



Functional health literacy: protective role in adherence to treatment for hypertensive patients

Letramento funcional em saúde: papel protetor na aderência ao tratamento de pacientes hipertensos

Alfabetización funcional en salud: el papel protector para la adhesión al tratamiento de pacientes con hipertensión

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ABSTRACT

Objective: To investigate factors associated with Functional Health Literacy (FHL), as well as its role as a probable protective factor for treatment adherence in individuals with hypertension (SAH), attended in Primary Health Care (*Atenção Primária à Saúde - APS*) units. **Methods:** This is a cross-sectional study with APS users under antihypertensive medication in the city of Salvador, Bahia. Illiterate or functionally illiterate patients were excluded, as well as those with a history of ischemic stroke. Data were collected between November 2015 and August 2016. Sociodemographic and clinical data were accessed utilizing a structured instrument developed by the authors, and the FHL was assessed using the REALM. Descriptive analyses and logistic regression were performed. **Results:** The population comprised 286 individuals and it was observed that low schooling was associated with inadequate FHL, both in the gross and adjusted analysis (OR = 9.25; CI95%: 4.49 – 19.05) and with the professional activity of manual labor (OR = 9.90; CI95%: 2.08 – 46.90). In patients with schooling levels of over 8 years, it was observed that the FHL was significantly associated with non-adherence to medical treatment, even after adjustment by gender, age, civil status, physical activity, and skin color (OR = 3.0; CI95%: 1.2 – 7.9). **Conclusions:** Inadequate FHL was significantly associated with non-adherence to treatment only for those with over 8 years of schooling. Improvements in health promotion actions should be reinforced to address chronic diseases such as SAH.

Descriptors: Health Literacy; Health Education; Hypertension; Treatment Adherence and Compliance.

RESUMO

Objetivo: Investigar os fatores associados ao letramento funcional em saúde (LFS), bem como seu papel como provável fator protetor para adesão à terapia em indivíduos com hipertensão (HAS) atendidos em unidades de Atenção Primária à Saúde (APS). **Métodos:** Estudo transversal realizado com usuários da APS em uso de medicamentos anti-hipertensivos na cidade de Salvador, Bahia, Brasil. Pacientes analfabetos ou analfabetos funcionais foram excluídos, assim como aqueles com história pregressa de acidente vascular cerebral. Coletaram-se os dados entre novembro de 2015 e agosto de 2016. Os dados sociodemográficos e clínicos foram acessados com instrumento estruturado desenvolvido pelos autores, e o LFS foi avaliado com o Rapid Estimate of Adult Literacy in Medicine (REALM). Realizaram-se análises descritivas e de regressão logística. **Resultados:** A população foi composta por 286 pessoas; e a baixa escolaridade estava associada à inadequação do LFS, tanto na análise bruta quanto na ajustada (OR = 9,25; IC95%: 4,49 - 19,05), e com o tipo de atividade profissional de natureza manual (OR = 9,90; IC95%: 2,08 - 46,90). Em pacientes com escolaridade acima de 8 anos, observou-se que o LFS se associou significativamente à não adesão ao tratamento médico, mesmo após ajuste por sexo, idade, estado civil, atividade física e cor da pele (OR = 3,0; IC95%: 1,2 - 7,9). **Conclusão:** O LFS inadequado se associou significativamente à não adesão ao tratamento apenas para aqueles



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com escolaridade acima de 8 anos. Melhorias nas ações de promoção da saúde devem ser reforçadas ao lidar com doenças crônicas como a HAS.

Descritores: Letramento em Saúde; Educação em Saúde; Hipertensão; Cooperação e Adesão ao Tratamento.

RESUMEN

Objetivo: Investigar los factores asociados con la Alfabetización Funcional en Salud (AFS) y su papel como probable factor de protección para la adhesión al tratamiento de individuos con hipertensión (HAS) asistidos en unidades de Atención Primaria de Salud (APS). **Métodos:** Estudio transversal con usuarios de la APS en uso de medicación para la hipertensión en la ciudad de Salvador de Bahía. Los pacientes analfabetos y analfabetos funcionales han sido excluidos y aquellos con historias de accidentes vasculares cerebrales anteriores. Se ha recogido los datos entre noviembre de 2015 y agosto de 2016. Los datos clínicos y sociodemográficos han sido recogidos a través de un instrumento desarrollado por los autores y la AFS ha sido evaluada por el REALM. Se ha realizado los análisis descriptivo y de regresión logística. **Resultados:** La población fue de 286 individuos y la baja escolaridad estuvo asociada con la AFS inadecuada en el análisis bruto y el ajustado (OR = 9.25; IC95%: 4.49 – 19.05) y con la actividad de trabajo manual (OR = 9.90; IC95%: 2.08 – 46.90). En los pacientes con más de 8 años de escolaridad se observó que la AFS estuvo significativamente asociada con la no adhesión al tratamiento médico incluso después del ajuste para el género, la edad, el estado civil, la actividad física y el color de la piel (OR = 3.0; IC95%: 1.2 – 7.9). **Conclusión:** La AFS inadecuada se asoció significativamente con la no adhesión al tratamiento solamente por aquellos con más de 8 años de escolaridad. Mejorías en las acciones de promoción de la salud deberían ser reforzadas para abordar enfermedades crónicas como la HAS.

Descritores: Alfabetización en Salud; Hipertensión; Cumplimiento y Adherencia al Tratamiento.

INTRODUCTION

Functional Health Literacy (FHL) may be understood as the ability to read, interpret, make appropriate connections, and reproduce information within the health context⁽¹⁻³⁾. Hence, the FHL level can interfere in the communication processes, in the perception, and the action of the individual concerning a commitment with the treatment, in other words, adherence to therapy⁽⁴⁾. It is influenced by the understanding of all of its phases and the inherent risks of the health condition^(3,5). Long-term diseases, such as chronic non-communicable diseases (CNCD) tend to challenge health professionals in the sense of keeping their patients motivated and committed to their self-care^(4,5). The treatment of chronic diseases requires, therefore, the empowerment of adherence to medicinal treatment. The knowledge of the necessary care for keeping-up the well-being, despite the existence of a CNCD, such as Systemic Arterial Hypertension (SAH), is tied to understanding the importance of the treatment^(4,6,7).

Scientific evidence suggests that low FHL levels are related to low adherence to treatment once there is a need for specific guidance^(4,8). Furthermore, recognizing the risks of complications resulting from the absence of blood pressure control may also influence the decision process for self-care in health. In the scope of Primary Healthcare, the National Humanization Policy presents the Singular Therapeutic Project (STP) as a healthcare organization strategy. The STP was developed with the proposal of the user being a part of the construction of the therapy to be adopted⁽⁹⁾ and, for this purpose, a low level of knowledge on the pathology and the treatment becomes a limiting factor⁽¹⁰⁾.

Consequently, it is considered that awareness that living habits and the correct intake of a medication influence the successful outcome of the treatment and also, that the FHL level interferes in the communication process and understanding of the treatment⁽⁷⁾. Nevertheless, despite being extensively discussed and related to health education processes in other countries^(3,5), there are few studies in Brazil assessing the relationship between FHL and adherence to medicinal treatment. The purpose, therefore, is to investigate factors associated with Functional Health Literacy, as well as to its role as a probable protective factor for adherence to therapy in individuals with systemic arterial hypertension treated at Primary HealthCare (Atenção Primária à Saúde - APS) units.

METHODS

A cross-sectional study was performed with individuals under treatment for the control of SAH at Primary HealthCare units in the Cabula- Beiru Health District (CBHD), in the city of Salvador, Bahia, Brazil. Patients over 18 years at the healthcare unit during the period of collection and under the use of hypertensive medication were invited to participate. The excluded patients were illiterate or functionally illiterate and those with a history of stroke. Patients, who after having started the data collection decided to withdraw, were considered as a loss.

The sample calculation was performed using the OpenEpi (www.openepi.com) program. This program was based on the percentage of 24% for SAH in adults⁽¹¹⁾, a sample error of 5%, confidence level of 95%, and CBHD population of 224,508 individuals for the age group of interest having estimated 280 individuals. The CBHD presents the fifth largest population density in the municipality of Salvador and serious public health issues associated to social determinants such as high levels of illiteracy and unemployment, low income and a high incidence of infectious and contagious diseases, such as tuberculosis and leprosy and, added to these, considerable cases of violence⁽¹²⁾.

Primary data was collected by trained researchers from November 2015 to August 2016. For data collection in the premises of the Primary Healthcare units, a structured form was used, prepared by the authors of the study, containing blocks of variables relating to sociodemographic, cultural, living habits, clinical history, treatment, and adherence to treatment variables.

Concerning the sociodemographic variables, age in full years, and gender were questioned. Skin color was defined by the interviewer and classified following the Brazilian Institute of Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística - IBGE*), but the analysis was collapsed to white and black/brown. Marital status was assessed considering the existence or absence of a partner. Schooling was defined following the years of study and characterized as less than eight and greater or equal to eight years. Family income was categorized as lower than two and equal to or greater than two minimum wages, which at the time of data collection the minimum wage was R\$ 880.00. To occupational activity, the area of activity was classified as manual labor or not.

It was also included the verification of visual acuity using the Snellen chart, having considered as adequate for reading the signs, as a minimum, up to line 20/50 of the chart without presenting signs or symptoms of visual problems⁽¹³⁾.

To assess the FHL the Rapid Estimate of Adult Literacy in Medicine – REALM14 questionnaire was used⁽¹⁴⁾. The questionnaire consists of 66 items that assess the capacity of the individual to pronounce and understand common medical terms. When compared to other reading tests, the REALM test presented excellent concurrent validity, varying from 0.97 to 0.88 ($p < 0.001$)¹⁵. A pilot study was performed to calibrate the instruments and interviewers.

Regarding clinical data, the period of treatment for SAH was self-reported and registered in years. The existence of diagnosis for Diabetes Mellitus (DM) was questioned. Concerning self-care, the amount of different medication ingested in general was observed and the medication for blood pressure controlled. Adherence to treatment was investigated using the application of the Morisky-Green test (MGT)⁽¹⁵⁾ with four items and classified as adherent, moderately adherent and non-adherent, with the latter two collapsed for analysis. Regarding the use of the health services, it was computed whether the user attended or not the appointments. When investigating the communication processes and the perception of the guidance towards self-care, a clear understanding of the information was questioned and considered as dichotomous variables.

For data analysis, a Microsoft Excel for Windows databank was created and the analyses conducted on the Stata (V.12.0) statistical package, where corrections and inconsistencies eliminations were performed. To compare the FHL prevalence and assessment of the profile of adherence to treatment, following the characteristics of the studied population, the chi-square test (χ^2) and χ^2 for trend were applied. Bivariate analyses were performed to identify the set of variables that mostly contribute to the explanation of the FHL. For the preparation of the model, the variables that demonstrate levels of statistical significance, according to < 0.10 were maintained. Subsequently, multivariate analyses were performed using logistic regression to estimate the association between FHL and adherence to therapy, investigating potentially confounding and effect modification variables: age, skin color, schooling, marital status, income, occupation, professional activity, antihypertensive medication, period of SAH diagnosis, concomitant diabetes, missing appointments, understanding clearly all that is said during an appointment with the health professional, leaving the appointment without any doubts over the health situation, understanding all that is said before leaving the appointment, and leaving the appointment without any doubts as to the intake of medication. The magnitude of the association was estimated using the odds ratio (OR), adopting the CI of 95%.

This study is part of a greater project, called “Knowledge Multipliers: Junior Doctors and health education directed at family members and bearers of SAH and DM, residents in the Cabula/Beiru Health District” established in a partnership with the Education by Work for Health Program Pet Health/ Environmental and Sanitary Health Surveillance financed by the Ministry of Health in a partnership with the Municipal Health Department of Salvador and the State University of Bahia in 2012. It was approved by Plataforma Brasil/ CEP UNEB (Decision 241.434/2013). All of the participants signed the informed consent term and were informed that they could, at any time, interrupt or withdraw from the research.

RESULTS

There were 286 individuals with SAH in the use of medical treatment who fulfilled the eligibility criteria.

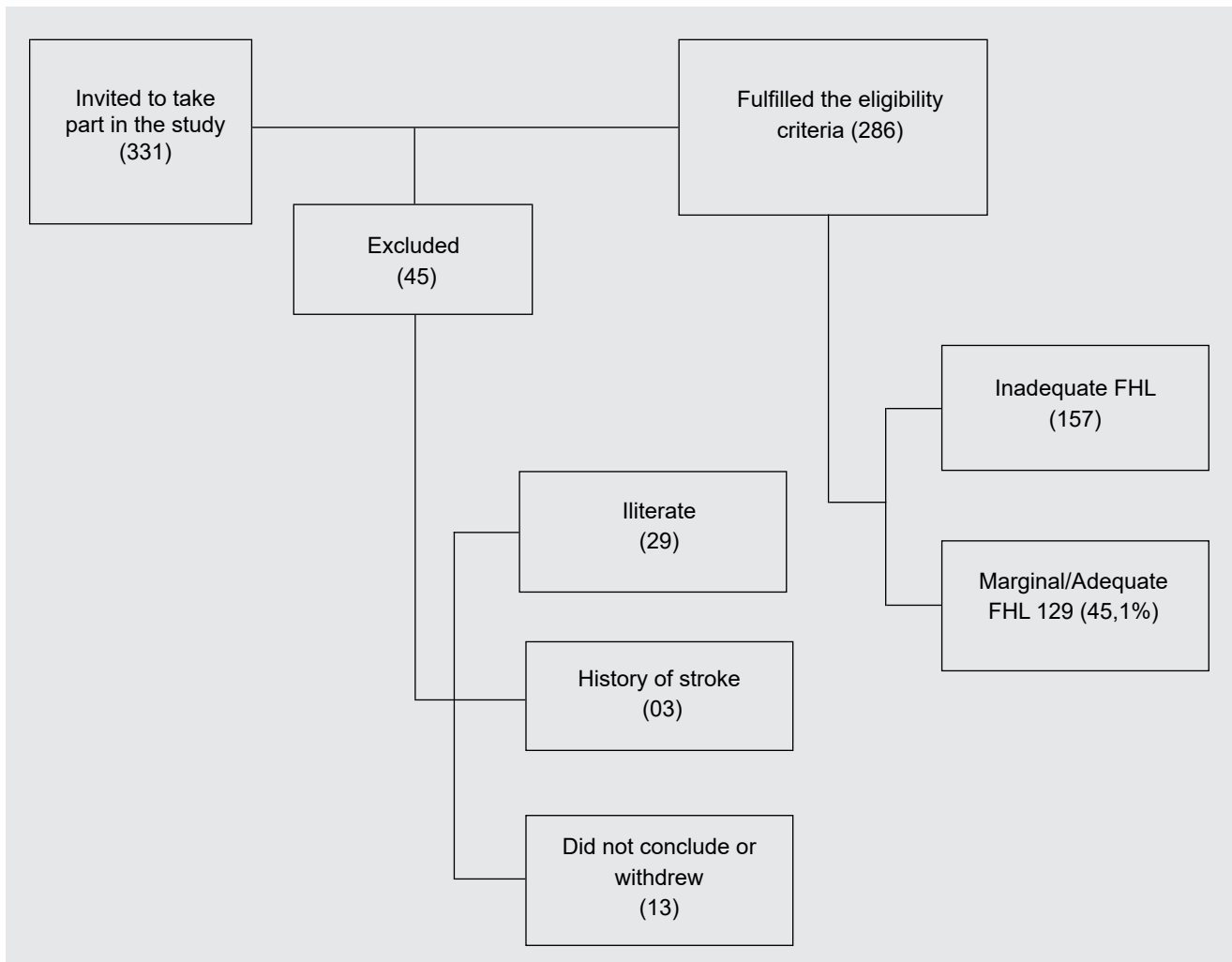


Figure 1 - Flowchart detailing the screening of patients for analysis

The sample was predominantly made up by individuals of the female gender (82.2%; n=235), aged under 60 years (55.9%; n=160), skin color: black and brown (94.4%; n=270), and marital status of equal proportion (50.0%; n=143). There was also a predominance of low schooling (62.9%; n=180), low income (65.1%; n=186), professional occupation in manual labor activities (89.8%; n=257) and low adherence to treatment (67.5%; n=193). High prevalence of FHL were identified, with significantly different in relation to age groups (24 to 59 years – 61,9%; n=78 and 60 to 92 years 49,4%; n=79), schooling (over 8 years of study – 22.6%; n=24 and up to 8 years of study – 73.9%; n=133), inserted in the labor market (yes – 43.2%; n=35 and no – 59.5%; n=122), professional activity (non-manual labor – 6.9%; n=2 and manual labor - 60.3%; n=155) and concomitant diabetes (yes – 66.7%; n=60 and no – 49.5%; n=97). It was observed that low schooling was associated to inadequate FHL, both in the gross and the adjusted analyses (OR=9.25; CI95%: 4.49 – 19.05) and having a type of manual professional activity (OR=9.90; CI95%: 2.08 – 46.90).

Table II presents the characteristics of the individuals under adherence to treatment. It was verified that among the patients who informed adherence to medical treatment, there was no significant difference to those who informed that they did not adhere to medical treatment concerning age, skin color, civil status, family income, type of occupational activity, continued use of antihypertensive medication, a period of diagnosis of hypertension and concomitant diabetes. It should be noted that patients who reported adherence to medical treatment are significantly higher proportions in the labor market (31.6%; n = 61) compared to those who did not adhere (21.5%; n = 20) ($p = 0.04$) and those who did not clearly understand what was informed during the medical consultation (30.1%; n = 58) compared to those who did not adhere to medical treatment (19.4%; n = 18) ($p = 0.04$).

Table I - Prevalence of FHL in accordance with socio-demographic characteristics of treatment and self-care of patients with Systemic Arterial Hypertension attended at APS unit the Cabula-Beiru Health District. Salvador. Bahia, Brazil, 2016.

Variables	n= 286	%	Prevalence of inadequate FHL* (%)	P value	Gross OR (CI 95%)	Adjusted OR (CI 95%)
Gender						
Female	235	82.2	54.5		1.00	1.00
Male	51	17.8	56.9	0.755	1.10 (0.59 – 2.03)	0.86 (0.38 – 1.93)
Age						
24 to 59	160	55.9	49.4		1.00	1.00
60 to 92	126	44.1	61.9	0.035	1.66 (1.03 – 2.67)	0.51 (0.24 – 1.04)
Skin color						
White	16	5.6	50.0		1.00	1.00
Black and Brown	270	94.4	55.2	0.685	1.23 (0.44 – 3.37)	1.77 (0.46 – 6.82)
Schooling						
Over 8 years of schooling	106	37.1	22.6		1.00	1.00
Up to 8 years of schooling	180	62.9	73.9	0.001	9.67 (5.50 – 16.98)	9.25(4.49 – 19.05)
Marital status						
Married or common-law marriage	143	50.0	51.7		1.00	1.00
Single, widow(er), separated, divorced	143	50.0	58.0	0.285	1.29 (0.81 – 2.05)	1.88 (1.00 – 3.56)
Family income (minimum wages)						
2 or more minimum wages	100	34.9	49.0		1.00	1.00
Up to 1 minimum wage	186	65.1	58.0	0.142	1.44 (0.88 – 2.34)	0.71 (0.36 – 1.42)
Working						
Yes	81	28.3	43.2		1.00	1.00
No	205	71.7	59.5	0.013	1.93 (1.14 – 3.25)	1.17 (0.56 – 2.43)
Professional activity						
Non-manual labor	29	10.2	6.9		1.00	1.00
Manual labor	257	89.8	60.3	0.001	20.51(4.77– 8.14)	9.90 (2.08 – 46.9)
Antihypertensive medication						
≤ 2	262	91.6	54.9		1.00	1.00
> 2	24	8.4	54.1	0.940	0.96 (0.42 – 2.24)	1.00 (0.35 – 2.83)
Diagnosis time of Systemic Arterial Hypertension (SAH)						
≥ 5	176	61.5	55.1		1.00	1.00
< 5	110	38.5	54.5	0.925	0.97 (0.60 – 1.57)	1.27 (0.66 – 2.47)
Concomitant diabetes						
No	196	68.5	49.5		1.00	1.00
Yes	90	31.5	66.7	0.007	2.04 (1.21 – 3.43)	1.40 (0.71 – 2.77)

*FHL: Functional Health Literacy

Table II - Association between Therapy adherence and socio-demographic characteristics of treatment and self-care of patients with Systemic Arterial Hypertension attendee at APS unit in the Cabula-Beiru Health District, Salvador, Bahia, 2016. N=286.

Variables	n	(%)	Therapy adherence (Morisky-Green)		P valor
			No (%)	Yes (%)	
Age					
24 a 59	160	55.9	61.9	57.0	0.35
60 a 85	126	44.1	49.4	43.0	
Skin color					
White	16	5.6	5.4	5.7	0.57
Black and Brown	270	94.4	94.6	94.3	
Schooling					
Over 8 years of schooling	106	37.1	39.8	39.4	0.52
Up to 8 years of schooling	180	62.9	60.2	60.6	
Marital status					
Married or common-law marriage	143	50.0	50.5	49.7	0.50
Single, widow(er), separated, divorced	143	50.0	49.5	50.3	
Family income (minimum wages)					
2 or more minimum wages	100	34.9	33.3	35.8	0.40
Up to 1 minimum wage	186	65.1	66.7	64.2	
Working					
Yes	81	28.3	21.5	31.6	0.04
No	205	71.7	78.5	68.4	
Professional activity					
Non-manual labor	29	10.2	7.5	11.4	0.31
Manual labor	257	89.8	92.5	88.6	
Antihypertensive medication					
≤ 2	262	91.6	91.4	91.7	0.54
> 2	24	8.4	8.6	8.3	
Diagnosis time of Systemic Arterial Hypertension (SAH)					
≥ 5	176	61.5	51.3	49.2	0.85
< 5	110	38.5	48.7	50.8	
Concomitant diabetes					
No	196	68.5	62.4	71.5	0.08
Yes	90	31.5	37.6	28.5	
Attends scheduled appointments					
Yes	251	87.8	69.9	76.7	0.14
No	35	12.2	23.3	30.7	
Understands everything that is said during an appointment					
Yes	210	73.4	80.6	69.9	0.04
No	76	26.6	19.4	30.1	
Leaves appointment with doubts about health situation					
No	215	75.2	81.7	73.6	0.20
Yes	71	24.8	17.3	26.4	
Leaves appointment with doubts about how to take medication					
No	216	75.5	79.6	73.6	0.17
Yes	70	24.5	20.4	26.4	

* Variables with values of $p \leq 0.10$ integrate the multivariate logistic regression model.

A strong indication was identified between functional literacy and schooling ($p < 0.001$). Thus, the results of the association between functional literacy and adherence to treatment were stratified by schooling levels. In patients

with schooling levels of over 8 years, it was observed that inadequate functional literacy was significantly associated to non-adherence to medical treatment, even after adjustment by gender, age, marital status, physical activity and skin color (OR=3.0; 95% CI: 1.2 to 7.9), while in patients with schooling levels of up to 8 years, a positive association was observed between inadequate functional literacy and the non-adherence to treatment, although without statistical significance (OR=1.3; 95% CI: 0.6 to 2.9) (Table III).

Table III - Final model of association between Therapy adherence and Inadequate Functional Health Literacy of patients with Systemic Arterial Hypertension cared for at APS unit in the Cabula-Beiru Health District. Salvador. Bahia, 2016. N=286

	Inadequate Functional Health Literacy	
	Gross OR (CI 95%)	Adjusted OR (CI 95%)
Schooling level		
8 years and over	1.4 (0.6 – 2.9)	1.3 (0.6 – 2.9)
Up to 8 years	2.2 (0.9 – 5.4)	1.3 (0.6 – 2.9)

* Adjusted by Gender, Age, marital status, physical activity and skin color

DISCUSSION

The information in this study shows that inadequate Functional Literacy in Health was significantly associated with non-adherence to treatment only for those with schooling over 8 years. It is important to note that, in the present study, the estimated association between insufficient functional literacy in health and non-adherence to medical treatment was modified by the individuals' level of education. In this sense, the fact that individuals with a lower level of education have inadequate literacy shows the difficulty of the REALM instrument to discriminate functional literacy differentiators in this group to explain treatment adherence. Attention is drawn to the fact that no significant association was identified in this study between inadequate functional literacy and non-adherence to medical treatment in the group of individuals with low education. This finding can be explained, in part, by the remote possibilities of someone in the group having good reading skills.

According to the Functional Literacy Indicator (*Indicador de Alfabetismo Funcional - INAF*)⁽¹⁶⁾, in 2016, among literate people or with a maximum of four years of study, a condition of functional illiteracy was observed in 67.0% of them. In addition, among these, only 1.0% was proficient. Thus, it appears that the lack of adequate schooling results in inadequate functional literacy and, consequently, in the inadequate LFS of this population stratum. It was observed that a large part of the population in this study had low education and, consequently, functional illiteracy. Many users were barely able to write their own names, despite informing a higher level of education, considering that, when asked to read the phrase "Close your eyes" in the Mini-Mental State Examination (MMSE), they reported that they could only sign their own name.

The finding in the group with schooling above 8 years that there was a positive and statistically significant association of inadequate functional literacy in health and non-adherence to treatment allows determining that literacy is one of the important factors for adherence to treatment, mainly because in this group individuals have the reading ability, which allows them to adequately measure literacy. In this sense, low health literacy rates can result in greater difficulty in accessing verbal and written information, such as medical prescriptions and other guidelines. This acts as a gap in the communication process and the information provided may be perceived in a different way than the original or may not even be obtained. As a result, misinterpretations in understanding may occur and affect the application of such information during self-care^(7,17). Therefore, this causes low adherence to therapy, resulting in a lack of blood pressure control and greater exposure to complications and comorbidities^(6,17).

In addition to these findings are the results observed for a better understanding and allow the person to understand and act on health information with certain autonomy. Furthermore, researchers⁽¹⁾ reported that in addition to the influence of the level of FHL, in the health communication process, the personalities involved in the doctor-patient binomial can affect the relationship and the approach of the language used, generating an incompatibility of information. In this present study, interviewees reported that they were often ashamed of not understanding the information provided and, on many occasions, they did not consult the professionals imagining that they would not have the patience to explain in detail what they had said.

It is estimated that the association between adequate FHL and adherence to treatment may be justified by the Charles Maguerez^(18,19) arc theory, in other words, through the process that involves the decision-making arc which is required for self-care. The need for identification of the difficulties (observation of reality) that can be perceived

by the individual is considered, as well as the influence of the beliefs of the individual during the observation of the individual's context, which implies in the preparation of theories about the problem (identification of key issues). Consequently, access to adequate information, at this time, can favor an understanding of the health situation of the individual (theorization) and the preparation of hypotheses (solution hypotheses), and accessible strategies following the reality of the individual (application to reality)⁽²⁰⁻²²⁾. In the present study, a gap was also observed in the health communication processes and such fact reinforces the hypothesis that this may also be a probable justification for these findings.

Adherence to treatment investigated herein is understood as being the degree of agreement between the guidance offered for the medical treatment and the adoption of such guidance^(23,24). It is a fact that adhesion to medication can suffer interferences from involuntary factors such as cognitive alterations, forgetfulness, or even socioeconomic factors that can impact the acquisition of medication^(24,25). Despite income not having been considered as an important variable in this study in the association between inadequate Functional Health Literacy and non-adherence to treatment, this has been demonstrated in other studies. Findings of an investigation in a study⁽²⁶⁾ with cardiovascular patients in an outpatient clinic in Juiz de Fora, Minas Gerais, Brazil, showed that individuals receiving up to one minimum wage presented greater difficulties in controlling the timing for taking their medication. Furthermore, they had difficulties in following the guidance related to diets and physical activities due to not fully understanding such guidance. In a global context, various studies have pointed out that socioeconomic factors and schooling levels are proxy variables and both related to the level of FHL⁽²⁰⁻²²⁾. This influences important aspects involved in the process of adherence to treatment and the self-care capacity^(22,24).

It is important to mention that strategies to improve adherence to treatment depend on the identification of factors that go beyond functional literacy. Considering that, in this study, inadequate Functional Literacy in Health had a relevant role in non-adherence to treatment; the identification of factors associated with inadequate Functional Literacy in Health can be useful in the recognition of risk groups for non-adherence to treatment. Among the factor investigated, the emphasis is given to schooling levels and professional activity. The fact of being a manual laborer was strongly associated with inadequate functional health literacy. It is important to observe that among the factors significantly associated with inadequate FHL, the professional activity, and type of activity, whether manual labor or not, is also related to the level of understanding of the individual due to a lower schooling level. In a research⁽²⁷⁾ it was highlighted that the premature entrance of low-income young people to the labor market may be related to a lower schooling level.

As such, it is assumed that early beginning in the labor activity may be associated with the rendering of professional services that do not demand formal education. A similar result was observed in a study⁽²⁸⁾ when investigating the perspective of elderly people using the health care services and observing that most had not concluded elementary school and also made reference to the historical late entrance of women to the school environment within the social context of Brazil. Similar to the latter case, in the present study the population was predominantly of the female gender, and during the investigation reports were also received that they were not permitted to attend school once they were not authorized by family members, parents, and/or partners.

In the present study factors such as gender and age were not demonstrated as risk factors associated with low FHL, despite some investigators have pointed out this connection. In a research performed in the USA⁽³⁾, it was observed that women presented a better performance in FHL tests when compared to men. However, in another study⁽²⁹⁾ carried out in Portugal, it was observed that women had a higher risk of presenting a limited FHL. It is thus observed that there is no consensus in the literature concerning the influence of gender and the level of functional literacy. Nevertheless, it is considered that socioeconomic and age group variations of these individuals could justify these different findings. About age, the results obtained by a study of literature review⁽³⁰⁾ observed that the FHL was associated with sociodemographic variables such as gender, age, and schooling levels. However, in another research⁽³¹⁾, performed in Goiás, Brazil, despite not identifying the association between FHL and age, higher health fragility was observed in the elderly. Furthermore, in a study⁽³²⁾, it was suggested that cognitive alterations associated with senility could interfere in the findings related to FHL.

The partnership established with the Municipal Health Department was considered an advantage, as well as the considerable availability of health unit leaders to collaborate with the study. The primary data collected in person and applied by trained interviewers, as well as the pilot study, can also be considered as strong points of this investigation.

Limitation factors considered were the large variety of instruments to assess the FHL construct, suggesting a multiplicity of intervening factors and requiring greater attention for the comparison of results and the use of an instrument not validated for the Portuguese language. However, REALM is an instrument of simple application and the use of the non-validated instrument is of simple application and comprises words that are related to the healthcare

routine. Consequently, the free translation may not compromise once it is similar to the constructs presented in the original instrument. The use by other Brazilian researchers in the development of investigations with similar populations is also emphasized.

The importance of the findings of this research resides in the strong recommendation of clearer guidelines for the approach of hypertensive users with low education and even for those with more than 8 years of study. Constantly checking, at each consultation, the understanding of the guidelines offered and the need to adhere to conservative and medication treatment should be a concern for all health professionals. It is also recommended that new studies be carried out for a better understanding of the phenomena reported herein. For now, it is suggested that strategies be adopted to verify the efficiency of the communication processes during medical care to patients with non-communicable chronic diseases care for at primary healthcare units.

CONCLUSION

The results of the study permit us to conclude that inadequate FHL was significantly associated with non-adhesion to treatment only for patients with over 8 years of schooling. However, despite the results suggesting that for individuals with low schooling functional literacy was not significantly associated with non-adhesion to treatment, the schooling level influenced the degree of FHL and, therefore, on the process of adherence to medical therapy. For that reason, improvement to health promotion actions should be strengthened when addressing chronic diseases such as SAH.

CONFLICTS OF INTEREST

There are no conflicts of interest.

CONTRIBUTIONS

Luciana Ricarte Cavalcante and **Helena Fraga-Maia** contributed to the study conception and design; analysis and interpretation of data and writing and revision of the manuscript. **Luciara Leite Brito** contributed to analysis and interpretation of data; and writing the manuscript.

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