	132	137,24±21,99	130	0,56
2a. Measure DBP	84,10±11,15	80	85,72±12,52	81	83,42±10,48	80	0,22

*Mann-Whitney Test

Table 4. Distribution of hypertensive patients about body mass index, blood pressure levels and time of diagnosis of hypertension. Recife-PE, 2013

BMI	n	%	n	%	n	%	p*
Low weight (<18,5)	9	3,7	4	5,6	5	2,9	0,21
Normal (18,5 - 24,9)	80	33,1	20	27,8	60	35,3	Ref
Overweight (25,0 - 29,9)	99	40,9	36	50	63	37,1	0,10
Obesity (>30,0)	54	22,3	12	16,7	42	24,7	0,71
Pressure Level							
Normal	65	26,9	20	27,8	45	26,5	Ref
Bordering	54	22,3	16	22,2	38	22,4	0,89
HAS Grau 1	73	30,2	21	29,2	52	30,6	0,79
HAS Grau 2	36	14,9	11	15,3	25	14,7	0,98
HAS Grau 3	14	5,8	4	5,6	10	5,9	0,87
Diagnosis time							p**
<1	14	5,8	2	2,8	12	7,1	
1 to 5 years	74	30,6	25	34,7	49	28,8	0,12
6 to 10 years	78	32,2	30	41,7	48	28,2	0,07
>10 years	76	31,4	15	20,8	61	35,9	0,48

*Chi-square test **Fisher's exact test

Analysis of quality of life revealed sample average for mental state domain 14.02 ± 5.98 , median 13, and for the domain somatic manifestations 11.17 ± 4.65 , median 11. Among the genders, the results among women for mental state (14.0 ± 6.17 ; 13 median) were slightly better, being observed statistically significant difference with regard to somatic manifestations, with better outcome among men (10.25 ± 4.02 , median 10, $p = 0.02$). Patients with less than 60 years old showed better results in both domains (EM: $9,85 \pm 5,82$, median 10, $p < 0,001$; MS: $8,63 \pm 5,52$, median 8, $p < 0,01$) when compared to the elderly (EM: $14,87 \pm 5,66$, median 14, $p < 0,001$; MS: $11,69 \pm 4,28$, median 12, $p < 0,01$). The results for eutrophic patients in relation to body mass (EM: $13,66 \pm 5,99$, median 13; MS: $10,88 \pm 4,55$, median 11) although better than the patients in overweight and obesity, were not significantly. The distribution of the results as a function of pressure level did not obey the ranking of classes of blood pressure, showing no statistical difference between the same even when compared between sexes. (table 5).

Table 5: Quality of life among patients with hypertension assessed by MINICHAL on the basis of gender, age, body mass, pressure level. Recife-PE, 2013

MINICHAL								
	EM				MS			
	Average±DP	Median	Min-Max	p	Average±DP	Median	Min-Max	P*
Total (n=242)	14,02±5,98	13	0,0-33		11,17±4,65	11	0,0-25,0	
Gender								
Men (n=72)	14,07±5,56	14	2,0-26,0	0,7	10,25±4,02	10	0,0-20,0	0,02
women (n=170)	14,0±6,17	13	0,0-33,0		11,56±4,84	12	0,0-25,0	
Age								
> 60 years old (n=201)	14,87±5,66	14	0,0-33,0	<0,001	11,69±4,28	12	0,0-25,0	<0,001
Up to 60 years old (n=41)	9,85±5,82	10	0,0-23,0		8,63±5,52	8	0,0-21,0	
Body mass								
Eutrophic (n=80)	13,66±5,99	13	0,0-33,0	0,31	10,88±4,55	11	0,0-25,0	0,89
Overweight (n=99)	14,32±6,04	14	1,0-32,0		11,24±4,65	11	1,0-25,0	
Obesity (n=54)	13,76±6,06	14	1,0-24,0		11,31±4,94	12	0,0-22,0	
Pressure Level								
BP Normal (n=65)	14,27±6,18	14	0,0-31,0	0,59	10,84±4,46	11	0,0-25,0	0,07
BP Bordering (n=54)	13,59±4,88	13	3,0-24,0		11,96±3,83	11	4,0-20,0	
SHA - Degree 1 (n=73)	14,61±6,26	14	0,0-33,0		10,82±4,99	11	0,0-25,0	
SHA - Degree 2 (n=36)	14,03±6,94	14	1,0-27,0	0,98	11,85±5,21	12	2,0-22,0	0,19
HAS - Degree 3 (n=14)	11,57±5,05	11	1,0-21,0	0,11	9,64±5,07	9	7,0-19,0	0,55

*Mann-Whitney Test

DISCUSSION

The predominance of the sample was the elderly, female gender, non-white, single or divorced, with elementary school. In addition, there was concomitance of other high cardiovascular risk factors like diabetes, Dyslipidemia and cardiovascular disease. National guidelines referred to predominance of the female gender from the fifth decade, increased incidence with age and with non-white races.¹ It is worth mentioning that studies with populations under 50 years show a higher incidence of hypertension in male^{1,8-9} Brazilian research on the incidence of hypertension showed that the fact of being single and having higher education were considered as protective factors for the development of the disease.⁸ It is of great importance to this profile presentation of the disease in public health, in order to facilitate the planning of actions.⁸⁻¹¹

The blood pressure control was considered by many measurements in normal blood pressure or borderline, representing 49.2% of the sample, with no significant difference between genders. Other authors also point out that less than half of patients under treatment are controlled by decreasing the tension control between men and with increasing age.¹¹⁻¹⁴ Tensional levels found in the measurements showed values better than found in other national surveys, including untreated patients.^{11,15} Studies indicate that coverage of the Family Health Program reflect in better diagnosis, control, and treatment of hypertension.¹³⁻¹⁶ An American study conducted in twelve cities with more than 200 thousand inhabitants, assessed that the best quality of care dispensed the hypertensive population has kept better control of blood pressure levels, making an impact on quality of life.¹⁷

Excess body mass evaluated by BMI is a risk factor for cardiovascular diseases considered in various publications. The classification of hypertension in overweight has also been observed in other studies linking the increase in weight, high waist, sodium intake and the inadequacy of dietary habits with the increase of blood pressure.^{1,8,12-5,18} In another sample, the stratum overweight presented until almost three times greater risk compared to normal weight.⁸ The overweight has been appointed with strong correlation with adherence to antihypertensive treatment.^{9,18} Modifications in lifestyle when incorporated by patients result in reduction of blood pressure and complications arising out of these aggravations.¹⁹

The time of diagnosis of hypertension in the sample was slightly larger in women, as well as in other studies, probably related to increased demand for health services women.¹¹ It has not been evaluated, however, influential in the genre's clinical-physiological development of hypertension. A national publication, evaluating 130 with hypertension, presented similar diagnostic time values.²⁰ Other national study found, there was no significant correlation between time of diagnosis and education, suggesting that the coverage of the Family Health Program and access to services minimize the impact of the low level of education.¹⁴

The negative relationship between hypertension and life quality has been studied in the field of Health Sciences, aiming to clarify the phenomenon and the preponderant factors for better socializing among patients and nosological entity.

Using the non-specific questionnaire of the World Health Organization, the SF-36, the low quality of life scores has been demonstrated between hypertensive, which occur often below in relation to non-hypertensive population.^{5,3,21} When it evaluates the MINICHAL questionnaire, developed and validated for the hypertensive population, the lack of pressure level control, the excess of medicines and other clinical conditions relate to worse results in terms of quality life.

A study of international review shows that auto-referred quality of life for hypertensive patients appears more compromised when associated with other comorbidities such as diabetes and kidney disease, especially in the areas related to physical-somatic state.²² Other research Japanese most ancient showed even before the development of instruments to measure the quality of life, the relationship of patients with services and health professionals is crucial to counter chronic diseases and the control of hypertension.²³ It is good to note that the older studies were related to quality of care, precisely when the public health programs have incorporated international protocols on attention to hypertension, while in the present, the new concern is given to the quality of life of the population that lives with the disease.

The analysis of the results of the sample to the mental state domain (14.02 ± 5.98 , median 13), and for the domain somatic manifestations (11.17 ± 4.65 , median 11) showed slightly elevated. The highest results for elderly can be related to long-term co-existence with the disease and its consequences and co-morbidities, and also the polypharmacy and the impact of using

antihypertensive drug, independent of the class used, as pointed out the results of the international trials, despite pressure control provided by isolated drugs bring increase in quality of life.²⁴⁻⁵

In relation to the assessment of QOL by specific questionnaire MINICHAL, the mental state in Emergency Units evaluates the patient's social relations, if he feels exhausted and powerless, his ability to make decisions and initiate new things, his ability to perform usual activities of each day, that is, it evaluates an individual's psychological state. The results showed that Mental State (EM) had average of 14.02 ± 5.98 , demonstrating that high blood pressure by its chronicity, can interfere directly in the quality of life. When compared to results found in another study, an average of 5.3 demonstrates a lower QOL in our patients. In the validation study of the MINICHAL in Spain, the average 6.8 was obtained, other than found in this study.⁶ The distribution of values of the stratification of domains on the pressure level does not obeyed the ranking of classes of blood pressure, not showing statistical difference between the same even when compared between sexes. Another national study also did not find in both domains significant variation or linear as a function of the pressure rating of the patients, noting only greater value in somatic manifestations for hypertension in grade III, but without statistical significance.²⁸

CONCLUSION

The present study has not evaluated the incidence of hypertension in a population nor the knowledge of the condition of disease, as it is a sample already diagnosed. In addition, important factors for the health status and treatment adherence were not investigated, such as physical inactivity, smoking and alcoholism and family history, considering escape the search scope. It should investigate the factors that interfere with treatment adherence and its relationship with blood pressure control, as well as the main interventions that can improve the quality of life of patients.

The findings of this study showed evidence of practicality and feasibility/acceptability of the Brazilian version of the MINICHAL. With these instruments it is possible to better understand the disease, propose and evaluate better forms of treatment and new forms of intervention.

REFERENCES

1. Sociedade Brasileira de Cardiologia, Sociedade Brasileira de Hipertensão, Sociedade Brasileira de Nefrologia. VI Diretrizes brasileiras de hipertensão. Arq Bras Cardiol [Internet]. 2010 [cited 2013 June 24];95(1-supl.1):1-51. Available from: http://publicacoes.cardiol.br/consenso/2010/Diretriz_hipertensao_associados.pdf
2. Lieberman A. Aspectos epidemiológicos e o impacto clínico da hipertensão no indivíduo idoso. Rev Bras Hipertens [Internet]. 2007 [cited 2013 June 24]; 14(1):17-20. Available from: <http://departamentos.cardiol.br/dha/revista/14-1/05-aspectos-epidemiologicos.pdf>
3. Carvalho MV, Siqueira LB, Sousa ALL, Jardim PCBV. The Influence of Hypertension on Quality of Life. Arq Bras Cardiol [Internet]. 2013 [cited 2013 June 24];100(2):164-174. Available from: <http://www.scielo.br/pdf/abc/v100n2/v100n2a09.pdf>
4. Badia C, Roca-Cusachs A, Dalfó A, Gascón G, Abellán J, Lahoz R, et al. Validation of the short form of the Spanish Hypertension Quality of Life Questionnaire (MINICHAL). Clin Ther [Internet]. 2002 [cited 2013 June 24]; 24(12):2137-54. Available from: <http://www.scielo.br/pdf/abc/v90n2/a10v90n2.pdf>
5. Brito DM, Araujo TL, Galvão MT, Moreira TM, Lopes MV. Qualidade de e percepção da doença entre portadores de hipertensão arterial. Cad Saúde Pública [Internet]. 2008 [cited 2013 June 24];24(4):933-40. Available from: <http://www.scielo.br/pdf/csp/v24n4/25.pdf>
6. Schulz RB, Rossignoli P, Correr CJ, Fernández-Llimós F, De toni PM. Validation of the short form of spanish hypertension quality of life questionnaire (MINICHAL) for portuguese (Brasil). Arq Bras Cardiol [Internet]. 2007 [cited 2013 June 24];90(2):139-44. Available from: <http://www.scielo.br/pdf/abc/v90n2/a10v90n2.pdf>
7. Coleman A, Freeman P, Steel S, Shennan A. Validation of the Omron 705it (HEM-759-E) oscillometric blood pressure monitoring device according to the British Hypertension Society protocol. Blood Press Monit [Internet]. 2006 [cited 2013 June 24];11(1):27-32. Available from: http://www.peroxfarma.com/files/docs/public/Validacion%20publicada%20705IT%20BHS%20AAMI_0.pdf

8. Jardim PCBV, Gondim MRP, Monego ET, Moreira HG, Vitorino PVO, Souza WKS, Scala LCN. Hipertensão arterial e alguns fatores de risco em uma capital brasileira. *Arq Bras Cardiol* [Internet]. 2007 [cited 2013 June 24]; 88(4): 452-457. Available from: <http://www.scielo.br/pdf/abc/v88n4/15.pdf>
9. Demoner MS, Ramos ERP, Pereira ER. Factores asociados con la adhesión al tratamiento antihipertensivo en unidad de salud. *Acta paul enferm* [Internet]. 2012 [cited 2013 June 24]; 25(n.spe1):27-34. Available from: http://www.scielo.br/pdf/ape/v25nspe1/pt_05.pdf
10. Forte AN, Lopes MVO. Análise dos fatores que interferem no controle da pressão arterial de pessoas acompanhadas numa unidade básica de atenção a saúde da família. *Rev texto contexto*. 2004 [cited 2013 June 24]; 13(1): 26-34.
11. Nogueira D, Faerstein E, Coeli CM, Chor D, Lopes CS, Werneck GL. Reconhecimento, tratamento e controle da hipertensão arterial: Estudo Pró-Saúde, Brasil. *Rev Panam Salud Pública* [Internet]. 2010 [cited 2013 June 24]; 27(2):103-9. Available from: <http://www.scielosp.org/pdf/rpsp/v27n2/a03v27n2.pdf>
12. Oliveira SMJV, Santos JLF, Lebrão ML, Duarte YAO, Pierin AMG. Hipertensão arterial referida em mulheres idosas: prevalência e fatores associados. *Texto Contexto Enferm* [Internet]. 2008 [cited 2013 June 24]; 17(2):241-9. Available from: <http://www.ceatenf.ufc.br/Artigos/28.pdf>
13. Rosario TM, Scala LCNS, Franca GVA, Pereira MRG, Jardim PCBV. Prevalencia, controle e tratamento da hipertensao arterial sistemica em Nobres, MT. *Arq Bras Card*. 2009 [cited 2013 June 24]; 93(6):672-8. Available from: <http://www.scielo.br/pdf/abc/v93n6/18.pdf>
14. Zaitune MPA, Barros MBA, César CLG, Carandinal, Goldbaum M. Hipertensão arterial em idosos: prevalência, fatores associados e práticas de controle no município de Campinas, São Paulo, Brasil. *Cad Saúde Pública* [Internet]. 2006 [cited 2013 June 24]; 22(2):285-94. Available from: <http://www.scielosp.org/pdf/csp/v22n2/06.pdf>
15. Rosini N, Machado MJ, Xavier HT. Estudo da prevalência e multiplicidade de fatores de risco cardiovascular em hipertensos do município de Brusque, SC. *Arq Bras Cardiol* [Internet]. 2006 [cited 2013 June 24]; 86(3):219-22. Available from: <http://www.scielo.br/pdf/abc/v86n3/a10v86n3.pdf>
16. Gomes TJO, Silva MVR, Santos AA. Controle da pressão arterial em pacientes atendidos pelo programa Hiperdia em uma Unidade de Saúde da Família. *Rev Bras Hipertens* [Internet]. 2010 [cited 2013 June 24]; 17(3):132-139. Available from: <http://departamentos.cardiol.br/dha/revista/17-3/03-controle.pdf>
17. Asch SM, McGlynn EA, Hiatt L, Adams J, Hicks J, DeCristofaro A, Chen R, LaPuerta P, Kerr EA. Quality of care for hypertension in the United States. *BMC Cardiovasc Disord* [Internet]. 2005 [cited 2013 June 24]; 5(1):1. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC546215/>
18. Feijão AM, Gadelha FV, Bezerra AA, Oliveira AM, Silva MS, Lima JW. Prevalência de excesso de peso e hipertensão arterial, em população urbana de baixa renda. *Arq Bras Cardiol* [Internet]. 2005 [cited 2013 June 24]; 84(1):29-33. Available from: <http://www.scielo.br/pdf/abc/v84n1/23002.pdf>
19. Roca-Cusachs A, Dalfó A, Badia X, Aristegui I, Roset M. Relation between clinical and therapeutic variables and quality of life in hypertension. *J Hypertens* [Internet]. 2001 [cited 2013 June 24]; 19(10):1913-9. Available from: http://journals.lww.com/jhypertension/Abstract/2001/10000/Relation_between_clinical_and_therapeutic.28.aspx
20. Strelec MA, Pierin AM, Mion D Jr. The influence of patient's consciousness regarding high blood pressure and patient's attitude in face of disease controlling medicine intake. *Arq Bras Cardiol* [Internet]. 2003 [cited 2013 June 24]; 81(4):349-54. Available from: <http://publicacoes.cardiol.br/abc/2003/8104/default2.asp?artigo=/abc/2003/8104/8104002i.pdf>
21. Gusmão JL, Pierin AM. Instrumento de avaliação da qualidade de vida para hipertensos de Bulpitt e Fletcher. *Rev Esc Enferm USP* [Internet]. 2009 [cited 2013 June 24]; 43(Esp):1034-43. Available from: <http://www.scielo.br/pdf/reeusp/v43nspe/a07v43ns.pdf>
22. Soni KR, Porter AC, Lash JP, Unruh ML. Health-related quality of life in hypertension, chronic kidney disease and coexistent chronic health conditions. *Adv Chronic Kidney Dis* [Internet]. 2010 [cited 2013 June 24]; 17(4): 117-26. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2901238/>

23. Yoshida K, Matsuoka H, Omae T, Fujii J. Patient-hospital relationship and quality of life in elderly patients with hypertension. *Hypertens Res* [Internet]. 1995 [cited 2013 June 24];18(1):77-83. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/7584915>
24. Fogari R, Zoppi A. Effect of antihypertensive agents on quality of life in the elderly. *Drugs Aging* [Internet]. 2004 [cited 2013 June 24];21(6):377-93. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/15084140>
25. Youssef RM, Moubarak II, Kamel MI. Factors affecting the quality of life of hypertensive patients. *East Mediterr Health J* [Internet]. 2005 [cited 2013 June 24]; 11(1-2):109-18. Abstract available from: <http://www.ncbi.nlm.nih.gov/pubmed/16532679>
26. Grimm RH Jr, Grandits GA, Cutler JA, Stewart AL, McDonald RH, Svendsen K, et al. Relationships of quality-of-life measures to long-term lifestyle and drug treatment in the treatment of mild hypertension study. *Arch Intern Med* [Internet]. 1997 [cited 2013 June 24]; 157(6):638-48. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/9080918>
27. Lima MT, Bucher JSNF, Lima JWO. A hipertensão arterial sob o olhar de uma população carente: estudo exploratório a partir dos conhecimentos, atitudes e práticas. *Cad saúde publica Cad* [Internet]. 2004 [cited 2013 June 24];20(4):1079-87. Available from: <http://www.scielo.org/pdf/csp/v20n4/23.pdf>
28. Melchior AC, Correr CJ, Pontarolo R, Santos FO, Souza RA. Quality of life in hypertensive patients and concurrent validity of Minichal-Brazil. *Arq Bras Cardiol* [Internet]. 2010 [cited 2013 June 24]; 94(3):337-44. Available from: <http://www.scielo.br/pdf/abc/v94n3/13.pdf>

Submission: 2013/04/27

Accepted: 2013/06/29

Publishing: 2012/01/01

Corresponding Address

Simone Maria Muniz da Silva Bezerra
Rua Teles Junior, 155 / Ap. 301 / Rosarinho
CEP: 52040-050 – Recife (PE), Brasil