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About some evidences of health literacy

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ABSTRACT

Education and health are two fundamental pillars for development. This was immediately evident in the creation of the Human Development Index (HDI), by the United Nations Development Programme, back in the 1990s. In fact, knowledge and a long and healthy life – as is well known, two of the three dimensions of the HDI – interact with each other, being clear that better education contributes to a healthier, therefore longer, life, and this, in turn, allows for a better level of education. Given the above, the purpose of this paper is to analyze the importance of health education in contributing to sustainable development. From the outset, this importance derives from the nature of merit goods, which education and healthcare generally assume. Thus, gains in these pillars of development spread throughout the community, making sustainability easier to achieve.

Keywords: Education; Healthy Life Expectancy; Life Expectancy; Literacy; Self-Perceived Health (Status); Sustainability.

JEL codes: I12; I14; I18; I21; I24; I28.

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INTRODUCTION

The level of development of a country is generally measured using composite indicators, reflecting the dimensions that are considered important to measure that level. The Human Development Indicator (HDI), created in the United Nations (UN) Development Programme, as early as the 1990s, is, among those indicators, eventually the best known.

As is known, the HDI considers that, in addition to economic wealth, education and health are crucial aspects to assess the level of development of a country. The focus placed on people, since the beginning of the creation of HDI, to measure development became even more evident in the UN's 2030 sustainable development goals (<https://www.un.org/sustainabledevelopment/sustainable-development-goals/>; accessed on October 07, 2019). In these, goal 3 is to ensure a healthy life (and well-being) at all ages, while goal 4 is to achieve a quality education. In fact, these two goals are complementary, as knowledge and a long and healthy life interact with each other, being clear that better education contributes to a healthier, therefore longer, life, and this, in turn, allows for a better level of education.

Given the above, the objective of this paper is to analyze the importance of health education in contributing to sustainable development. From the outset, this importance derives from the nature of merit goods, which education and healthcare generally assume. Thus, gains in these pillars of development spread throughout the community, making sustainability easier to achieve.

As regards sustainability, as is well known, one of the most pressing problems of modern societies is that aging causes natural (and obviously understandable) pressures on national health systems. Clearly, one way of alleviating this pressure is to avoid, as much as possible, health care needs that, by ignorance, do not immediately trigger the (desirable) demand for such care, as well as demand (and possible consumption) for health care, without the need for it. Plainly, a society characterized by an adequate level of health literacy will be one in which self-perception of health status comes closest to reality. In this way, the importance of health education for sustainability of the health care system, in particular, and, in general, for sustainability of social development, is immediately noticeable.

As a motivation for the above, let us consider the data for the self-perceived health status by sex, age and educational attainment level, for Portugal, in 2018. For individuals aged 75-84, who consider themselves to be in good health, the proportion for men was 9.7%, while for women it was 7.1%, which seems to be counter-intuitive, as the life expectancy for men is smaller than that of women (and purposely we chose that age group, where that difference in life expectancy by gender is already evident). Indeed, that nonsense may be explained, at least in part, by the fact that those are individuals with less than primary, primary and lower secondary education (ISCED11, levels 0-2), thus most likely to be characterized by low health literacy levels. In fact, when considering individuals possessing tertiary education (ISCED11, levels 5-8), those proportions rise to 24.8% for men and to 24.9% for women, which seems to be more acceptable and revealing, as well, the importance of education for income level, which allows greater and better access to the needed health care.

That being said, the structure of the paper is as follows: Section 2 contains the background, which will motivate the study by presenting the links between education and health as pillars of sustainable development, as well as a brief literature review on the importance of health literacy; The main focus of the paper is provided in Section 3, which consists of an analysis for Portugal of the health literacy levels; Section 4 offers the recommendations in what concerns teaching and learning about health matters; The limitations of the study, as potential avenues for future analysis, are described in Section 5; Section 6, concludes.

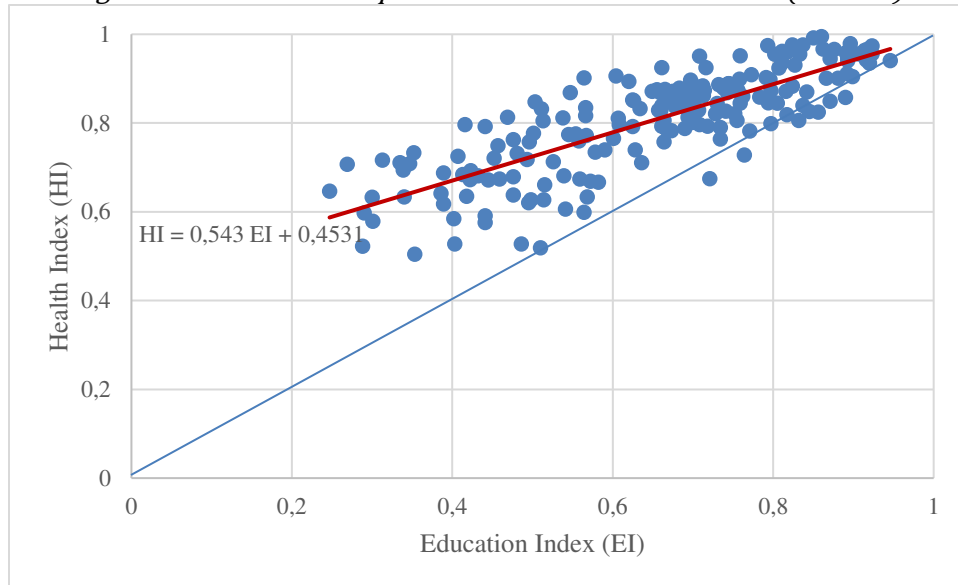
BACKGROUND

With regard to the two pillars of (sustainable) development, specifically education and health, there is no simpler way to put them in position than as stated in Kickbusch et al. (2013: 35): “Health is vital to education. Education is vital to health.” The interaction – virtuous in the case of (more) developed countries and vicious in the case of underdeveloped countries – between the levels of education and health is obvious. Healthier individuals, communities, or societies obtain higher levels of education and these, in turn, also allow for better results in terms of health, not only through increased knowledge (also in terms of health, i.e. through health literacy), but also through higher income, associated with higher levels of productivity, allowing greater access to the necessary health care, both in preventive and curative terms. See, among many others, Feinstein et al. (2006) and Groot & van den Brink (2006).

Figure 1 confirms the relationship between the levels of education and health, by showing the values in 2018 for the education – which combine the Mean Years of Schooling and Expected Years of Schooling – and health – which corresponds to life expectancy at birth – indexes for all the 189 countries, considered in the calculation of the Human Development Index. The correlation between those two indexes is approximately 81.8%. The figure also shows something curious, which is the

fact that almost all countries have an education index (EI) value smaller than the health index (HI), notably in those where the EI index assumes the lowest values. This eventually reveals that there is (still) more to do in terms of education.

Figure 1. The relationship between education and health (in 2018)



Given the evident relationship between education and health, it is not surprising that the literature has devoted attention to health literacy, both from a theoretical and empirical point of view.

Based on the definition of literacy as the degree to which individuals have the capacity to obtain, process and understand basic health information and services necessary to make appropriate health decisions, DeMarco & Nystrom (2010) confirmed that patients with a low level of health literacy professionals have greater difficulties in following verbal or written medical guidelines and/or understanding health-related information materials – for example, package inserts on medicines. They also demonstrated that these patients are less likely to use preventive health services and have less knowledge of their real health status. This generally results in a more frequent visit to hospital emergencies, which is associated with a higher rate of hospitalization and mortality. In fact, low levels of health literacy can lead to a delay in the demand for health care – due to less knowledge about the real state of health – especially in preventive terms, which ends up resulting in the use of health care at the hospitals, which are considerably (more) expensive. In this way, one immediately realizes the importance of health literacy for the sustainability of the health care system, since it contributes to the reduction of costs (in the short, medium and long terms).

Thus, health literacy generally points to the desirability that communication between patients and healthcare providers, namely nurses and, above all, physicians, to be as clear as possible. Health information materials should also be improved (Fincham, 2013, Wolf et al., 2012). In fact, access to information materials is now easier, in electronic terms (eHealth in Jacobs et al., 2016), which may be more appropriate for adolescents (Perry, 2014), being certain that they also involve greater risks because not everything that is available electronically, for instance on the internet, is necessarily correct. Furthermore, health literacy problems are more associated with some ‘problematic’ groups, meaning that the acquisition of health information should be adapted to the characteristics of the patients (Shah et al., 2019).

In parallel, some literature has been developed on how to measure health literacy, being sure that this concept has evolved over time (Rudd, 2015). For instance, Jordan et al. (2011), evaluated for purpose, validity (face, content, construct), reliability, responsiveness, feasibility, and generalizability, 19 instruments to measure health literacy, having concluded that health literacy is not consistently measured, making it difficult to interpret and compare health literacy at individual and population levels.

Despite the difficulties in measuring health literacy, one of the most substantiated cases took place in the European Health Literacy Survey (HLS-EU), which was applied to in eight countries: Austria, Bulgaria, Germany, Greece, Ireland, the Netherlands, Poland and Spain, in July and August 2011. See <https://www.healthliteracyeurope.net/hls-eu>.

In the HLS-EU there were considered three health domains – health care, health promotion and disease prevention – and four levels of information processing essential to decision making - access, understanding, evaluation and utilization. See Table 1.

Table 1. The structure of the European Health Literacy Survey

Health Literacy	Access / Obtain health-relevant information	Understand health-relevant information	Enjoy / Judge / Evaluate health-relevant information	Apply / Use health-relevant information
Health care	Ability to access information related to medical or clinical problems	Ability to understand medical information and its meaning	Ability to interpret and evaluate medical information	Ability to make informed decisions about medical issues
Disease prevention	Ability to access risk factors information	Ability to understand risk factors and their meaning	Ability to interpret and evaluate risk factors information	Ability to judge the relevance of risk factors information
Health promotion	Ability to update on health issues	Ability to understand health-related information and its meaning	Ability to interpret and evaluate information on health issues	Ability to form a conscious opinion on health issues

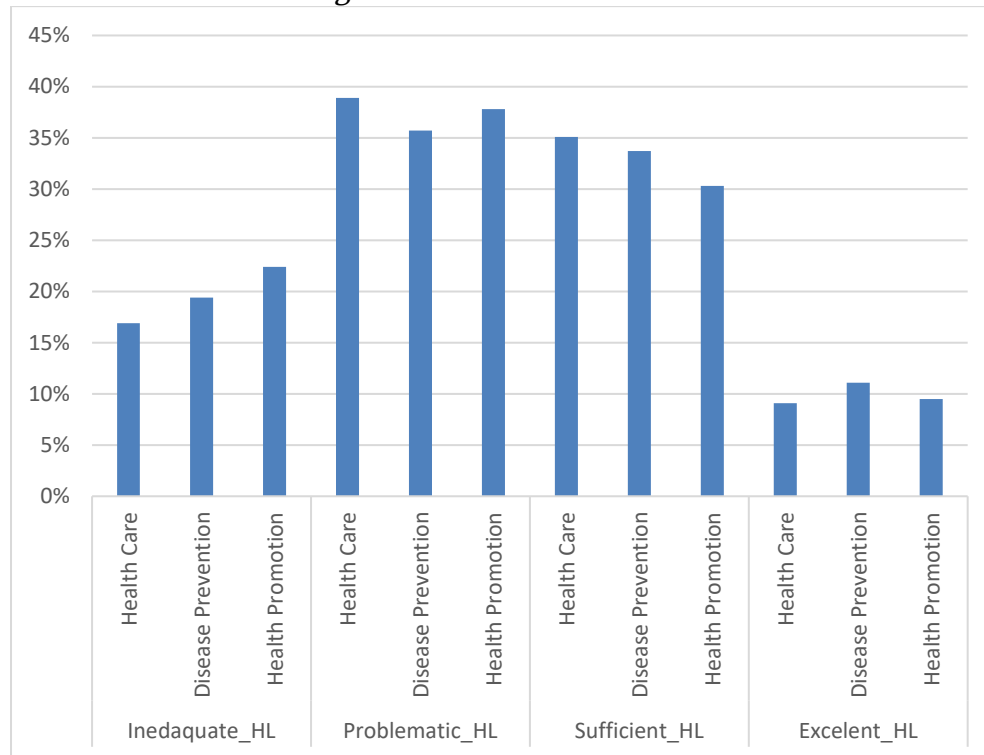
As described in Sørensen et al. (2015), at least 1 in 10 (12%) respondents showed insufficient health literacy and almost 1 in 2 (47%) had limited (insufficient or problematic) health literacy. However, there were significant differences in health literacy levels across countries, which were related to ‘problematic’ groups, such as those characterized by financial deprivation, low social status, low education or old age.

Like the HLS-EU, a health literacy survey was applied in Portugal in 2015. See Espanha et al. (2016) and/or Pedro et al. (2016). See also Marque (2015). The Health Literacy in Portugal project was an initiative of the Calouste Gulbenkian Foundation's Innovate in Health Program. The Health Literacy

survey conducted in Portugal (HLS-PT) was developed and applied by a CIES-IUL team of the ISCTE-IUL.

The instrument integrated those three domains of health – health care, health promotion and disease prevention – and those four levels of information processing essential to decision making – access, understanding, evaluation and use. In Portugal, 8.4% of respondents had an excellent level of literacy, while 17.0% had an inadequate level. Most respondents had a problematic level (44.1%) or a sufficient level (30.1%) of health literacy. Figure 2 shows all the results.

Figure 2. The HLS-PT results



In more specific terms, the results of HLS-PT were as follows:

- In general, the level of literacy is lower the older the respondents are. In particular, the inadequate level is the one with the biggest increases, as the respondents are older. For example, in the age group of those aged 76 or over, 50% had an inadequate level of literacy.
- In general, the level of literacy increases with schooling, particularly the excellent level.
- In general, there are no significant gender differences in the inadequate and excellent levels of literacy, but men have a higher proportion of problematic levels (46.1%) than women (43.9%), in contrast to a lower sufficient level (28.8 %) of the EU and women (31.4%).
- There are also some surprising differences across the territory. For example, the Algarve is the region of the country where the proportion of respondents with an excellent level (5.7%) is the lowest in the country - the highest occurs in the Azores, with 14.3% - but it is also the region with the lowest inadequate level (5.7%) - the highest level occurs in Madeira, with 30%.

According to those results, the most vulnerable groups identified in the HLS-PT were, among others:

- individuals aged 66 or older;
- with low levels of education;
- with income up to 500 €.

Health literacy, despite its specificity, cannot be dissociated from literacy in general. Literacy, in fact, helps in health literacy, as it allows greater scrutiny in the selection of correct information as, for instance, that being provided on the internet.

The results revealed the preponderance of direct contact with health professionals (physicians, nurses or pharmacists) as a privileged way of obtaining health information. Thus, interpersonal contact predominates, preferably with specialists, as a way of obtaining health information. Friends and family are also highlighted. Other means to obtain health information, such as watching TV programs on health, and reading leaflets or package inserts, were also identified. The use of networks (for example, patient associations) is, on average, much less frequent, as is the reading of articles or books.

The search for information on the internet appears as the medium that, on average, is used less frequently, being also true that but the Internet is the medium for the search for information that depends more on age and education.

In addition, as the level of health literacy increases, it increases the intensity of the use of all means, including contact with health professionals. In other words, the level of health literacy appears to be associated with greater use of all means to search for health information. In fact, Information and Communication Technologies appear as a strong alternative to disseminate health information, promote and develop health actions and promote health literacy, especially for the youngest and most educated.

Quite interesting was also the identification as a vulnerable group those made of individuals with a self-perception of health as being bad. This is puzzling given that either the state of health is even worse than perceived or, in fact, not so bad.

Indeed, a less explored aspect in the literature has to do with what seems to be an effect of health literacy on the individual's perceived health status. At the outset, a higher level of economic literacy will bring the perceived state of health closer to the real state of health. Thus, individuals with higher levels of health literacy will use health care more when they really need it, i.e. when they feel sick and, in fact, they are, but they will also not use them, avoiding unnecessary expenses, when they are in good health. In Bennett et al. (2009) was confirmed that health literacy is related to disparities in self-rated health as well as in preventive health behaviors (among older adults). See also Fernandez et al. (2016).

DISCUSSION

In the (former) National Health Plan, 2004-2010, the importance of health literacy almost seemed unnoticed. In fact, in its three strategic objectives, namely:

1. Achieve health gains by increasing health at different stages of the life cycle and reducing the burden of disease;

2. Use the necessary tools in an appropriate organizational context, namely focusing on change in the citizen, enabling the health system for innovation and reorienting the care system;
3. Ensure adequate mechanisms for the realization of the Plan through adequate resource captivation, promoting intersectoral dialogue, adjusting the legal framework and establishing mechanisms for monitoring and updating the Plan;

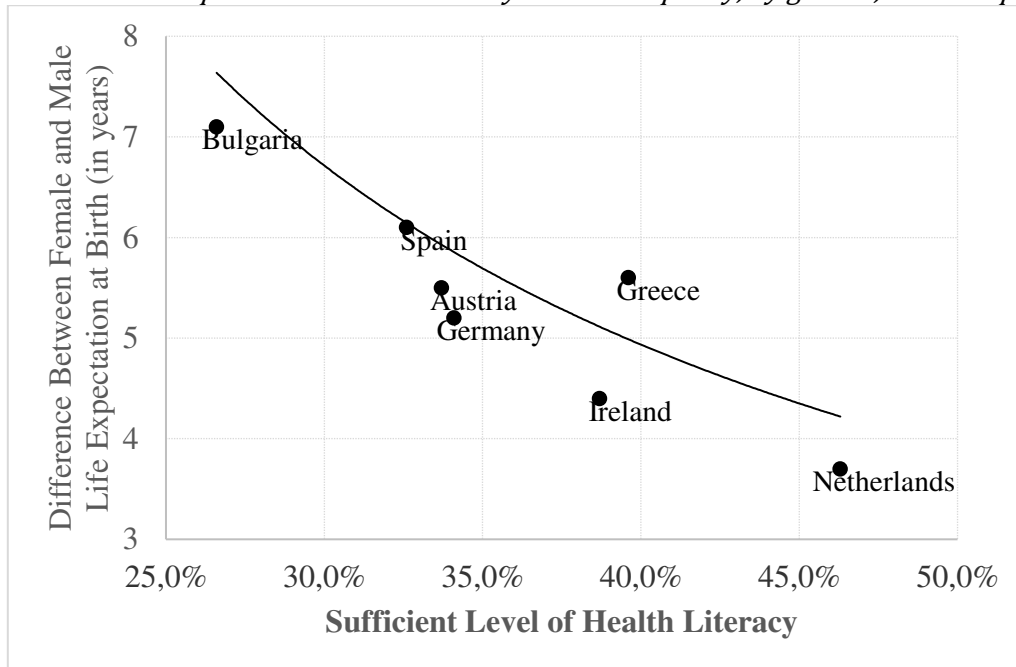
it can be recognized that health literacy would certainly contribute to focus the “change in the citizen”.

Of importance to our perspective are the values recorded in the perceived health status registered in the Plan, as well as the goals; see Table 1 in Appendix 1. In fact, it is obviously important to aim at reducing the percentages of people who perceive their health status to be bad – as it was the case – but what seems to be disappointing is to accept, almost as being inevitable, the differences, between genders, in a self-perception of the health status being bad. In fact, taking into account that the male gender has a lower life expectancy, which may be due, in part, to a less preventive, more careless and, possibly too optimistic attitude regarding the perception of health status, it seems that it should also be aimed (at any health plan), to reduce those differences between genders, which can be achieved by increasing the levels of health literacy.

In addition to this fact, it is also interesting to verify the differences in perceived health states, throughout life, by the different NUTs II. See Figures 1-4 in Appendix 2.

This perspective of ours seems to be confirmed by Figure 3, which is about to the eight countries of the HLS-EU. In fact, it seems to be evident that the differences in life expectancy at birth, by gender, diminish with the increase in health literacy, by that meaning that the higher the health literacy the closer is life expectation across the two genders.

Figure 3. The relationship between health literacy and the disparity, by gender, on life expectation



Citizenship indeed gained an explicit role in its successor National Health Plan, which concerned the period 2012-2016 and that was extended to 2020. In fact, it corresponded to one of the four strategic axes of that plan:

1. Citizenship in Health;
2. Access and Equity;
3. Quality in Health;
4. Healthy Policies.

Health literacy would therefore be especially important for the achievement of the second objective, of the four objectives, of that Plan, for the Health System, namely:

1. Obtain Health Gains;
2. Promote Healthy Living Contexts;
3. Strengthen Social and Economic Support in Health and Disease;
4. Strengthen Portugal's Participation in Global Health.

The paradigm shift that was witnessed in the current national health plan placed greater emphasis on the citizen, which was in line with the recognition that patients' decisions are more important than what has been recognized until then. Thus, the patient-centered approach to health care gained importance, in which patients, through their decisions, play an essential role (Seo et al., 2016). It is also important that health literacy - as the well-known phenomenon of 'group immunity' - be viewed from a societal point of view, even though individuals are increasingly responsible (Guzys et al., 2015).

As a matter of fact, for these decisions to be the best possible, the citizen must have the necessary health literacy, i.e. the skills to seek, understand and use health information.

In particular, from the point of view of public health, the preventive attitude gains particular importance. In fact, a low level of health literacy reduces the likelihood of maintain good health, which obviously is associated with higher costs in health care.

Sufficiently surprising is the fact that those three levels of health literacy – even if they have to be complemented with a fourth level called “holistic health literacy,” with the following dimensions: (1) tolerance, (2) understanding culture as wide and multidimensional phenomena, (3) environmental consciousness, and (4) analysis of the state of the world from various points of view; see Rask et al. (2014) – seem to assume that information does, in fact, exist. In fact, if the information does not exist, nothing expressed in Table 1 applies.

SOLUTIONS AND RECOMMENDATIONS

We must start over by recognizing that the Ministry of Health, through the Directorate-General for Health, is implementing an action plan for health literacy. See Direção de Serviços de Prevenção da Doença e Promoção da Saúde (2019). This action plan establishes:

- General Objective 1 (O1) - Adopt healthy lifestyles (daily context)
- General Objective 2 (O2) - Train for proper use (Health System)
- General objective 3 (O3) - Promote well-being (in chronic illness)
- General Objective 4 (O4) - Promote knowledge and research

In turn, the agents involved in the pursuit of these objectives are education professionals and school health teams.

With regard to objective 4, the “Recommendation for the inclusion of modules on Health Literacy in the curricula of undergraduate courses and advanced training in the field of Health” is established.” The question that naturally arises is: why not extend the teaching / learning of skills in the health field, since the beginning of school education. This perspective, in fact, is the one advocated by the World Health Organization. See Kickbusch et al. (2013)

According to the WHO, health literacy should be considered a public health goal, being a challenge for contemporary health education into the 21st century.

Indeed, following Kickbusch et al. (2013), it is known that

1. Literacy influences people’s ability to access information;
2. Lifelong learning strongly predicts health literacy;
3. Wide-ranging and mutually reinforcing learning opportunities are critical.

Furthermore, what is known to work is to

1. Build the foundations for health literacy in early child development;
2. Develop and support health-promoting schools’ approaches;
3. Address the barriers to adult learning;
4. Combined and tailored approaches work best;
5. Participatory approaches are promising;
6. Exploring new learning approaches for health and well-being.

these being promising areas for action.

Taking into account those recommendations, our suggestion is to provide information on health issues at the right times, i.e. when learning (other things). As an example, we have the course of Citizenship and Development [translation of Cidadania e Desenvolvimento], taught to students in the 5th and 6th years of schooling (in Portugal), where some health matters are indeed taught, which should be extended to at least the 12th year. In particular, at the level of higher education, there is already an initiative of undeniable interest. Health Promoting Universities and Colleges, as recommended by WHO are, indeed, gaining importance. See Soares et al. (2015). Plainly, the promotion of healthy practices is either better or easier the greater the health literacy.

Another suggestion is to make the information more accessible to a greater audience through the mass media too. For example, although in irregular terms, television has considered programs on health issues, whose largest audience is, indeed, individuals that, usually, are important consumers of health care, i.e. the older population.

Finally, despite being possible to be considered a provocation or, at least a challenge, health literacy should also be increased on those professionals that supply health care. As is known there is an asymmetry on the information that is, generally, available to the demand and supply of health care. As a matter of fact, some elements on the supply may know everything in medicine but do not know all other aspects that are between the supply and the demand of health care. For instance, a physician may not know how long is indeed the waiting time for a surgery.

Being sure that information will always be greater on the part of the health care supply, this part of the market for health care should be obliged to inform the patients when, for instance, a patient is visiting a physician. A simple anecdotic example can be presented. If a doctor receives a patient with gallstones complaining of pain, he/she should, at the very least, inform the patient about the diet he/she should follow. This fact may prevent the patient from having to resort to hospital care urgency as a result of a cholecystitis. That simple information would have, indeed, contributed to less costs (to the patient and to the National Health Service).

FUTURE RESEARCH DIRECTIONS

This paper has limitations, which we intend to take as opportunities for further investigation. These avenues are two-fold: in particular, we would like analyze the relation between health literacy and the perception of health status, i.e. to verify how health literacy contributes to a more accurate self-perception of health status; another possibility is to explore the contribution of health literacy to healthier universities. See the additional readings.

CONCLUSION

In this paper, we expressed our perspective that the learning of skills in the health field should be continuous, from the first contacts with teaching, i.e. from childhood, in kindergartens, until adulthood, i.e. in higher education.

In fact, as in Portugal, there is some established practice of teaching some basic principles or rules about health – for example, principles of hygiene, disease prevention, etc. – at younger ages, but, in general terms, this is no longer part of the curriculum of school training from the 7th year of schooling, i.e. when children are generally 12 years old, onwards.

Bearing in mind that formal education should be used to teach and learn about health matters, it is concluded that that practice should be transversal to all levels of education, through attending a course on citizenship issues, in which to take the opportunity to increase levels of health literacy. Desirably, the teaching of these subjects should be provided by professionals in the field of public health, particularly in the most advanced years.

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KEY TERMS AND DEFINITIONS

Health: A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. See preamble to the Constitution of WHO as adopted by the International Health Conference, New York, 19 June - 22 July 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of WHO, no. 2, p. 100) and entered into force on 7 April 1948.) See also Saracci, R. (1997).

Health education: Comprises consciously constructed opportunities for learning involving some form of communication designed to improve health literacy, including improving knowledge, and developing life skills which are conducive to individual and community health. See WHO (1998: 4). See also Catford & Nutbeam (1984).

Health literacy: Represents the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health. See WHO (1998: 10). See also Berkman et al. (2010).

Life expectancy at birth: Average number of years that a newborn could expect to live, if he or she were to pass through life exposed to the sex- and age-specific death rates prevailing at the time of his or her birth, for a specific year, in a given country, territory, or geographic area. See <https://www.who.int/data/gho/indicator-metadata-registry/imr-details/65>.

Life expectancy at age 60 (years): Average number of years that a person of 60 years old could expect to live, if he or she were to pass through life exposed to the sex- and age-specific death rates prevailing at the time of his or her 60 years, for a specific year, in a given country, territory, or geographic area. See <https://www.who.int/data/gho/indicator-metadata-registry/imr-details/2977>

Healthy life expectancy at birth: A form of health expectancy that applies disability weights to health states to compute the equivalent number of years of good health that a newborn can expect. See https://www.who.int/gho/mortality_burden_disease/life_tables/hale_text/en/.

Self-perceived health (status): Expresses subjective assessment by the respondent of his/her health. See https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Self-perceived_health

APPENDIX 1

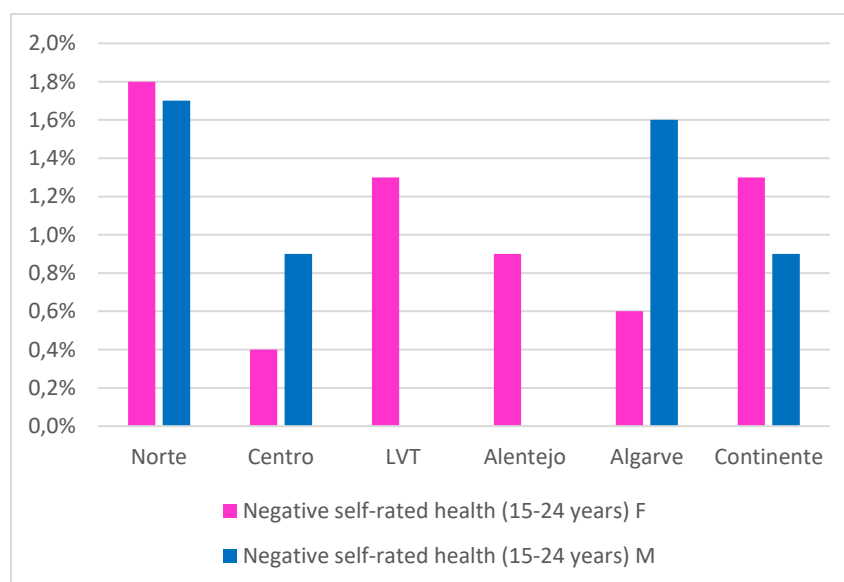
Table 1. Some objectives and indicators (National Health Plan, 2004-2010)

Objectives / Indicators	2001	2006	Target for 2010
“A youth looking for a healthy future” (10-24 years old)			
Negative self-rated health (15-24 years old)	M = 0.9%	M = 0.9%	M = 0.6%
	F = 2.4%	F = 1.3%	F = 1.6%
“A productive adult life” (25-64 years old)			
Negative self-rated health (35-44 years old)	M = 6.5%	M = 4.0%	M = 3.0%
	F = 11.0%	F = 7.6%	F = 6.0%
Negative self-rated health (55-64 years old)	M = 27.6%	M = 21.7%	M = 14.0%
	F = 41.6%	F = 33.7%	F = 21.0%
“Active Aging” - 65 years and over			
Negative self-rated health (65-75 years old)	M = 34.6%	M = 30.4%	M = 18.0%
	F = 53.2%	F = 44.3%	F = 26.0%

Data Source: The 2001 data refer to the 3rd National Health Survey (1998/99) and the 2006 data to the 4th National Health Survey (2005/2006). Surveys conducted on these dates only.

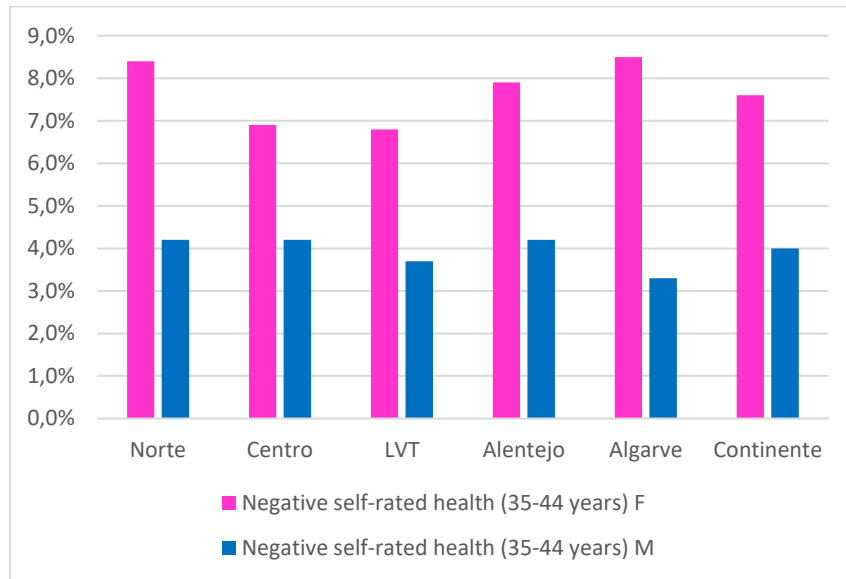
APPENDIX 2

Figure 1. Negative self-rated health by NUTs II and gender (15-24 years old)



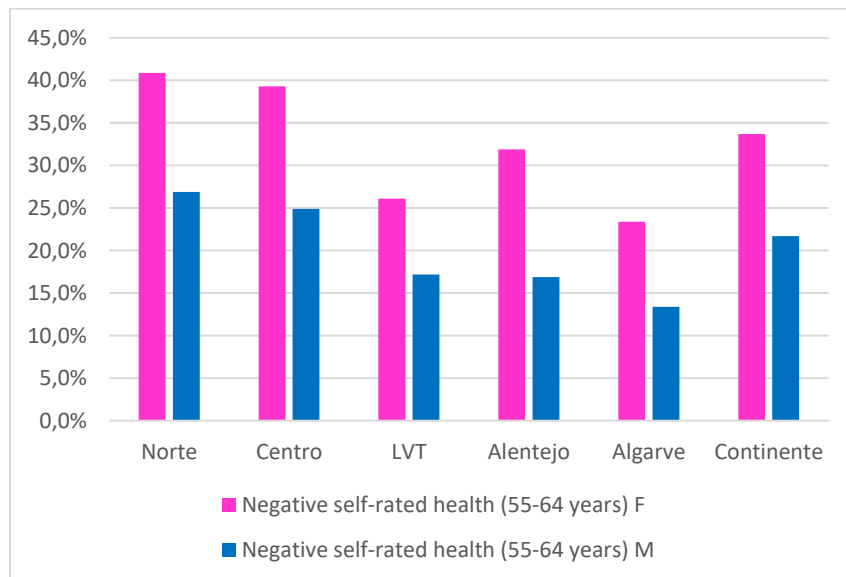
Source: National Health Plan, 2004-2010

Figure 2. Negative self-rated health by NUTs II and gender (35-44 years old)



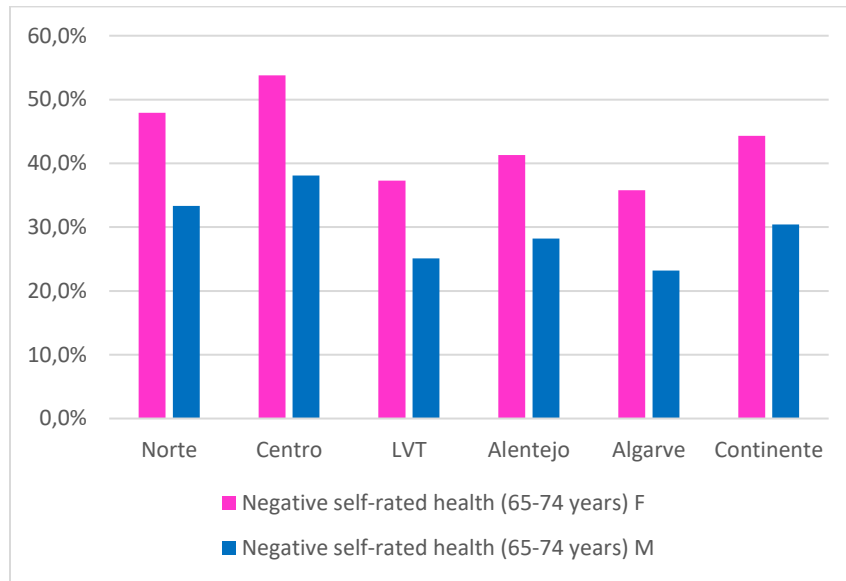
Source: National Health Plan, 2004-2010

Figure 3. Negative self-rated health by NUTs II and gender (55-64 years old)



Source: National Health Plan, 2004-2010

Figure 4. Negative self-rated health by NUTs II and gender (65-74 years old)



Source: National Health Plan, 2004-2010