

**LITERACIA EM SAÚDE EM ESTUDANTES DO ENSINO SUPERIOR:  
COMPARAÇÃO ENTRE ESTUDANTES DE ENFERMAGEM E ESTUDANTES DE OUTRAS ÁREAS  
LITERACIA EM SAÚDE EM ESTUDANTES DO ENSINO SUPERIOR DE VISEU**

**Odete Amaral**

UICISA: E Research Centre,  
Unidade de Enfermagem de Saúde Pública,  
Familiar e Comunitária, Escola Superior de Saúde de Viseu,  
Instituto Politécnico de Viseu  
mamaral@essv.ipv.pt

**Ana Rita Pedro**

Escola Nacional de Saúde Pública,  
Universidade Nova de Lisboa.  
Comprehensive Health Research Centre (CHRC) - Pólo ENSP  
rita.pedro@ensp.unl.pt

**Nélio Veiga**

Centre for Interdisciplinary Health Research (CIHS) – Universidade Católica Portuguesa, Viseu, Portugal  
nelioveiga@gmail.com

**Ana Escoval**

Escola Nacional de Saúde Pública,  
Universidade Nova de Lisboa.  
Comprehensive Health Research Centre (CHRC) - Pólo ENSP  
anaescoval@ensp.unl.pt

**Manuela Ferreira**

UICISA: E Research Centre,  
Escola Superior de Saúde de Viseu,  
Instituto Politécnico de Viseu  
mmcferreira@gmail.com

*Recepción Artículo: 18 mayo 2021  
Admisión Evaluación: 18 mayo 2021  
Informe Evaluador 1: 22 mayo 2021  
Informe Evaluador 2: 27 mayo 2021  
Aprobación Publicación: 02 junio 2021*

**RESUMO**

**Introdução:** Cada vez mais, a literacia em saúde é considerada uma prioridade em saúde pública. A associação entre literacia e saúde é essencial para a promoção da saúde, prevenção da doença e utilização dos serviços de saúde. Os objetivos deste estudo foram determinar o nível de literacia em saúde em estudantes do ensino superior e identificar fatores associados. **Métodos:** Realizámos um estudo transversal analítico, com uma amostra de 503 estudantes do ensino superior das cinco escolas do Instituto Politécnico de Viseu, Portugal. A maioria da amostra era do género feminino (67,4%); idade média de 21,59±4,35 anos, 43,3% a viver em zona rural e

## LITERACIA EM SAÚDE EM ESTUDANTES DO ENSINO SUPERIOR: COMPARAÇÃO ENTRE ESTUDANTES DE ENFERMAGEM E ESTUDANTES DE OUTRAS ÁREAS LITERACIA EM SAÚDE EM ESTUDANTES DO ENSINO SUPERIOR DE VISEU

55,3% dos estudantes frequentava o curso de enfermagem. Os dados foram recolhidos através de um questionário auto-aplicado e constituído por perguntas sociodemográficas, académicas e pelo questionário de literacia em saúde versão portuguesa (HLS-EU-PT). **Resultados:** A maioria dos estudantes (53,9%) apresentava um nível de literacia global suficiente. Em todos os domínios do questionário de literacia a maioria dos estudantes apresentou um nível de literacia em saúde suficiente ou problemático. As variáveis sociodemográficas não se associaram significativamente com a literacia em saúde. Quanto às variáveis académicas, ser estudante de enfermagem associou-se positivamente com o nível de literacia ( $p=0,01$ ) e os jovens 'estudantes-trabalhadores' apresentaram pior nível de literacia em saúde no domínio da promoção da saúde (OM = 212,72 vs. 258,04  $p=0,02$ ).

**Conclusões:** Este estudo sugere que é necessário melhorar o nível de literacia em saúde dos jovens, futuros adultos e, alguns, futuros profissionais de saúde.

**Palavras-Chave:** literacia em saúde; estudantes; ensino superior; estudos epidemiológicos; enfermagem

### ABSTRACT

**Health literacy in higher education students: comparison of nursing students with students from other areas. Health literacy in higher education students in Viseu. Introduction:** Increasingly, health literacy is considered a public health priority. The association between literacy and health is essential for health promotion, disease prevention and use of health services. The objectives of this study were to determine the level of health literacy in higher educational students and to identify associated factors. **Methods:** We carried out an analytical cross-sectional epidemiological study with a sample of 503 higher educational students from the five schools of the Polytechnic Institute of Viseu, Portugal. The majority of the sample was female (67.4%); mean age of  $21.59 \pm 4.35$  years, 43.3% lived in rural areas and 55.3% of the students attended the nursing course. The data was collected through a self-administered questionnaire and presented socio-demographic and academic variables and also the Portuguese version of the health literacy questionnaire (HLS-EU-PT). **Results:** Most students (53.9%) had a sufficient level of overall literacy. In all domains of the questionnaire, most students presented a sufficient or problematic level of health literacy. Nursing students presented higher averages of health literacy, in general and in all domains, compared to students in other courses. Sociodemographic variables were not significantly associated with health literacy. Regarding the academic variables, being a nursing student was positively associated with the level of literacy ( $p = 0.01$ ) and the young 'student-workers' had a lower level of health literacy in the health promotion field (Average Order = 212.72 vs. 258.04,  $p = 0.02$ ). **Conclusions:** This study suggests that it is necessary to improve the level of health literacy of young people, future adults and some future health professionals.

**Keywords:** health literacy; students; education higher; epidemiological study; nursing

### INTRODUCTION

Health literacy is a complex and evolving construct, although over the last decades scientific research dealing with that issue has been gaining an increasing importance (Chinn & McCarthy, 2013; Sørensen, et al., 2012). Literature has shown how that literacy interferes with the improvement of the health status of populations. On the one hand, better levels of literacy positively influence health, impacting health care costs and utilization, disease promotion and prevention. On the other hand, inadequate health literacy has a negative impact on one's ability to access and use health care, interact with professionals and take care of oneself (Berkman, Davis, & McCormack, 2010; Muhanga, & Malungo, 2018). It also shows that when the level of health literacy is inappropriate, it can negatively affect the capacity of a person to access and use health care resources, to interact with the health professionals and to take care of him/herself (Berkman, Davis, & McCormack, 2010; Muhanga, & Malungo, 2018). Health literacy influences the way in which individuals are prepared to make appropriate health decisions in everyday life. On the one hand, an individual with an adequate level of health literacy has a greater capacity to take responsibility for his health, for his family's health and for the health of his community. This type of person will be more likely than others to follow healthy lifestyles and to carry out routine health screening (Muhanga, &

Malungo, 2018; Sørensen, et al., 2012). On the other hand, inadequate health literacy is associated to a higher risk of comorbidities, higher rates of mortality, anxiety/depression, improper use of health services (especially in relation to their use of emergency services) (Puentes-Maestu et al., 2016). Several people find that it is difficult to navigate the existing healthcare systems and often fail to understand the information provided from healthcare providers and organizations. This difficulty makes it hard for them to effectively manage their healthcare needs. The lack of health literacy is more serious when healthcare professionals, including nursing students, lack the proper knowledge and skills to address the needs of patients with lower health literacy. Nursing students' lack of training about health literacy contributes to this gap in their knowledge and skills, as well as their inability to provide high-quality patient-centred care due to poor communication skills (Mullan et al., 2017).

Health literacy refers, broadly, to the ability of individuals to have access, understand and use health-related information daily. In 1998, WHO defined health literacy as a set of *"cognitive and social skills which determine the motivation and the ability of individuals to gain access to, understand and use information in ways which promote and maintain good health (WHO, 1998)"*. According to Sørensen et al., (2012) *"Health literacy has been defined as the knowledge, motivation and competence to access, understand, appraise, and apply information in everyday life to make judgments and decisions about health care, disease prevention and health promotion, and to maintain and promote quality of life throughout the life course"* (Sørensen et al., 2012).

We weren't able, taking into account the different studies we had the opportunity to analyse, to establish a consistent relationship between health literacy and socio-demographic variables (gender, age and education). Negative associations between age and health literacy were observed in studies conducted in Austria, Bulgaria, Greece, Spain, Poland and Portugal (Sørensen et al., 2015; Pedro, Amaral, Escoval, 2016) and in Japan a positive association between those variables was established (Nakayama et al., 2015). A study conducted in Porto and that used a sample of 253 individuals over the age of 15- showed that age groups formed by people whose age ranged between 46 and 55 and by individuals who were over 66 were those who reveal the highest inadequate level of health literacy; participants who tended to exhibit problematic health literacy were those who were between 46 and 55 years old and between 56 and 65 years old. Participants who were 26-35 years old were those who, most frequently, showed sufficient or even excellent health literacy (Gonçalves, 2015). The association between age and the Overall Health Literacy Index was significant ( $c^2=21,417$ ;  $p=0,018$ ) (Gonçalves, 2015).

All possible effort should be made to develop to promote health literacy among children and young people; during their childhood and youth. Children experience numerous processes of cognitive, physical and emotional growth and develop health-related habits, behaviours and skills. Health providers, namely nurses and nursing students, play an extremely important role in the training and in the development of health literacy among all age groups and throughout their entire life cycle. According to the competences of nurses, they should perform functions in terms of health protection and promotion, disease prevention, empowerment of the individual, family, groups and communities, to manage the health information of groups and communities. Therefore, they must be active members and responsible for raising the level of health literacy of the individual, families and communities. Thus, it is essential that the training of nursing students enables and empowers them so that the exercise of their functions contribute to the health training and literacy of the individual, families, groups and communities. This study aims to determine the level of health literacy in higher education students, to identify associated factors and to compare the level of health literacy of nursing students and students from other courses.

## Materials and Methods

We have conducted an analytical cross-sectional study. We handed out 600 questionnaires and collected 503 of them fully completed (83.83%). The final sample was composed of 503 students who were attending one of the five organic units of the Instituto Politécnico de Viseu (Polytechnic Institute of Viseu) (Escola Superior de Saúde de Viseu (Higher School of Nursing); Escola Superior de Educação de Viseu (Higher School of Education); Escola Superior de Tecnologia e Gestão de Viseu (Higher School of Technology and Management of Viseu); Escola Superior Agrária de Viseu (Higher School of Agronomy) e Escola Superior de Tecnologia e Gestão de

## LITERACIA EM SAÚDE EM ESTUDANTES DO ENSINO SUPERIOR: COMPARAÇÃO ENTRE ESTUDANTES DE ENFERMAGEM E ESTUDANTES DE OUTRAS ÁREAS LITERACIA EM SAÚDE EM ESTUDANTES DO ENSINO SUPERIOR DE VISEU

Lamego (Higher School of Technology and Management of Lamego). Concerning socio demographic variables, 339 (67.4%) of them were female with a median age of  $21,59 \pm 4,35$  years (respondents' age ranged between 18 and 51 years). 69.8% of the respondents were  $\leq 21$  years and 30.2% were  $\geq 22$  years; 43.3% of the surveyed students were living in a village, 38.8% of them were living in the city and 17.9% of them in a small town. 55.3% of the respondents were attending nursing school at the Escola Superior de Saúde de Viseu.

Data were collected between March and June 2017 using a self-administered questionnaire, which started with a brief introduction, with information about the objectives of the study and requested the students' cooperation. Confidentiality and anonymity were ensured. The students answered the questionnaire in the classroom. Once the questionnaires were completed, they were placed by the student in a closed envelope. The opening of the envelope was carried out by one of the researchers in charge of the study who immediately codified the document. The research project has the positive opinion of the Ethics Committee of Higher School of Nursing of Viseu.

The questionnaire included questions about the respondents demographic and academic characterization as well as the European Health Literacy Questionnaire (HLS-EU) in the Portuguese version (HLS-EU-PT) (Pedro, Amaral, Escovo, 2016). The scale consists of 47 questions and the score for each item ranged between 1 and 4 (1 would stand for "very difficult" and 4 for "very easy"). Participants were asked to mention the degree of difficulty they experience when they carry out relevant tasks in the management of their healthcare.

The instrument includes aspects that are related to three different health-related dimensions – 16 questions that are meant to gather information about *health care* (1-16); 15 questions that have to do with *disease prevention*: (17-31) and 16 questions that will deal with aspects related to *health promotion* (32-47). It also comprehends four levels of information processing which are essential to the respondents' decision-making process – *access, understand, appraise and apply*. In order to guarantee the indexes calculation and to ensure the comparison between them, the 4 calculated indexes were standardized in a variable metric scale ranging from 0 and 50, in which 0 will represent the lowest possible health literacy and 50 the highest possible level of health literacy. The following cut-off points have been identified for each of the 4 levels: scores  $\leq 25$  points = inadequate health literacy; scores between 25 and 33 points = problematic health literacy; scores between 33 and 42 = sufficient health literacy and scores between 42 and 50 = excellent health literacy.

Data analysis was carried out using the *Statistical Package for the Social Sciences* program (SPSS 24.0)

### Results

Taking into account professional variables, evidence showed that 13.3% of higher education students were working students and most of them had a part time job (50.0%); 60.3% of the student workers enjoyed work-study status.

According to the following Table, 4.0% of the surveyed students showed inadequate overall health literacy; 28.6% of them demonstrated problematic health literacy; 53.9% of them revealed sufficient health literacy and 13.5% excellent overall health literacy (Table 1). The analysis of the data related to the *health care* dimension proved that 5.4% of the students revealed inadequate health literacy; 25.0% of them problematic literacy; 56.5% a sufficient level of literacy and, finally, that 13.1% of them possessed an excellent level of literacy in that particular area/dimension. The analysis of the data regarding *disease prevention* showed that the majority of the participants (52.5%) proved to have a sufficient health literacy level, that 25.6% of the participants had a problematic literacy level, 17.7% of them had an excellent literacy level and that only 4.4% of them seemed to have inadequate literacy. Finally, the data collected about *health promotion* proved that 4.0% of the surveyed students presented an inadequate literacy level, 28.6% a problematic level, 13.5% an excellent literacy level and that the majority of them (53.9%) revealed a sufficient level of health literacy. In all the dimensions, the majority of the respondents showed a sufficient level of health literacy. The information collected also proved that there is a significant percentage of participants whose answers revealed a problematic level of health literacy.

Table 1 - Health Literacy Levels- HLS-EU-PT scale

	Dimensions							
	Health care		Disease Prevention		Health Promotion		Overall	
	n	%	n	%	n	%	n	%
<b>Health Literacy Levels</b>								
Inadequate	27	5.4	22	4.4	33	6.6	20	4.0
Problematic	126	25.0	129	25.6	121	24.1	144	28.6
Sufficient	284	56.5	264	52.5	261	51.9	271	53.9
Excellent	66	13.1	88	17.5	88	17.5	68	13.5

When we analysed the levels of health literacy and the respondents' gender, we found out that the percentages between male and female participants are very similar. However, girls presented better levels of health literacy than boys (54.3% of the female respondents showed sufficient health literacy while that percentage dropped to 53.0% among male students; an excellent literacy level was found among 14.2% of the female group and among 12.2% only of the male public). Male students showed higher levels of inadequate and problematic health literacy (6.1% and 28.7% respectively) while female students revealed significantly lower percentages (2.9% and 28.6%; respectively). However, the differences were not statistically significant.

A clear association between the socio-demographic variables studied and the overall levels of health literacy and its dimensions couldn't be established. The analysis of the answers that aimed to establish a relationship between the respondents' socio-demographic variables and their level of health literacy showed that female students who were ≥ 22 years, who were married/ in a non-marital partnership and who were living in a urban environment are the participants who present higher health literacy levels (average order = 254.22; 254.08; 262.50; 258.39 respectively). However, differences were not significant.

As we analysed the relationships between the participants' academic variables and their health literacy levels, we could confirm the existence of a higher level of health literacy among "nursing student" (average order (AO) = 268.28 vs. 233.73, p = 0.01). We could also confirm that being a nursing student has a clear influence over the scorings obtained in the different dimensions of the scale (health care - average order = 267.93 vs. 234.12, p = 0.01; disease prevention - average order = 265.06 vs. 237.34, p = 0.03; promotion of Health - average order = 263.79 vs. 238.77, p = 0.05). As far as the variable "student worker" is concerned, we have verified that students who manage to combine work and school presented a worse level of health literacy in the health promotion dimension (average order = 212.72 vs. 258.04, p = 0.02) (Table 2).

Table 2 - Relationship between health literacy and academic factors

	Dimensions											
	Health Care			Disease Prevention			Health Promotion			Overall health literacy		
	AO	KW	p	AO	KW	p	AO	KW	p	AO	KW	p
<b>Nursing student</b>												
Yes	267.93			265.06	28047.50	0.03	263.79	28384.50	0.05	268.28	27191.50	0.01
No	234.12	27282.50	0.01	237.34			238.77			233.73		
<b>Student worker</b>												
Yes	246.52	14239.00	0.74	236.72	13582.00	0.35	212.72	11974.50	0.02	226.77	12915.50	0.13
No	252.84			254.35			258.04			255.88		

Variables like "IPV organic unit" and "year of the course you attend" have a positive relationship with the overall level and the different dimensions of health literacy (p < 0.01). Evidence also showed that the average order values obtained in the *health care* dimension increase as the students' school level increases too. The same can be said for the other dimensions and for the participants' overall level of health literacy: AO values are higher in 1<sup>st</sup>, 2<sup>nd</sup> and 4<sup>th</sup> year students. On the contrary, 3<sup>rd</sup> year students showed lower health literacy. When we analyzed the case of students who were attending a postgraduate course, data showed that they had the lowest levels of overall health literacy and in all the three health dimensions studied (Table 3). The analysis of the collected data

**LITERACIA EM SAÚDE EM ESTUDANTES DO ENSINO SUPERIOR:  
COMPARAÇÃO ENTRE ESTUDANTES DE ENFERMAGEM E ESTUDANTES DE OUTRAS  
ÁREAS LITERACIA EM SAÚDE EM ESTUDANTES DO ENSINO SUPERIOR DE VISEU**

about the relationship between each IPV and the students' health literacy levels showed that the students who were attending the Higher School of Nursing were those who revealed a higher level of health literacy with AO = 264.35. The only dimension in which they hadn't obtained the highest score was the health promotion dimension in which they were surpassed by the students of the Higher School of Technology and Management of Lamego (AO = 276.18 vs. 260.01) (Table 3).

*Table 3 - Relationship between health literacy and the students' school and their school year*

	Dimensions											
	Heath care			Disease Prevention			Health Promotion			Overall Health Literacy		
	AO	KW	p	AO	KW	p	AO	KW	p	AO	KW	p
<b>School</b>												
HSTMV	237.99			247.05			227.55			236.91		
HSNV	264.35			260.79			260.01			263.84		
HSAV	223.46	5.51	0.24	241.26	3.00	0.56	242.10	4.94	0.29	228.73	5.52	0.24
HSTGL	253.42			248.10			276.18			260.63		
HSEV	234.83			228.16			238.21			229.34		
<b>Year</b>												
1st	237.71			233.96			244.51			241.05		
2nd	274.77			269.76			270.75			274.69		
3rd	226.10	15.09	<b>0.005</b>	214.58	28.50	<b>≤0,001</b>	210.51	21.51	<b>≤0,001</b>	208.63	25.32	<b>≤0,001</b>
4th	295.21			327.29			309.60			314.25		
Postgraduate course	209.63			281.79			241.42			237.21		

Legend: AO - average order. HSTMV - Higher School of Technology and Management of Viseu; HSNV - Higher School of Nursing of Viseu; HSAV - Higher School of Agronomy of Viseu; HSTML - Higher School of Technology and Management of Lamego HSEV -Higher School of Education of Viseu;

When we tried to establish a relationship between health literacy and the school year attended by the Higher School of Nursing Students, we found out (Table 4) that there is a positive association between the school year students were attending and their overall health literacy level and between that variable and dimensions such as *health promotion* and *disease promotion*. Forth year nursing students were those who exhibit the highest levels of health literacy while the lowest values were obtained by third year students.

*Table 4 - Relationship between health literacy and HSNV nursing students' school year*

	Dimensions											
	Heath care			Disease Prevention			Health Promotion			Overall Health Literacy		
	AO	KW	p	AO	KW	p	AO	KW	p	AO	KW	p
<b>School</b>												
HSTMV	237.99			247.05			227.55			236.91		
HSNV	264.35			260.79			260.01			263.84		
HSAV	223.46	5.51	0.24	241.26	3.00	0.56	242.10	4.94	0.29	228.73	5.52	0.24
HSTGL	253.42			248.10			276.18			260.63		
HSEV	234.83			228.16			238.21			229.34		
<b>Year</b>												
1st	237.71			233.96			244.51			241.05		
2nd	274.77			269.76			270.75			274.69		
3rd	226.10	15.09	<b>0.005</b>	214.58	28.50	<b>≤0,001</b>	210.51	21.51	<b>≤0,001</b>	208.63	25.32	<b>≤0,001</b>
4th	295.21			327.29			309.60			314.25		
Postgraduate course	209.63			281.79			241.42			237.21		

Legend: AO - average order. HSTMV - Higher School of Technology and Management of Viseu; HSNV - Higher School of Nursing of Viseu; HSAV - Higher School of Agronomy of Viseu; HSTML - Higher School of Technology and Management of Lamego HSEV -Higher School of Education of Viseu;

## DISCUSSION

The low level of health literacy is a public health problem (Protheroe, et al., 2017). This condition is directly associated with worse health outcomes, with poorer health choices, poorer understanding of health conditions, the inability to clearly understand medical information and preventive health measures. Poor health literacy is also associated with an increase in hospital stays/admissions and consequently with an increase in health-related expenses (Berkman, Davis, & McCormack, 2010; Muhanga, & Malungo, 2018; Cho, Lee, Arozullah, & Crittenden, 2008, Agency for Health Care Research and Quality 2011.) Other scientific evidence has shown that individuals with inappropriate health literacy levels have more problems when they have to deal with basic health activities, to follow prescriptions, to calculate the quantity of medicines they have to take, to communicate with health providers, to interpret the results of their medical testing and to understand the risks and benefits of different medical procedures (National Network of Libraries of Medicine, 2013). The information conveyed in the current study shows that 4.0% of students from various educational areas presented an inadequate overall health literacy level; 28.6% of them demonstrated a problematic overall literacy level; the level of health literacy evidenced by 53.9% of those students was sufficient and, finally, only 13.5% of them exhibited an excellent overall level of health literacy.

When we analyzed the situation of students from the 5 schools separately, HSNV presented the highest health literacy average order values. However, differences were not statistically significant. These results make it all the more important to implement strategies for the promotion of health literacy and to reinforce the role of health education in schools (WHO, 1998). Young people with low levels of health literacy will be society's future adults. A study conducted using a sample of 972 individuals (who were 18 years old or above and in which the majority of the participants (54.2%) were female) showed that people aged between 35 and 64 years were those who showed higher health literacy (50.6%), followed by the 18-34 age group (36.7%) and the age group composed by people who were 65 or older came third (12.7%). Evidence also showed that people who were 65 or older were those who evidenced a lower level of health literacy (49.5%), that the 35-64 age group came right after in that scale (36.6%) and, finally, that 13.9% of participants aged between 18 and 34 years had low health literacy (Protheroe, et al., 2017). The same study showed that the level of health literacy was significantly associated with different socio-demographic variables, in particular with the participants' age – respondents in the over 65 age group were more likely to have limited functional health literacy- (OR= 2.48 IC95% 1,54-4,02), with the participants' low level of education (OR = 3.13 IC95% 2,04-4,81) and with the way respondents perceived their health condition (Bad or very bad = OR = 2.27 IC95% 1.21-4,28) (Protheroe, et al., 2017). Individuals over the age of 65 years are more likely to have limited health literacy and less likely to make healthy and supported choices. This particularity is often attributed to a certain decline in cognitive function (Protheroe, et al., 2017). These results are in agreement with those obtained by Tomás, Queirós and Rodrigues (2015) [16] which stressed that functional health literacy declines with age and is higher among older students. These conclusions show the importance of developing and promoting health literacy at an early age. This decision will have a direct impact on the development of the child's health literacy as he grows up and, particularly, as he reaches adulthood. This assumption is crucial since we all know that adolescents absorb huge amounts of knowledge and behavioural patterns that they carry into adulthood and that will enable them to make appropriate and pertinent health decisions which will, in turn, lead to the healthy choices and health-promoting lifestyles they will adopt (Borzekowski, 2009; Chang, 2010; PaeK, & Hove, 2012).

In the current study, and in relation to the factors associated with health literacy, we only found significant association with professional variables. As far as the relationship between socio-demographic variables and the level of health literacy was concerned, we could observe that female students, who were  $\geq 22$  years, married/in a non-marital relationship and who were living in an urban environment are those who present higher averages of health literacy (AO = 254.22; 254.08; 262.50; 258.39 respectively). There was however no significant difference. The analysis of the kind of relationship between academic variables and health literacy proved that there was an association between the overall level of health literacy and the fact that the respondents were "nursing students" ( $p = 0.01$ ) for all the dimensions of the scale (*health care* AO = 267.93 vs. 234.12,  $p = 0.01$ ; *disease prevention* AO = 265.06 vs. 237.34,  $p = 0.03$ ; *health Promotion* AO = 263.79 vs. 238.77,  $p = 0.05$ ). As far as the variable

**LITERACIA EM SAÚDE EM ESTUDANTES DO ENSINO SUPERIOR:  
COMPARAÇÃO ENTRE ESTUDANTES DE ENFERMAGEM E ESTUDANTES DE OUTRAS  
ÁREAS LITERACIA EM SAÚDE EM ESTUDANTES DO ENSINO SUPERIOR DE VISEU**

“working student “is concerned, evidence showed that working students present a worse level of health literacy in the *health promotion* dimension (AO = 212.72 vs. 258.04,  $p = 0.02$ ). It seems fair to argue that healthcare students have easier access to health information, an assumption that will surely provide them with higher health literacy. This conclusion is reinforced by the fact that the students who have revealed a higher level of health literacy are for the most part students who were attending the Higher School of Nursing of Viseu (HSNV) (AO = 264,35). Considering that “*health literacy is based on the interaction between people’s capacities and their life contexts, the healthcare system, the educational system and the social and cultural factors of the community in which they live, the responsibility for improving health literacy levels should be shared among various sectors: the educational system, the healthcare system, the cultural system and other social sectors* (Brito, 2014, p. 41)”.

Studies that deal with assessment of health literacy in higher education students and studies that compare the level of health literacy of higher education healthcare students and the level of health literacy of students who are following other education areas are scarce. Even though health providers cannot take full responsibility for the promotion of health literacy, they clearly play a crucial role in this endeavour. During their training, nursing students start to adopt a certain attitude that will provide them with competences they will use to increase the level of health literacy among the general population that will, in turn, improve general health outcomes. This training will also be very important since it will give those students the ability and the tools that will enable them to take care of their own health. It is crucial that young nursing students and future nurses show a high level of health literacy that will facilitate the communication, the therapeutic relationship they will have to establish with their patients and the health education they will be expected to provide to the each individual, families and the community and that will enable a qualification of the those individuals, those families and that community that will represent a huge contribution to general health and to an increase of the quality of life and will, consequently, bring health gains.

As for the relationship between the year attended by the students of HSNV’s nursing course and those students’ health literacy level, evidence showed that there is a relevant association between the school year in which students are registered and the overall index of health literacy and the *health promotion* and *disease prevention* dimensions. Fourth year nursing students are those who have the highest level of health literacy. A study conducted in the United States of America showed that low health literacy is a serious issue in U.S. health care, suggesting that increasing and improving health literacy training for the healthcare workforce is needed (Coleman, 2011), especially for those who are not suitably prepared to effectively communicate with individuals/families with low health literacy (Ali, Ferguson, Mitha, & Hanlon, 2014). Another study conducted in North Carolina with higher education students (notably medical and nursing students) demonstrated that, in general, nursing students have low level of health literacy (Mullan, et al., 2017). These findings are in agreement with other studies (Johnson, 2014; Macabasco-O’Connell, & Fry-Bowers, 2011) and point out that nursing professionals may have limited knowledge to support individuals with low level of health literacy. This is clearly a problem that needs to be addressed considering that nursing course programmes do not include health literacy as part of their curriculum. Trainers must also play a crucial role in the training and the coaching of their students and have an impact on the betterment of students and future health professionals’ health literacy. A study conducted in 2017 suggests that the increase in the level of health literacy could be achieved (1) by incorporating health literacy into the policies and practices of health systems/organizations, making sure that health information is clear, focused and that it can be functionally used by the consumer; (2) by educating consumers about health literacy and (3) by integrating health literacy into healthcare providers’ training programmes (Mullan, et al., 2017).

There is an aspect that has not been assessed in this study and that we consider fundamental to further studies: the migration phenomenon. In future research, information about the students’ nationality and about their health literacy level will be indispensable. With the increase in the immigrant population, in cultural diversity and with the ever growing need to provide culturally competent healthcare, healthcare providers face new challenges that are caused by communication and cultural differences and by migrants’ health literacy level. Remarkably, health literacy has been an empowering tool to increase control over health, to improve the ability to access, ana-

lyze, understand and use health information for the promotion, prevention and use of health services. That way, people will follow a healthier life in the country where they live.

## CONCLUSIONS

With this study we can conclude most young students have a sufficient level of health literacy. The level of health literacy was significantly associated with several professional variables (being a nursing student; being a working student).

It is urgent to promote health literacy at an early age, in all the fields of training, and we have to accept that being familiar with the level of literacy of students who will become health professionals is fundamental to plan and implement suitable intervention strategies.

## Conflicts of Interest

The authors declare that they have no conflicts of interest.

## REFERÊNCIAS BIBLIOGRÁFICAS

- Chinn, D., & McCarthy, C. (2013). "All Aspects of Health Literacy Scale (AAHLS): Developing a tool to measure functional, communicative and critical health literacy in primary healthcare settings," *Patient Education and Counseling*, 90(2), 247–253.
- Sørensen, K., Van den Broucke, S., Fullam, J., Doyle, G., Pelikan, J., Slonska, Z., & Brand, H. (2012). Health literacy and public health: a systematic review and integration of definitions and models. *BMC Public Health*, 12(80) doi:10.1186/1471-2458-12-80.
- Berkman, N., Davis, T., & McCormack, L. (2010). Health literacy: What is it? *Journal of Health Communication*, 15(S2), 9-19.
- Muhanga, M.I., & Malungo, J.R. (2018). Health Literacy and Some Socio-Demographic Aspects under One Health Approach in Eastern Tanzania: Connections and Realities. *Urban Studies and Public Administration*, 1(1), 89-100.
- Puente-Maestu, L., Calle, M., Rodríguez-Hermosa, J.L., Campuzano, A., de Miguel Díez, J., Álvarez-Sala, J.L., ... Lee, S.Y. (2016). Health literacy and health outcomes in chronic obstructive pulmonary disease. *Respiratory Medicine*, 115, 78–82. doi:10.1016/j.rmed.2016.04.016.
- Mullan, J., Burns, P., Weston, K., McLennan, P., Rich, W., Crowther, S., ... Osborne, R.H., (2017). Health Literacy amongst Health Professional University Students: A Study Using the Health Literacy Questionnaire. *Education Sciences*, 7(2), 1-11.
- World Health Organization, *Health promotion glossary*, Geneva, World Health Organization, 1998.
- Sørensen, K., Pelikan, J.M., Röthlin, F., Ganahl, K., Slonska, Z., Doyle, G., ... HLS-EU Consortium. (2015). Health literacy in Europe: comparative results of the European health literacy survey (HLS-EU). *European Journal of Public Health*, 25(6), 1053-1058.
- Pedro, A.R., Amaral, O., & Escoval, A. (2016). "Literacia em saúde, dos dados à ação: Tradução, validação e aplicação do European Health Literacy Survey em Portugal." *Revista Portuguesa de Saúde Pública*, 34(3), 259-275.
- Nakayama, K., Osaka, W., Togari, T., Ishikawa, H., Yonekura, Y., Sekido, A., & Matsumoto, M. (2015). Comprehensive health literacy in Japan is lower than in Europe: A validated Japanese-language assessment of health literacy. *BMC Public Health*, 15(505),1-12. doi:10.1186/s12889-015-1835-x.
- Gonçalves, A.M. (2015). Literacia em Saúde e utilização dos serviços de saúde. Dissertação de mestrado. Instituto Politécnico do Porto, Porto.
- Protheroe, J., Whittle, R., Bartlam, B., Estacio, E.V., Clark, L., & Kurth, J. (2017). Health literacy, associated lifestyle and demographic factors in adult population of an English city: A cross-sectional survey. *Health Expect*, 20(1), 112–119.

**LITERACIA EM SAÚDE EM ESTUDANTES DO ENSINO SUPERIOR:  
COMPARAÇÃO ENTRE ESTUDANTES DE ENFERMAGEM E ESTUDANTES DE OUTRAS  
ÁREAS LITERACIA EM SAÚDE EM ESTUDANTES DO ENSINO SUPERIOR DE VISEU**

- Cho, Y.I., Lee, S.Y., Arozullah, A.M., & Crittenden, K.S. (2008). Effects of health literacy on health status and health service utilization amongst the elderly. *Social Science & Medicine*, 66(8), 1809–1816.
- Agency for Health Care Research and Quality (AHRQ) (2011). Health Literacy Interventions and Outcomes: an Update of the Literacy and Health Outcomes Systematic Review of Literature, 2011. Retrieved from <https://www.ahrq.gov>
- National Network of Libraries of Medicine (NNLM). Glassman, P. (2013). Culture in the context of health literacy. In: Eberle Michelle, ed. Health Literacy and Community Engagement Coordinator. National Network of Libraries of Medicine. Retrieved from <https://nnlm.gov/outreach/consumer/hlthlit.html>.
- Tomás, C., Queirós, P., & Rodrigues, T. (2015). Impacto da literacia em saúde nos comportamentos promotores de saúde em gestão de stresse em adolescentes. *Revista Portuguesa de Enfermagem de Saúde Mental* (Ed. Esp. 2), 101-106.
- Borzekowski, D.L. (2009). Considering children and health literacy: A theoretical approach. *Pediatrics*, 124, S282-S288. doi: 10.1542/peds.2009-1162D.
- Chang, L.C. (2010). Health literacy, self-reported status and health promoting behaviours for adolescents in Taiwan. *Journal of Clinical Nursing*, 20, 190-196. doi: 10.1111/j.1365-2702.2009.03181.x
- Paek, H-J., & Hove, T. (2012). Social cognitive factors and perceived social influences that improve adolescent e Health literacy. *Health Communication*, 27(8), 727-737. doi:10.1080/10410236.2011.616627
- Brito, I. (2014). Um modelo de planeamento da promoção da saúde: modelo PRECEDE-PROCEED. In Saúde dos estudantes do ensino superior de enfermagem: estudo de contexto na Escola Superior de Enfermagem de Coimbra. Unidade de Investigação em Ciências da Saúde: Enfermagem Escola Superior de Enfermagem de Coimbra, 33-78 (Chapter II).
- Coleman, C.A. (2011). Teaching health care professionals about health literacy: A review of the literature. *Nursing Outlook*, 59(2), 70–78.
- Ali, N.K., Ferguson, R.P., Mitha, S., & Hanlon, A. (2014). Do medical trainees feel confident communicating with low health literacy patients? *Journal of community hospital internal medicine perspectives*, 4(2), 10.3402/jchimp.v4.22893. doi:10.3402/jchimp.v4.22893.
- Johnson, A. (2014). Health literacy, does it make a difference. *Australian Journal of Advanced Nursing*, 31(3), 39-45.
- Macabasco-O'Connell, A., & Fry-Bowers, E.K. (2011). Knowledge and perceptions of health literacy among nursing professionals. *Journal of Health Communication*, 16(Suppl. 3), 295-307.