ORIGINAL ARTICLE
Revista de Enfermagem do Centro-Oeste Mineiro
2021; 11/4166
DOI: http://dx.doi.org/10.19175/recom.v11i0.4166
www.ufsj.edu.br/recom

Analysis of the association between therapeutic membership and health literacy in hypertensive patients

Análise da associação entre adesão terapêutica e letramento em saúde em hipertensos

Análisis de la asociación entre adherencia terapéutica y alfabetización de salud en hipertensos

ABSTRACT

Objective: To analyze the association between treatment adherence and functional health literacy in hypertensive patients. **Methods:** A cross-sectional, descriptive study, carried out in primary health care, with 242 hypertensive patients. In the data collection, the Questionnaire on adherence to the treatment of arterial hypertension and the Morisky Medication Adherence Scale were used, both on therapeutic adherence and the Short Assessment of Health Literacy for Portuguese-Speaking Adults on health literacy. For descriptive and inferential analysis, the IBM SPSS® software was used, with a statistical significance of 5%. **Results:** The levels of adherence to the questionnaires were different and health literacy was inadequate, with no significant association. **Conclusion:** Functional health literacy has shown some influence on adherence, even without a significant association, and should be considered in promoting adherence and reducing risks to hypertensive patients in primary health care.
Descriptors: Hypertension; Health Literacy; Treatment Adherence and Compliance; Health Behavior.

RESUMO

Objetivo: Analisar a associação entre adesão ao tratamento e letramento funcional em saúde em hipertensos. **Métodos:** Estudo transversal, descritivo, realizado na atenção primária em saúde, com 242 hipertensos. Na coleta de dados, foram utilizados o Questionário de adesão ao tratamento da hipertensão arterial e o *Morisky Medication Adherence Scale* ambos sobre adesão terapêutica e o *Short Assessment of Health Literacy for Portuguese-Speaking Adults* sobre letramento em saúde. Para a análise descritiva e inferencial, foi usado o *software* IBM SPSS®, com significância estatística de 5%. **Resultados:** Os níveis de adesão dos questionários foram diferentes e o letramento em saúde inadequado, sem associação significativa. **Conclusão:** O letramento funcional em saúde demonstrou alguma influência na adesão, mesmo sem associação significativa, devendo ser considerada na promoção da adesão e na redução de riscos a hipertensos na atenção primária à saúde.
Descritores: Hipertensão; Letramento em Saúde; Cooperação e Adesão ao Tratamento; Comportamentos Relacionados com a Saúde.

RESUMEN

Objetivo: Analizar la asociación entre la adherencia al tratamiento y la alfabetización funcional de salud en hipertensos. **Métodos:** Estudio descriptivo transversal, realizado en atención primaria de salud, con 242 hipertensos. En la recogida de datos se utilizó el Cuestionario de adherencia al tratamiento de la hipertensión arterial y la Escala de adherencia a la medicación de Morisky, sobre adherencia terapéutica y la evaluación corta de alfabetización en salud. Para el análisis descriptivo e inferencial se utilizó el software IBM SPSS®, con significancia estadística 5%. **Resultados:** Los niveles de adherencia a los cuestionarios fueron diferentes y la alfabetización en salud fue inadecuada, sin asociación significativa. **Conclusión**: La alfabetización en salud funcional ha mostrado cierta influencia en la adherencia, incluso sin una asociación significativa, y debe considerarse para promover la adherencia y reducir los riesgos para los pacientes hipertensos en la atención primaria de salud.
Descriptores: Hipertensión; Alfabetización en Salud; Cumplimiento y Adherencia al Tratamiento; Conductas Relacionadas con la Salud.

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How to cite this article:

Girão AC, Moreira TMM, Silva JR, et al. Analysis of the association between therapeutic membership and health literacy in hypertensive patients. Revista de Enfermagem do Centro-Oeste Miniero. 2021;11:e4166. [Access_____]; Available in:_____. DOI: http://dx.doi.org/10.19175/recom.v11i0.4166

INTRODUCTION

Systemic arterial hypertension (SAH) is highly prevalent in developing countries. The symptomatology of its initial phase, the lack of population information, and the difficulties in accessing health services contribute to its low control[1].

Low adherence to treatment harms the care of people with SAH because it increases social costs, work absenteeism, health treatment leaves, and disability pensions[2].

The average adherence to the treatment of chronic diseases such as SAH, in developed countries, is 50%, and it is lower in developing countries[3]. Furthermore, therapeutic adherence to the treatment of SAH is multifactorial and a challenge for health professionals, reiterating the relevance of developing studies on the daily lives of these patients and successful strategies applicable to them[4].

The therapeutic approach includes non-pharmacological and antihypertensive measures to control blood pressure (BP), target organ protection, and cardiovascular and renal outcomes. Non-pharmacological actions are often discontinued due to a lack of understanding of information during consultations[5] and a deficit in Functional Health Literacy (FHL), generating difficulties in care, especially in chronic diseases [6].

The ability of hypertensive patients to adhere to treatment permeates their level of health literacy, as the ability to understand information about their treatment is highly significant for maintaining health and preventing health problems. Studies show that literacy contributes to adherence to medication use, blood pressure control, physical activity, and reduced mortality[7-8].

In this context, nurses stand out in health education, and understanding the level of health literacy of people with chronic illness is essential to support the systematization of nursing care. The insertion of the nursing diagnosis “Disposition for improved health literacy” in NANDA International in 2016 included, through the clinical judgment of the individual's motivation to increase health literacy, greater specificity on this issue in the Nursing Process and outline interventions that improve literacy and, consequently, reduce health risks and improve quality of life by promoting self-care and greater adherence to SAH treatment[9-10]

Therefore, the FHL is a relevant concept, especially in aspects involving the population's health-disease process and nursing care, in the field of health promotion, enabling people with hypertension to take an active stance on their health issues, including the ability to change their health condition, family and community[9].

Thus, knowledge of the association between adherence to antihypertensive treatment and functional health literacy could direct nursing care towards health promotion in primary health care services. Therefore, this study aimed to analyze the association between treatment adherence and functional health literacy in hypertensive patients.

METHODS

This is a cross-sectional study, in a Primary Health Care Unit (PHC) in Fortaleza-Ceará, with hypertensive patients registered and routinely monitored for consultations. The service offers computerized care and electronic medical records, a pharmacy stocked with drugs for primary care, a daily collection of laboratory tests, dental care with an x-ray room and air-conditioned environments. The study was approved by the Research Ethics Committee (*CEP*) of the State University of Ceará, under opinion number 3,438,816 and followed the guidelines of Resolution 466/2012 of the National Health Council, which concerns research with human beings[11]. After clarification on the content of the research and confidentiality of identities, participants were asked to sign the Informed Consent Form (ICT).

Data collection took place through a primary source directly with the patients, applying questionnaires validated in the country, from Monday to Friday, in the morning and afternoon shifts, according to the availability of three trained researchers. Among the clinical data, the measurement of blood pressure was performed using the auscultatory technique with a SOLIDOR® adult aneroid sphygmomanometer by the nursing assistant professional at the unit.

The population was 1500 hypertensive patients registered at the unit. In calculating the sample for the finite population[12], a prevalence of adherence of 25% and an error of 5% were adopted, resulting in 242 hypertensive individuals. A significance of 5% ($p<0.05$) was considered.

We adopted the following criteria for inclusion in the sample: diagnosed with SAH, registered at the unit, aged >18 years old, able to read and write, in prescribed antihypertensive

treatment (pharmacological or not), and living in the urban area of the city. Exclusion criteria were: a) deaf/mute; b) pregnant women; c) diabetics; d) change city during collection. Participants were selected for convenience, with hypertensive patients being approached on the day of their appointments.

Three questionnaires were applied: SAH Treatment Adherence Questionnaire (SAHTAQ) and Morisky Medication Adherence Scale (MMAS-8) on therapeutic adherence and the Short Assessment of Health Literacy for Portuguese-Speaking Adults (SAHLPA-18) on FHL.

The SAH Treatment Adherence Questionnaire (SAHTAQ) [13] classifies the general therapeutic adherence, considering pharmacological and non-pharmacological treatment. It is an instrument developed and validated with hypertensive patients in Fortaleza, Ceará, and proved to be adequate to assess adherence to SAH treatment. It places the respondent on an adherence scale ranging from 60 to 110, whereby the health professional will know, exactly, in which aspects of the treatment the hypertensive person should be more careful to move up the scale. The Morisky Therapeutic Adherence Scale (MMAS-8) [14] only considers pharmacological treatment. This justifies the use of two questionnaires to measure adherence in the study. The MMAS-8 used is a Portuguese version, translated and validated in Brazil, which assesses medication adherence, in which the patient must answer a questionnaire with brief questions that are later scored and classified. The specificities of the scales, regarding adherence to drug and non-drug aspects and their relationship with literacy, seemed to be an opportunity to choose a scale, due to the existence or not of divergences between them and health literacy, given the lack of a gold standard.

To assess the FHL, the instrument applied was adapted and validated by Brazilian researchers to estimate the level of adult health literacy.

People >90 points were considered adherent by SAHTAQ [13]. On the other hand, according to the MMAS-8 (version 2 of the medication adherence assessment scale, validated in Brazil), adherence is divided into high (8 points), medium (6-7 points), and low (<6 points), being only suitable if the patients reach the maximum score of eight points [14].

The FHL was measured by the Short Assessment of Health Literacy for Portuguese-Speaking Adults (SAHLPA-18), which ranges from 0 to 18. The item is correct if there is correct pronunciation and word-meaning association. Result 0-14 suggests inadequate FHL and 15-18 is adequate[15].

Data analysis was performed using Statistical Package for Social Sciences (IBM SPSS®) version 20.0, with analysis of absolute and relative frequencies of categorical variables, use of measures of central tendency (mean/median), and dispersion (standard deviation, minimum and maximum) for numeric variables. Inferential statistical analysis was performed using Pearson's Chi-square test (X)2, prevalence ratio, and odds ratio.

RESULTS

The age ranged from 18-95 years old, with a range of 77 years old. The mean age was 59.78 (±SD:11.666), mode 56 years old and median 60.5 years old. Of the total, 48.4% were adults (18-59 years old) and 51.6% were older people (60-95 years old). Women were predominant (68.2%). Most indicated low education (68.6%) with or without complete primary education and monthly income <1 minimum wage (MW) (39.6%), commonly to support up to five people per household (93.8%). Regarding clinical characteristics, 76.5% were obese and 55% had normal/pre-hypertension BP and 45% had high BP, being present in 31.4% of women (n=180) and 68.6% of men (n =62).

We evaluated the adherence to treatment using the SAHTAQ and MMAS-8 and the FHL, and we verified their association with sociodemographic and clinical variables. According to SAHTAQ, the majority (87.2%) adhered to the treatment (> 90), but only 5.4% reached the maximum level of adherence (110= taking antihypertensive medication properly, eating without salt, and following the non-medication treatment). Because SAHTAQ is new but broader, adherence was also verified with the MMAS-8, which measures pharmacological adherence.

According to the MMAS-8 instrument, 38.4% had low adherence and 61.6% medium/high adherence. Therefore, different results, but not divergent, as the SAHTAQ measures pharmacological and non-

pharmacological adherence, with the adherence measured by the SAHTAQ were more complete.

Table 1 shows the association between the therapeutic adherence of hypertensive patients and the analyzed variables.

We crossed independent variables (age group, gender, education, income, BP, BMI, FHL) with the dependent variable (adherence). By SAHTAQ, only BP had a statistical association with adherence (p=0.020). According to MMAS-8, there was a significant association between adherence and age (p=0.024).

Table 1 - Association between adherence and sociodemographic and clinical variables (n=242). Fortaleza-Ceará-Brazil, 2019

Variables	Total	SAHTAQ ADHERENCE§		p-value OR¶ (CI 95%)**	MMAS-8 ADERENCE||		p-value OR (CI 95%)
		Adhering	Not adhering		High/Mean	Low	
	fi† (%)	fi (%)	fi (%)		fi (%)	fi (%)	
Age group							
< 60 years old	117(48.3%)	99(40,9%)	18(7,4%)	0,246	64(26,4%)	53(21,9%)	0,024*
≥ 60 years old	125(51.7%)	112(46,3%)	13(5,4%)	0,638 (0,298-1,369)	86(35,5%)	39(16,1%)	0,548 (0,324-0,926)
Gender							
Male	62(25.6%)	53(21.9%)	9(3.7%)	0.641	37(15.3%)	25(10,3%)	0,664
Female	180(74.4%)	158(65.%)	22(9.1%)	1.220 (0.529-2.813)	113(46.7%)	67(27,7%)	1,140 (0,631-2,057)
Education level							
Elementary School	166(68.6%)	146(60.3%)	20(8.3%)	0.600	100(41.3%)	66(27.3%)	0.409
High School/Higher Education	76(31.4%)	65(26.9%)	11(4.5%)	1.235 (0.560-2.727)	50(20.7%)	26(10.7%)	0.788 (0,447-1.389)
Family Income							
Up to 1 min wage	85(35.1%)	74(30.6%)	11(4.6%)	0.964	46(19%)	39(16.1%)	0.064
1 |- 5 minimum wage	157(64.9%)	137(56.6)	20(8.3%)	0.982 (0.442-2.160)	104(43%)	53(21.9%)	0.601 (0.350-1.031)
People/ household							
Up to 5 people	226(93.8%)	196(81.3%)	30(12.4%)	0.459	141(58.5%)	85(35.3%)	0.484
> 5 people	15(6.2%)	14(5.8%)	1(0.4%)	0.467 (0.59-3.679)	8(3.3%)	7(2.9%)	0.451(0.508 -4.146)
BMI‡							
Peso baixo/adequado	57(23.6%)	51(21.1%)	6(2.5%)	0.555	37(15.3%)	20(8.3%)	0.602
Overweight/ Obesity	185(76.4%)	160(66.1%)	25(10.3%)	1.328 (0.516-3.417)	113(46.7%)	72(29.8%)	1.179 (0.635-2.189)
BP							
Normal/ prehypertensive	133(55%)	122(50.4%)	11(4.5%)	0.020*	86(35.5%)	47(19.4%)	0.343
Hypertension	109(45%)	89(36.8%)	20(8.3%)	2.492 (1.137-5.463)	64(26.4%)	45(18.6%)	1.287 (0.764-2.167)

Source: Research data.

Note: p* = statistical significance; fi†= absolute frequency; BMI‡= body mass index; SAHTAQ§= Questionnaire for adherence to treatment of systemic arterial hypertension; MMAS-8||= Morisky Medication Adherence Scale; OR¶= Odds Ratio; CI**= Confidence Interval.

Regarding FHL, each correct item was correct in pronunciation and association worth one point, with a maximum of 18. Inappropriate FHL was 0-14 and adequate was 15-18[15]. Most obtained 0-14 points, with a median of correct answers of 13.39 (±SD 3.26), or inadequate FHL. Of the total, 42.2% of hypertensive patients had adequate FHL and 57.8% had inadequate.

The therapeutic adherence variable analyzed by the SAHTAQ and MMAS-8/Morisky scale instruments had no statistically significant association with the FHL when adherence was measured via SAHTAQ (p=0.232) or MMAS-8/Morisky scale (p=0.835) (Table 2).

Although the association between literacy and adherence is not evidenced, hypertensive people and the community, in general, must be informed and educated about the factors related to adherence and that can influence literacy, consciously choosing or not for a healthier life.

Table 2 - Association between functional health literacy and sociodemographic, clinical, and adherence variables (n=242). Fortaleza-Ceará-Brazil, 2019

Variables		Total		FHL		p-value
				Adequate	Inadequate	
		fi†	%	fi (%)	fi (%)	
Gender	Female	180	68.2	78(32.23%)	102(42.15%)	> 0.05
	Male	62	23.5	24(9.92%)	38(15.70%)	
Age group	< 60 years old	117	48.3	57(23.55%)	60(24.79%)	< 0.05*
	60-95 years old	125	51.7	45(18.60%)	80(33.06%)	
Education level	Elementary school	166	68.6	51(21.07%)	115(47.52%)	< 0.05*
	High school/Higher Education	76	31.4	51(21.07%)	25(10.33%)	
Income	≤1 Minimum wage	96	39.7	8(3.31%)	17(7.02%)	> 0.05
	1 -| 5 Minimum wages	146	60.3	94(38.84%)	123(50.83%)	
People in the household	1-2 people	88	36.4	37(15.29%)	51(21.07%)	> 0.05
	3-5 people	154	63.6	65(26.86%)	89(36.78%)	
BMI‡	Normal/low weight	57	23.5	20(8.26%)	37(15.29%)	> 0.05
	Overweight/Obesity	185	76.5	82(33.88%)	103(42.56%)	
Classe de PA	Normal/Pre-hypertension	133	55.0	62(25.62%)	71(29.34%)	> 0.05
	Hypertension	109	45.0	40(16.53%)	69(28.51%)	
Adherence-Morisky ‖	High/Medium adherence	149	61.6	64(26.45%)	85(35.12%)	> 0.05
	Low adherence	93	38.4	38(15.70%)	55(22.73%)	
Adesão-QATHAS§	Adhering	211	87.2	92(38.02%)	119(49.17%)	> 0.05
	Not adhering	31	12.8	10(4.13%)	21(8.68%)	

Source: Research data.
Note: p* = statistical significance; fi†= absolute frequency; BMI‡= body mass index; QATHAS§= Questionnaire for adherence to treatment of systemic arterial hypertension; MMAS-8‖= Morisky Medication Adherence Scale.

Age group and education were statistically significant with FHL (p<0.05). The results showed more inadequate FHL among the older and less educated.

DISCUSSION

In Brazil, hypertensive patients who maintain BP<140x90mmHg (57.6%) use drugs correctly (36.5%), adhere to therapy, change eating habits, abandon addictions (smoking/alcoholism) and incorporate physical activities [16-17]. However, changes in lifestyle and habits are not easy, which may explain the difference in adherence levels obtained with SAHTAQ and MMAS-8, especially since the latter only assesses pharmacological treatment.

Adherence to the treatment of SAH must include education on the topic, the ability to understand and interpret health guidelines for a lifestyle change, and adherence to the use of drugs, related to the FHL [18]. Treatment adherence is the subject of research around the world, given the challenge of managing it while providing public health care. It requires multiple actions in the areas of health and education, mainly provided for in public policies, in addition to personalization and humanization in user care [17].

The approach to adherence must be different for each age group, carefully valuing the needs and difficulties presented by hypertensive patients. People with low education may have lower self-care performance because they do not understand the guidelines of the health professional or because they cannot read the prescription or because of difficulties in its interpretation, which converges with the association between low adherence and education found [15,19].

Among the study participants, there were many older people with low income, FHL, and adherence. Income was associated with treatment abandonment or inadequate follow-up, due to the not uncommon need to buy drugs unavailable in the Unified Health System (SUS), adequate food to the prescribed diet, and follow-up exams, which can generate or delay the

diagnosis of comorbidities/complications, potentiated in the presence of low literacy[16,20].

Also, policies for access to health services, professional monitoring, technological measures for blood pressure control, access to modern drugs are required. Thus, it is urgent to elect awareness strategies for individuals, families, and the community, expanding interests and capacities in understanding their health-disease-care process[16].

Therefore, the health team should know the level of adherence of users, easy-to-perform instruments are available and scientifically disclosed, capable of making this measurement. Two of these instruments are used in this study (SAHTAQ, MMAS-8). The measurement of the FHL seems to be an important indicator, in the context of therapeutic adherence and the determination of expected results, for interventions related to health education, guidance on self-care, and prevention of complications and treatment abandonment. Such instruments can certainly facilitate the development of therapeutic plans[17,20-21].

The FHL is an important indicator, as it is strategic in the dimension of thinking and caring for their health and is related to individual well-being and satisfaction with life. It also involves understanding written materials, understanding spoken guidelines, associated with prior and cultural knowledge for the management of care and health promotion[18]. There is a lot in common between adherence and FHL, especially concerning access to health information and the development of critical awareness for action in their life and social context.

The nurse is the professional who identifies the need for an active search for patients who are absent for consultations, plans, manages, coordinates, and develops health education activities, contributing to greater participation and therapeutic adherence[6,9,22]. The relationship between this professional and the patient, based on health education, enables learning and improves the patient's health literacy, promoting autonomy to make decisions relevant to their health and well-being.

Considering that the low FHL can affect the interaction between patient and professional in the communicative processes to generate misunderstanding of information related to the disease, drug or non-drug therapy and care, it makes the FHL an important conductor of good therapeutic communication, strengthening bonds of empathy and credibility, so important in chronic diseases[20-23].

CONCLUSION

Most participants had inadequate FHL. Such homogeneity in the findings remained in the non-significant association between adherence and FHL. Only the variables age group and education had a statistically significant association with the FHL, which, in absolute numbers, was more inadequate among older and less educated people. In the application of the SAHTAQ instrument, most adhered to the treatment, but few at their maximum level and showed significance only with blood pressure. With MMAS-8, we found lower adherence, certainly because of its specific approach to pharmacological treatment, and showed a significant association only with age.

As it is a population with little education compared to populations in developed countries, the instrument was designed and applied. We need to emphasize that research on FHL in Brazil is still recent, and no instrument adapted to the Brazilian reality has been developed, emerging the need to create Brazilian instruments to assess the FHL.

Exploring the conditioning and determining factors of the FHL that are related to adherence can expand knowledge and support specific interventions to be incorporated into nursing practice, it is relevant to better understand the FHL relationship and adherence to the different cultural and care contexts in chronic diseases.

The contributions to clinical nursing practice to the application of instruments and association with adherence and the FHL, although without a statistically significant association, refer to its ability to direct the planning of health education actions to improve literacy and therapeutic adherence antihypertensive. In teaching, it is suggested the qualification of professionals on the use of instruments for measuring the FHL and therapeutic adherence, as subsidies for clinical nursing practice in primary health care.

The study, in its situational diagnosis, can also contribute to the awareness of managers about the importance of looking at this theme of FHL and therapeutic adherence and its insertion in public policies in Brazil. We expect that the situational diagnosis exposed here can support

health education actions and individualized care plans in the context of each hypertensive patient. The union between management, health professionals, and service users is of great value in strengthening health promotion and complication prevention actions.

The results suggest the need to develop educational materials, whose reading is adequate to the level of literacy of SUS patients to facilitate the adherence process. Furthermore, measures to promote health and prevent chronic conditions should aim at (i) the situational diagnosis of health literacy; (ii) better professional-patient interaction, emphasizing oral and written communication; and (iii) include the community and family in the care process.

The application of the literacy instrument as a questionnaire was a limitation of the research, as some of the words presented required greater interpretation skills, which may have interfered with the understanding of the meaning of some words by hypertensive patients. This situation was minimized by the researcher's attentive look and her availability to explain meanings and facilitate understanding. This limitation confirms the need for instruments built for the Brazilian reality.

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Note: Extracted from the Master's Thesis of the Graduate Program in Clinical Care in Nursing and Health at the State University of Ceará, entitled: "Analysis of the association between therapeutic membership and health lettering in hypertensive patients".

Received in: 17/12/2020

Approved in: 17/05/2021