Suzana Raquel Lopes Marques[1]
Andrezza Gonzalez Escarce[1]
Stela Maris Aguiar Lemos[1]

Health literacy and self-rated health in adults primary care patients

Letramento em saúde e autopercepção de saúde em adultos usuários da atenção primária

ABSTRACT

Purpose: To verify the association between health literacy, social determinants and self-rated health in adult's primary health care patients. **Methods:** this is an Observational cross-sectional study in which a total of 380 patients of the Unified Health System in the context of primary health care were interviewed. The sample was probabilistic, stratified by gender, age, and Basic Health Unit. Health literacy was evaluated by an instrument of analysis of the perception of adults about the understanding of health orientations and possible difficulties in this process (Health Literacy Scale). Descriptive and association analyses were performed (Pearson's chi-square test, p≤0.05). **Results:** It was verified that the majority of the interviewees belongs to classes C1 and C2 and attended high school (complete or incomplete). Regarding self-rated health, to be considered healthy and with good health were the predominant perceptions. In the Health Literacy Scale, it was verified that most patients reported never presenting difficulties in the situations of this instrument, except understanding written orientations. It was observed the association with a statistical significance of the better perception of health literacy with higher educational level and economic classification, as well as with self-rated of good health. **Conclusion:** There was a statistical association between health literacy, social determinants, and self-rated health in the analyzed adults. It is noteworthy the contribution of the Health Literacy Scale for emphasizing the perception of difficulties in everyday health situations. It is necessary to develop dialogic relationships that build more robust communication processes between professionals and healthcare patients to favor health literacy skills.

RESUMO

Objetivo: Verificar a associação entre o letramento em saúde, determinantes sociais e autopercepção da saúde em adultos usuários da Atenção Primária à Saúde. **Método:** Estudo observacional analítico transversal no qual foram entrevistados 380 usuários do Sistema Único de Saúde no contexto da Atenção Primária à Saúde. A amostra foi probabilística, estratificada por gênero, faixa etária e Unidade Básica de Saúde. O letramento em saúde foi avaliado por meio de instrumento de análise da percepção de adultos sobre o entendimento de orientações em saúde e possíveis dificuldades nesse processo (Escala de Letramento em Saúde). Foram realizadas análises descritivas e de associação (teste Qui quadrado de Pearson, p≤0,05). **Resultados:** Verificou-se que a maioria dos entrevistados pertence às classes C1 e C2 e cursou o ensino médio. Quanto à autopercepção da saúde, considerar-se saudável e com boa saúde foram as percepções predominantes. Na Escala de Letramento em Saúde, verificou-se que a maior parte dos usuários relatou nunca apresentar dificuldades nas situações desse instrumento, exceto compreensão de orientações por escrito. Observou-se associação com significância estatística da melhor percepção de letramento em saúde com maior escolaridade e classificação econômica, bem como com a autopercepção da saúde boa. **Conclusão:** Houve associação estatística entre letramento em saúde, determinantes sociais e autopercepção da saúde nos adultos avaliados. Ressalta-se a contribuição da Escala de letramento em saúde por enfatizar a percepção de dificuldades nas situações cotidianas da saúde. Faz-se necessário desenvolver relações dialógicas que construam processos comunicativos robustos entre equipe e usuário para favorecer as habilidades de letramento em saúde.

Correspondence address:
Suzana Raquel Lopes Marques
Departamento de Fonoaudiologia,
Programa de Pós-graduação em
Ciências Fonoaudiológicas, Faculdade
de Medicina, Universidade Federal de
Minas Gerais – UFMG
Avenida Alfredo Balena, 190, Santa
Efigênia, Belo Horizonte (MG), Brasil,
CEP: 30840-600.
E-mail: suzilps@yahoo.com.br

INTRODUCTION

National and international literature has advanced the study of the abilities to access, understand, evaluate and apply guidelines for health care. This set of skills considered as health literacy represents an important resource for health promotion[1] and can be evaluated by several instruments[2,3]. It should be emphasized that the improvement of literacy levels in health requires progress in the oral and written communication skills of individuals and health services[4].

Recently, there were efforts to develop tests in Portuguese for the evaluation of health literacy in the Brazilian population[3,5,6]. When evaluating it, it is important to consider the subjective nature involved in people's perception of everyday health care difficulties. This subjectivity highlights the relevance of the analysis of self-rated of health in epidemiological studies[7]. This type of assessment contributes to the understanding of health as a complex and multifactorial condition, which represents an integrated perception of the individual regarding the biological, psychological and social dimensions[8].

It is also recognized the influence of social determinants of health in the literature and recent research shows their associations with health literacy skills[2,9]. Individuals with low socioeconomic conditions, lower educational level, and self-perceived lower social status have lower health literacy compared to those who do not experience these situations[4,9]. Considering the adult population in the Brazilian context, the percentage of absolute illiterates or individuals with a rudimentary level of literacy is worrisome. Such formal education conditions are unfavorable or limiting to the development of literacy skills in health[4]. Therefore, identifying health literacy patterns according to social determinants may foster an understanding of how literacy skills in health are influenced by inequities and which interventions should be performed[2].

Studies on health literacy, relationships with self-rated of health, and social determinants are scarce and necessary in Brazil[10] and Latin America[11], especially when considering the adult population. Even in regions with more tradition in research on health literacy, such as Europe, participants aged 65 and over predominate, and those aged 25 to 39 years old are underrepresented[9].

Dialogue for establishing collaboration and co-responsibility between workers and patients of health services is at the heart of Primary Care work[12]. Despite the limitations of current health literacy assessment tests in analyzing the communicative interaction between patients and health services, the information provided by these instruments enables to better target public policies in health and education[4]. Thus, the importance and necessity of research on the association of literacy in health, social determinants, and self-rated of health are justified.

In this context, the objective of this study was to verify the association between health literacy, social determinants and self-rated of health in adult patients of Primary Health Care.

METHODS

There were 380 patients of the Unified Health System (SUS) interviewed in the context of Primary Health Care (PHC) in a city in the Metropolitan Region of Belo Horizonte, Minas Gerais, Brazil. The sample was probabilistic and stratified by gender, age group and Basic Health Unit (BHU) of reference. The research design was observational cross-sectional.

As inclusion criteria, age (20 to 59 years) was considered and the patient of the PHC in the municipality selected for data collection. Subjects with a manifestation of cognitive or neurological alterations that compromised the understanding of the interview questions were excluded from the study, as well as those that showed alterations in verbal or written expression that hinder to understand the answers by the researcher.

Data collection was performed from February to May 2015, lasting 20 to 30 minutes per interview. The patients were invited to participate in the research while awaiting the attendances in the BHU. All participants signed the Informed Consent Form (TCLE) and were interviewed individually.

The functional and communicative health literacy was the variable response of the study evaluated by the Health Literacy Scale (HLS) (Chart 1).

Chart 2 shows the instruments for evaluating the explanatory variables: social determinants of health and self-rated of health. It should be noted that, in terms of education level, the individual was considered to belong to each level of education regardless of having completed it.

A descriptive analysis of the socio-demographic data, self-rated of health and the Health Literacy Scale was performed. For the association analysis, the standardized health literacy score (divided into better or worse perception) and the Pearson's Chi-square test were used in which the results with values of $p \leq 0.05$ were considered as significant. Statistical Package for the Social Sciences, version 21.0 was used for the input, processing, and analysis of the data.

For a better analysis of the data, some variables had their items transformed and standardized as described below:

a) "How do you rate your health?" - item presented on a Likert five-point scale: 1-very bad, 2- bad, 3- indifferent, 4- good, 5- very good. The "very bad", "bad" and "indifferent" answers have been changed to "bad/indifferent" and the "good" and "very good" answers indicate "good".

b) Questions about "how often do you think about your health" and "how often do you think about health problems" - five-point Likert answers: 1- never, 2- rarely, 3- sometimes, 4- often, and 5-always. The answers "never", "rarely" and "sometimes" were grouped into a single answer, as well as "always" and "often".

The research was authorized by the Municipal Health Department, as well as by the managers of the 16 BHUs of the municipality. The approval of the Research Ethics Committee of the Federal University of Minas Gerais was obtained under CAAE opinion: 25014513.7.0000.5149.

Chart 1. Objective, questions, answers, and analysis of the Health Literacy Scale

Health Literacy Scale (ELS)		
Objective: to evaluate the perception of adults about the understanding of health guidelines and possible difficulties in this process.		
Functional Health Literacy	**Questions (n=9)** *"How often do you ..."* 1. *"... have difficulty reading/understanding pamphlets with healthcare guidelines?"* 2. *"...have difficulty reading/understanding/filling out forms with information about your health?"* 3. *"...have difficulty reading/understanding the medical or other health care provider's written instructions?"* 4. *"...have difficulty understanding the guidelines spoken by health professionals?"* 6. *"...have difficulties in understanding your health condition because you did not understand the explanations/guidelines given by the doctor/another health professional?"* 7. *"Do you need help from someone (relatives, friends) to help you understand the guidelines given for your treatment/therapy, such as the use of medications, returns, test scores, etc.?"* 9. *"...leave a consultation/therapy with questions about your health?"*	**Analysis of results** **Answers:** The standardized score to generate values from 0 to 100, in which: - Values lower than 79.8 indicate a worse perception of health literacy. - Greater or equal to 79.8 indicates a better perception of health literacy.
Communicative health literacy	5. *"...have difficulties in marking exams or new consultations for not having understood well the doctor's/other health professional's instructions, whether written or spoken?"* 8. *"...have difficulty finding information that will help you to take care of your health?"*	

Chart 2. Instruments of evaluation of the social determinants of health and self-rated of health

| EXPLANATORY VARIABLES	INSTRUMENTS
Social Determinants of Health	**Sociodemographic questionnaire** Age Genre Education level **Brazil's Economic Classification Criteria (CCEB)**[13] - Indicator to estimate the purchasing power of individuals and families. - Analysis of the possession of items and degree of instruction of the head of the family. - Determines the economic classification from A to E (A represents greater purchasing power).
self-rated health	**Self-rated Questionnaire** *Perception of one's own health: frequency in which one thinks about one's own health and health problems, the perception of oneself as a healthy person.* *Self-rated of health: Question "How do you evaluate your health?" Score for their health (from zero to ten, in whole numbers, zero being very bad health and ten being excellent health).* *The frequency of attendance at BHU.*

RESULTS

Regarding the social determinants of health, 51.6% of the interviewees are women, with a median age of 37 years old. Among the 360 adults who answered to the CCEB in its entirety, 0.6% belong to classes A1 and A2; 33.9%, to classes B1 and B2; 56.4%, to classes C1 and C2; 9.2%, to classes D and E. Regarding the education level, it was observed that most of the 375 respondents attended high school (45.3%), with the percentage of people attending elementary school (42.9%) and lower than those with higher education or postgraduate studies (11.7%).

Figure 1 shows the quantitative analysis of self-rated of health. It is observed that most of the respondents felt healthy (79.2%), with good health (60.0%), always think about health (43.7%) and health problems (38.4%).
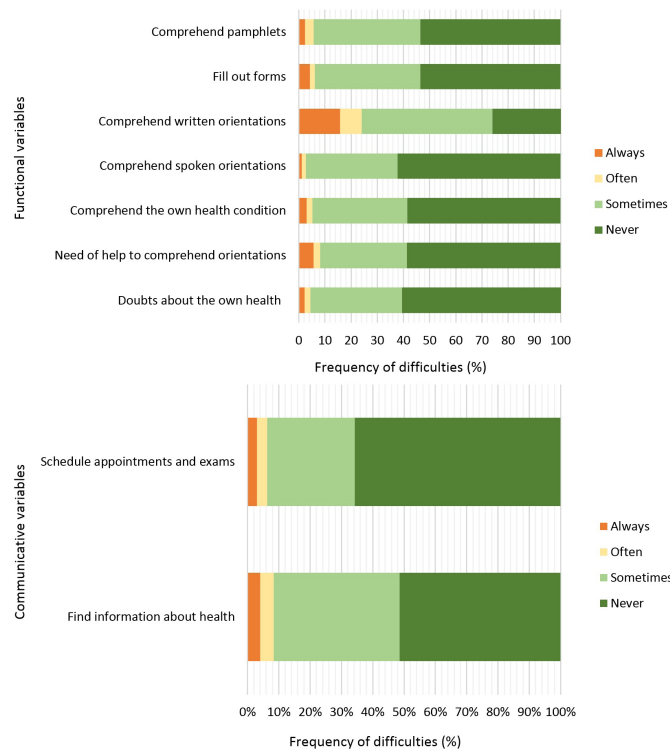
Figure 2 shows the analysis of the frequency of difficulties in the items of the Health Literacy Scale divided by the functional and communicative axes, respectively.

Figure 3 shows the analysis of the median age of the interviewees with the answers regarding the evaluation and score for their health, Health Literacy Scale score and frequency of attendance at the Basic Health Unit (BHU). It was possible to verify that patients with median age of 40 years old or higher tend to assign a worse classification to their own health (very poor to indifferent). Those with a median age between 30 and 40 years old tend to classify it as good or very good. Regarding the score for health, it was observed that the lowest score (zero) was attributed by patients with median age between 50 and 59 years old, the highest age group of the sample. On the other hand, the highest score (ten) was reported by patients with a median age of around 40 years old. Regarding the perception of literacy in health, it was found that patients with a median near
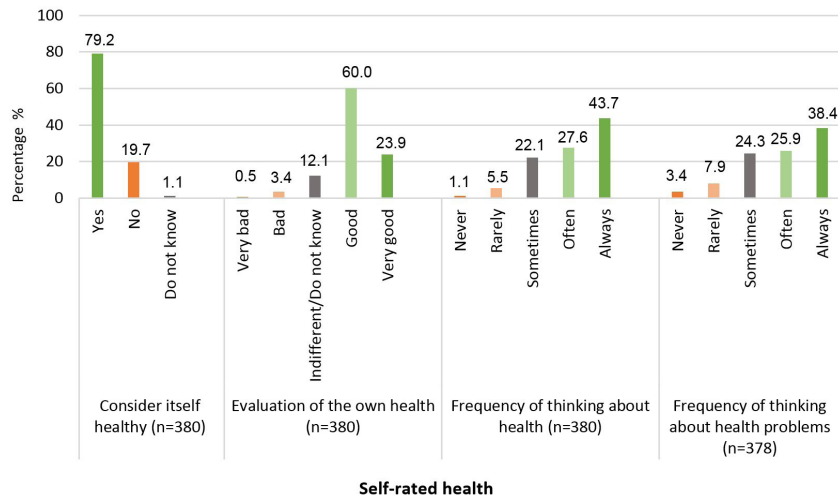
Captions: RMBH = Metropolitan Region of Belo Horizonte, Minas Gerais, Brazil
Figure 1. Graphic of the frequency distribution of health self-rated variables, municipality of RMBH, 2015

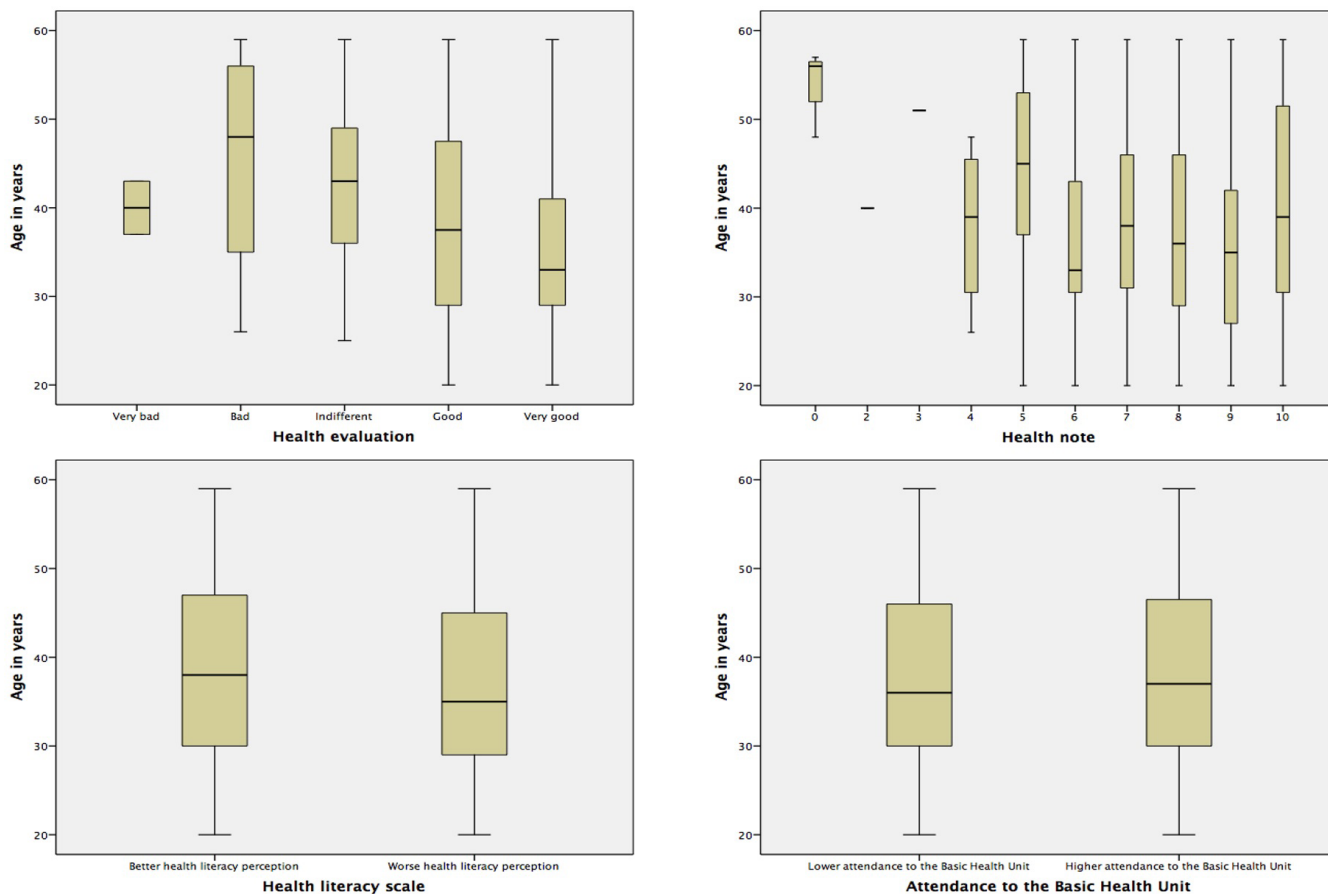**Captions:** RMBH = Metropolitan Region of Belo Horizonte, Minas Gerais, Brazil
Figure 2. Graphic of the frequency distribution of difficulties in the items of the Health Literacy Scale, according to the functional and communicative axes, municipality of RMBH, 2015

30 years old present better perception and those with a median near 40 years old had a worse perception. Finally, the frequency of attendance at BHU showed a certain homogeneity, in which patients with a median age of about 35 years old reported the highest and lowest frequency of attendance.

Table 1 shows the association between the Health Literacy Scale and social determinants of health. It was observed an association with a statistical significance of literacy perception in health with education level and CCEB (p <0.001 and p = 0.010, respectively).

No association was found with statistical significance between the literacy perception in health and age.

The analysis between the HLS score and health self-rated aspects revealed that there is an association with statistical significance between the perception of health literacy and health self-assessment (Table 2). Thus, it was found that patients with a better perception of health literacy rate their own health as being more frequent than those with poorer perceptions of health literacy. The other associations did not show statistically significant results.

Captions: RMBH = Metropolitan Region of Belo Horizonte, Minas Gerais, Brazil
Figure 3. Boxplot of questions of self-rated, literacy in health and attendance frequency at the Basic Health Unit by median age, municipality of RMBH, 2015

Table 1. Association between the results of the Health Literacy Scale and social determinants of health, municipality of RMBH, 2015

Social Determinants of Health	Classification of Health Literacy (HL)			
	Worst perception HL N (%)	Better perception HL N (%)	Total[a] N (%)	p-value[b]
Age				
20 to 39 years old	101 (27.4)	121 (32.9)	222 (60.3)	0.090
40 to 49 years old	47 (12.8)	32 (8.7)	79 (21.5)	
50 to 59 years old	35 (9.5)	32 (8.7)	67 (18.2)	
Total	183 (49.7)	185 (50.3)	368 (100.0)	
Education level[c]				
Elementary	96 (26.1)	58 (15.8)	154 (41.8)	**<0.001**
High school	74 (20.1)	96 (26.1)	170 (46.2)	
Higher education or Post-graduation	13 (3.5)	31 (8.4)	44 (12.0)	
Total	183 (49.7)	185 (50.3)	368 (100.0)	
Brazil's Economic Classification Criteria (CCEB)				
A2/B1/B2	54 (15.0)	70 (19.4)	124 (34.4)	**0.010**
C1/C2	103 (28.6)	100 (27.8)	203 (56.4)	
D/E	24 (6.7)	9 (2.5)	33 (9.2)	
Total	181 (50.3)	179 (49.7)	360 (100.0)	

[a]Varies due to missing data; [b]Pearson's Chi-square test; [c]Incomplete or complete level of education
Captions: RMBH = Metropolitan Region of Belo Horizonte, Minas Gerais, Brazil

Table 2. Association between the results of the Health Literacy Scale and aspects of self-rated of health, municipality of RMBH, 2015

Aspects of self-rated of health	Classification of Health Literacy (HL)			
	Worst perception HL N (%)	Better perception HL N (%)	Total[a] N (%)	p-value[b]
Think of health				
Never/Rarely/Sometimes	58 (52.2)	47 (44.8)	105 (100.0)	0.18
Always/Often	125 (47.5)	138 (5.5)	263 (100.0)	
Total	183 (49.7)	185 (50.3)	368 (100.0)	
Think about health problems				
Never/Rarely/Sometimes	68 (52.7)	61 (47.3)	129 (100.0)	0.40
Always/Often	114 (48.1)	123 (51.9)	237 (100.0)	
Total	182 (49.7)	184 (50.3)	366 (100.0)	
Assessment of their health				
Bad/Indifferent	38 (65.5)	20 (34.5)	58 (100.0)	**0.01**
Good	145 (46.8)	165 (53.2)	310 (100.0)	
Total	183 (49.7)	185 (50.3)	368 (100.0)	

[a]Varies due to missing data; [b]Pearson's Chi-square test
Captions: RMBH = Metropolitan Region of Belo Horizonte, Minas Gerais, Brazil

DISCUSSION

In this study, the association between HLS classification and aspects of self-perceived health revealed that patients who present better perception of health literacy tend to better evaluate their own health.

Literacy is an important indicator of health as self-rated since it is strategic in the dimension of thought and care of their health[14] and it is related to the individual's well-being and to their satisfaction with life[15]. Thus, literacy in health involves understanding written materials, understanding spoken directions, associated with their prior knowledge and cultural knowledge[16]. These findings corroborate the literature that indicates that having better literacy in health is related to better care, cost reduction, knowledge of health[16], participation in preventive exams and regular physical activity[17].

In a study of 1753 elderly people in Kosovo, the mean health literacy was significantly lower for those who reported poorer self-rated health (p <0.001)[18]. Similarly, young homeless people in Ghana (n = 290) with limited health literacy tend to perceive their own health as worse[19].

The importance of health literacy is also pointed out in a study carried out with 924 adults in Iran, where low literacy in health and poorer perception of health are associated with self-medication by individuals, a major public health problem worldwide[20].

Regarding the analysis of the HLS score with the social determinants of health, there were statistically significant associations with education level and CCEB. It was possible to observe a higher frequency of individuals with more level of education (high school and higher education) among those with a better perception of health literacy. On the other hand, lower education level (elementary school) predominated among those who presented worse perception of health literacy.

Studies that have evaluated health literacy through other instruments, such as the European Health Literacy Survey (HLS-EU)[9], Brief Test of Functional Health Literacy (B-TOFHLA)[10] and Short Assessment of Health Literacy for Portuguese-speaking Adults (SAHLPA)[6] also identified an association between poorer literacy in health and lower level of education.

Regarding the CCEB, it was verified that the best perception of health literacy is more recurrent among the individuals with higher economic classification (A2/B1/B2). Also, there was a higher frequency of individuals from lower economic classes (D/E) among those who showed the worse perception of health literacy. These findings corroborate research developed in the Netherlands with 925 adults, in which there were more literacy difficulties in health among those interviewed who reported lower social status. In the same study, in the question of access and understanding of health information, it was also observed that the group with lower income presented lower scores of health literacy[9]. Thus, actions in functional health literacy aimed at this population group are fundamental to build autonomy and self-care. This process demands equal dialogue between health professionals and the community[21]. It is not a matter of developing strategies that teach the population about decisions about health, but to create the conditions and spaces to instrumentalize conscious choices for the most vulnerable and to sensitize the PHC teams on the theme.

It should be noted that the literature indicates that economic differences and lower levels of education do not only influence health literacy but may also be associated with a worse health perception[13].

When considering the relationship between age and aspects of evaluation and score for health, results similar to other studies were observed[7,19]. In a study that evaluated 3009 adult PHC patients in southern Brazil, having an older age favored a poorer self-rated of health[16]. Another research, in the same region of Brazil, identified an association between poor self-rated of health and greater age range among adults and the elderly people[8].

Regarding the relationship between age and perception of health literacy, the findings corroborate the literature, which shows that higher age is associated with poorer literacy in health

when evaluated by the Brief Test of Functional Health Literacy (B-TOFHLA)[10] and SAHLPA-50[6].

Concerning the age and frequency of attendance at the BHU, it was expected that individuals of a higher age would be those who would attend the BHU more frequently, as observed in another study in which older and more use of the PHC service (at least four visits/year) were associated with poorer self-rated of health[22]. However, the findings are possibly justified by the fact that the sample is composed of adults and does not include the elderly population.

Regarding the frequency distribution of HLS items in the functional axis, it was verified that most of the patients reported never having difficulties in the situations presented in the scale, except for the issue of understanding written guidelines. In this regard, the majority said that sometimes it presents difficulties. In the communicative axis of HLS, it was possible to verify the predominance of the perception of never having difficulties to mark exams/consultations, nor to find information about health care.

The international literature, in agreement with the results of this study, evidences the necessity of adequacy of written health materials to improve understanding. Ideally, written communication should emphasize the essentials, be short, simple, and free of jargon[23]. However, the reach of such ideal written material is indeed challenging, which justifies the difficulties of the patients observed in this study. Japanese researchers dedicated to training 64 public health service nurses, resulting in less than half of them (45%) gaining confidence in evaluating and reviewing written health materials. Even after training, nurses reported the need to learn more about language simplification to be able to paraphrase technical terms[24]. The data of this research indicate the necessity of the discussion about the profile of the orientations that can reflect the quality of the offered assistance and of the communicative relationships established between patients and health team. In this way, overcoming the premise that it is necessary, above all, to provide access to more information and to consider that the fundamental is dialogic relationships that build stronger communication processes between the team and the patient are major challenges in health work.

The results of this study are restricted to the patients of Primary Health Care in the evaluated municipality. Moreover, because of its cross-sectional design, this study does not allow establishing the causal relationships between the variables analyzed.

In contrast to these limitations, it should be emphasized that the instrument used in this study evaluates literacy in health through the perception of the difficulty of individuals in everyday health situations. The differences with other tests is that measure health literacy by pronunciation, understanding of medical terms and health information materials, for example[6,10]. Since health literacy is a multi-dimensional concept that varies the perceived difficulties in accessing, understanding, evaluating, and applying health information[9], the HLS assessment approach is appropriate. Therefore, it is believed that the analysis of health literacy associations (through an emphasis on the perceptions of patients' difficulties) with social determinants of health and aspects of self-rated of health has contributed to the understanding of the theme and the direction of health interventions.

CONCLUSION

The analysis of the association between the classification of the Health Literacy Scale and health evaluation showed that patients with better perceptions of health literacy tend to have a better evaluation of their health. This finding is important since it showed a significant relationship between these aspects considered as health indicators.

Analyses of the classification of health literacy and the social determinants of health showed that better education and higher economic classification tend to indicate a better perception of health literacy. Also, in the analysis of HLS items, it was verified that patients reported not presenting difficulty in most situations related to health literacy.

It is important to highlight the contribution of the instrument used, which evaluates health literacy in everyday situations. It is expected that the results found will contribute to a better understanding of these issues and will lead to practices, interventions, and new studies.

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Author contributions