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Chapter

Lifestyles, Health, and Life Satisfaction among the Portuguese Seniors

Aida Isabel Tavares

Abstract

This chapter focuses on the interaction between lifestyles, health, and life satisfaction of Portuguese seniors. The aim of the analysis is to find the main determinants of health and life satisfaction and to verify the importance of lifestyle variables as determinants of health and life satisfaction. We used data collected by the National Health Survey of 2014 and estimated two ordered probits. The main results show that not all lifestyle variables are meaningful in explaining self-assessed health and life satisfaction. The determinants of the health status include education and income; however, it can be assumed that overall good health, family, or close people and income contribute to life satisfaction. A general profile of the Portuguese seniors is provided; however, the results obtained here are changing as a new scenario is emerging, generation X enters old age.

Keywords: lifestyles, self-assessed health, life satisfaction, elderly, Portugal

1. Introduction

Portugal is one of the oldest countries in Europe and the country where the share of older people is growing faster [1]. The life expectancy at birth, in 2018, was 78.3 and 84.5 years for males and females, respectively, and it slightly improved between 2014 and 2018 (**Table 1**); life expectancy at 65 years old was 18.2 and 22.0 years for males and females, respectively, in 2018. Nevertheless, Portuguese elderly enjoy short healthy life years when they reach 65, while males may enjoy 7.8 healthy years, women enjoy 6.9 according to data for 2018 (**Table 1**). Summing up, older Portuguese people live long lives but without quality of life.

Portuguese are in general less satisfied with life (OECD, Eurobarometer since 1973, Gesis [3–5]; European Social Survey [6–8]). When people are asked "on the whole how are you satisfied with your overall life," Portuguese tend to report lower level of satisfaction than the other Europeans (**Figure 1**).

The same trend about life satisfaction is found in other older people. Based on SHARE survey (SHARE [9]), wave 6, comparing life satisfaction across several European countries, the share of Portuguese seniors reporting life dissatisfaction (levels 0–3 in a scale of 0–10, where 0 means completely dissatisfied and 10 completely satisfied) is nearly 7.5% of the respondents, while the average for the remaining countries in the sample is about 2.8%.

	Life expectancy at birth		Life expectancy at 65		Healthy life years at 65	
	2014	**2018**	**2014**	**2018**	**2014**	**2018**
Total	81.3	81.5	20.2	20.3	6.2	7.3
Males	78.0	78.3	18.1	18.2	6.9	7.8
Females	84.4	84.5	21.9	22.0	5.6	6.9

Source: Eurostat Database [2].

Table 1.
Aging information about Portugal.

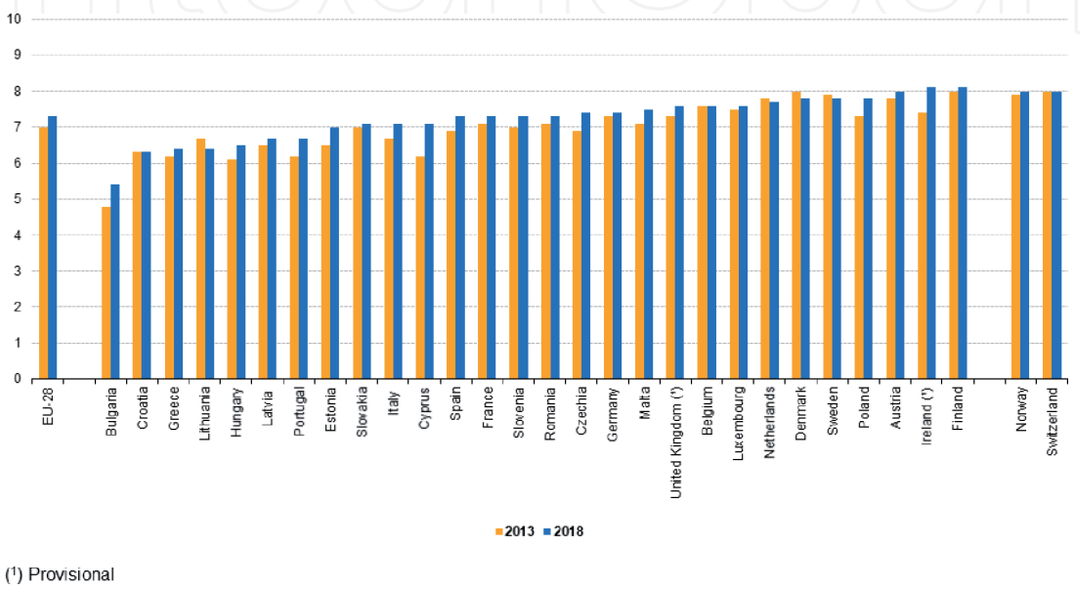


Figure 1.
Overall life satisfaction mean rating by country, 2013 and 2018. Source: Eurostat database (online data code: il_pw01) [7].

Health and life satisfaction have long been studied, as well as their interconnectedness [10–13]. The determinants of health and life satisfaction, in general, coincide [14–17], and they include demographics, socioeconomic status, overall well-being (physical and mental health), and social interactions.

People's lifestyle choices also influence health [18, 19] and life [20], as is frequently pointed out by the WHO [21–23]. Healthy lifestyles mean eating a healthy diet with vegetables and fruit, no smoking, not drinking excessively, and being involved in some regular exercising. These are means to prevent the onset of non-communicable chronic diseases such as cardiovascular diseases, diabetes, cancer, and dementia.

Older Portuguese people and issues in relation to their health, life satisfaction, and lifestyles have so far received limited research interest; however, there are some studies that approached these issues. Concerning health, Portuguese people aged 65 and over tend to report satisfaction with their health [24], and the determinants are aligned with international studies, i.e., as people get older, especially women, who are less educated and those of low socioeconomic status, tend to report lower health status [25].

Studies on life satisfaction, happiness, or well-being in Portugal indicate that despite socioeconomic status being a relevant determinant, other factors such as social networks and personal relationships are also related to health and provide more important explanatory factors [25, 26]. At the beginning of the twenty-first century, Delhey [27] revealed that the three most relevant factors for quality of life in Portugal were primarily health, followed by family and then income.

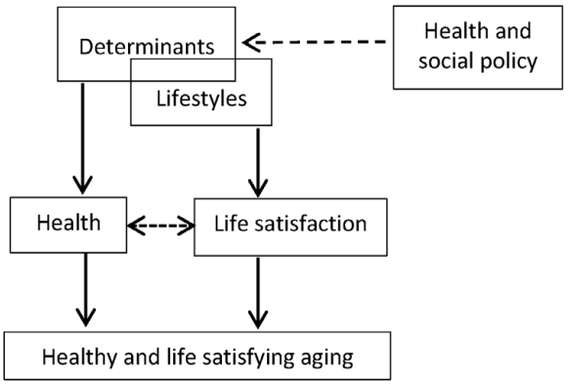


Figure 2.
Conceptual mapping.

Focusing on diet, Santos et al. [28] found that overall seniors tend to have a low-quality diet, especially single males, but those living in rural areas were more likely to have a better diet.

We do not know much about alcohol intake and smoking of older people in Portugal. Bosque-Prous [29] using SHARE data showed that Portugal has a high prevalence of hazardous drinking.

This is different when it comes to the use of tobacco. Older people do not display a profile of heavy smokers, and as they get older, they tend to smoke less [30], but smokers tend to consume more alcoholic beverages and have a poorer diet [31]. Physically active seniors tend to delay aging decay [32], and, based on SHARE data, the prevalence of inactive older people is very high in Portugal, and that may be due to depression, low social support, and low life satisfaction [33].

This chapter has two aims. First is to describe and analyze the lifestyles, health, and life satisfaction of Portuguese seniors. Second is to identify the main explanatory factors of self-assessed health and life satisfaction of Portuguese seniors.

The conceptual map framing our analysis is presented in **Figure 2**. Lifestyle choices are based on health and life satisfaction, so we consider determinants such as demographics, socioeconomic status, and health related issues. These determinants influence the way older Portuguese people perceive their health and create their awareness about life satisfaction. Once the most important determinants have been identified, then policy measures may be designed to improve the general health, overall well-being, and life satisfaction by influencing those determinants.

This chapter proceeds with the description of the methods used to achieve the aims of the analysis. Then the results are presented, and, at the end, the discussion outlines some systemic as well as personal changes to influence unhealthy lifestyle choices.

2. Method

2.1 Data and sample

Data used for the analysis performed in this chapter is collected by the National Health Survey (NHS) of 2014 [34]. This survey is a community-based cross-sectional study. Data collected is obtained according to a multistage stratified and cluster sampling. The obtained sample represents the Portuguese population. The survey was implemented in the whole country between September and December 2014, and it included 18,204 people aged 15 year or over, who are not institutionalized. The questions in the survey covered four thematic areas: health status, healthcare, health

Group of variables	Independent variables	Description
Demographic variables	Male	Dummy variable. Takes value 1 is male and 0 otherwise
	Age group	Age is grouped in five classes: 65–69, 70–74, 75–79, 80–84, and > 85 years old
Socioeconomic variables	Education	Education is grouped in five levels of education corresponding to the number of complete schooling years and levels, 0, 6, 9, 12, 15, and 17, where 0 means no schooling and 17 means university degree
	Marital status	
	Single	Takes value 1 if person is single and 0 otherwise
	Married	Takes value 1 if person is married and 0 otherwise
	Divorced	Takes value 1 if person is divorced and 0 otherwise
	Widow	Reference category
	Income	Income is grouped in five classes which represent the quintile of net monthly income per equivalent adult
	Degree of urbanization	Measures the degree of urbanization where individual lives
	Urban	Takes value 1 if degree of urbanization is defined as urban and 0 otherwise
	Rural	Takes value 1 if degree of urbanization is defined as rural and 0 otherwise
	Moderate	Reference category
Health and physical conditions variables	Chronic diseases	Takes value 1 if person suffers from at least 1 chronic disease and 0 otherwise
	Limitation to general activity	Measures the limitation of people to perform their daily life and general activities
	Severe	Takes value 1 if individual reports severe limitation and 0 otherwise
	Moderate	Takes value 1 if individual reports moderate limitation and 0 otherwise
	None	Reference category
	Depression indicator	Takes values 0–9 where 0 means no feelings of depression and 12 means feelings of (i) useless or guilty, an/or (ii) lack of interest in usual things, and/or (iii) depressed or lack of courage almost every day and 0 otherwise
	BMI	Body mass index is calculated by the ratio of weight over the square of height
Lifestyle variables	Physical activity	Number of days per week doing physical exercise
	Smoking	Takes value 1 if respondent smokes daily or occasionally and 0 otherwise
	Eating vegetables	Takes value 1 if respondent eats fruit and/or salads 4–7 days per week and 0 otherwise
	Eat unhealthy food	Takes value 1 if respondent has eaten fast food or precooked meals in the previous day and 0 otherwise
	Alcohol drinking	Takes value 1 if respondent drinks alcoholic drinks frequently during the week and 0 otherwise

Table 2.
Description of independent variables.

determinants, and income and health expenses. The NHS 2014 is a survey harmonized and regulated in EU level [Commission Regulation (EU) No 141/2013].

Our sample includes all respondents older than 65 years from the whole of the country, that is, 5701 Portuguese seniors. Analyses were conducted with Stata version 15 (StataCorp LP, College Station, Texas, USA).

2.2 Variables

The dependent variables of this study are the self-assessed health (henceforth SAH) and the life satisfaction (henceforth LS). The independent variables comprise a set of independent variables grouped in demographic, socioeconomic, health and physical conditions, and lifestyle variables. These variables are described in the following.

2.2.1 Dependent variables

2.2.1.1 Life satisfaction

Life satisfaction is captured by the survey question "are you satisfied with your life?". The answers are graded in a scale 1–7 where 1 means "I completely disagree" being satisfied and 7 means "I completely agree" being satisfied.

2.2.1.2 Self-assessed health

Self-assessed health is obtained from the question "how do you evaluate your health status." The answer varies from 1 to 5, where 1 means "very bad" and 5 means "very good."

2.2.2 Independent variables

The independent variables are grouped in demographic, socioeconomic, health and physical conditions, and lifestyle variables which are described in **Table 2**.

3. Results

3.1 Descriptive analysis

The majority of the respondents assessed their health as being less than reasonable and about 35% reported a bad or very bad health status (**Table 3**).

	Number	%
5 very good	108	1.90
4 good	787	13.81
3 fair	2817	49.45
2 bad	1443	25.33
1 very bad	542	9.51

Table 3.
Self-assessed health.

	Number	%
1 completely dissatisfied	232	4.13
2	690	12.28
3	437	7.78
4 fairly satisfied	496	8.83
5	1317	23.43
6	2.1	37.37
7 completely satisfied	348	6.19

Table 4.
Life satisfaction.

Demographic variables	**Number**	**%**	**Socioeconomic variables**	**Number**	**%**
Gender			**Education**		
Male	2,215	38.9	No schooling	1,941	34.1
Female	3,486	61.2	6 years (basic school 1st level)	2,938	51.5
Age group (group>10)			9 years (basic school 2nd level)	353	6.2
65–69	1,533	26.9	12 years (secundary school)	189	3.3
70–74	1,319	23.1	15 years (post-secondary school)	14	0.3
75–79	1,259	22.1	17 years (college degree)	265	4.7
80–84	979	17.2	**Marital status**		
>85	611	10.7	Single	363	6.4
			Married	2,913	51.1
Health and physical condition variables			Widow	2,132	37.4
Chronic diseases			Divorced	293	5.1
Yes	4,922	86.4	**Income**		
No	778	13.6	1st Q	1,368	24.0
Limitations to general activity			2nd Q	1,534	26.9
Severe	1,062	18.6	3rd Q	1,174	20.6
Minor	2,415	42.4	4th Q	867	15.2
None	2,222	39.0	5th Q	758	13.3
Depression indicator			**Number of people in household**		
No sign	2,544	45.2	1	2,330	40.9
At least one sign	3,089	54.8	2	2,749	48.2
Body mass index (BMI) >26.6	2,759	50.0	+3	426	10.9
Lifestyle variables			**Degree of urbanization**		
Number days physical activity			Urban	1,563	27.4
None	4,523	79.5	Moderate urban	1,689	29.6
Some days	1,169	20.5	Rural	2,449	42.9

(continued)

Demographic variables	Number	%	Socioeconomic variables	Number	%
Smoking					
Yes	266	4.67	**Number of respondents**		5,701
No	5,433	95.33			
Eating vegetables (4–7 days/ week)					
Yes	5,369	94.33			
No	323	5.67			
Eating unhealthy food (previous day)					
Yes	2,316	40.88			
No	3,349	59.12			
Drinking alcohol (frequency)					
Never or not frequently	3,815	67.00			
Frequently	1,882	33.30			

Table 5.
Descriptive statistics for independent variables.

Concerning life satisfaction, most Portuguese seniors reported being satisfied with life. Around 67% of respondents evaluated their life satisfaction at the highest levels (levels 5–7) of satisfaction (**Table 4**). So, despite the generally negative reporting of their health status, seniors are satisfied with life.

The description of the independent variables is presented in **Table 5**.

Most of the seniors surveyed are women, and about half of them are aged between 65 and 75 years old. More than half of the surveyed seniors have a very low level of education; the majority are married, and, in general, they receive very low levels of income.

Concerning the health and physical conditions, the large share of older Portuguese suffer from chronic diseases and/or from depression; they face some minor form of physical limitation to perform daily tasks, and they are overweight.

Finally, a great number of the older population do not do any exercise, but they do not smoke either; a great number report having eaten unhealthy food in the previous day, but a very large number of older people eat fruit and salad daily or very often; almost 30% of the respondents stated to drink alcohol very frequently such as every day or 5–6 times a week.

The correlation between binary variables is given by the tetrachoric correlation. This was computed for lifestyle variables (**Table 6**). None of the correlations is very

	Smoking	Eating vegetables	Eating unhealthy food
Smoking	1.00		
Eating vegetables	−0.22	1.00	
Eating unhealthy food	0.03	−0.003	1.00
Drinking alcohol	0.24	0.05	−0.06

Table 6.
Correlation of lifestyle variables.

	Self-assessed health		Life satisfaction	
	Coef	**P > z**	**Coef**	**P > z**
Demographic variables				
Male	−0.035	0.369	−0.085	0.018
Age	−0.004	0.744	0.052	0.000
Socioeconomic variables				
Education	0.032	0.000	−0.002	0.685
Marital status				
Single	−0.033	0.715	0.229	0.008
Married	−0.211	0.005	0.288	0.000
Widow	−0.048	0.529	0.110	0.119
Income	0.098	0.000	0.072	0.000
No. of people in household	0.018	0.401	0.044	0.028
Degree urbanization				
Urban	0.060	0.149	0.036	0.351
Rural	−0.064	0.085	0.023	0.505
Health condition variables				
Chronic diseases	−0.756	0.000	−0.134	0.003
Limitations				
Severe	−1645	0.000	−0.502	0.000
Moderate	−0.808	0.000	−0.232	0.000
Depression indicator	−0.149	0.000	−0.190	0.000
BMI	−0.004	0.268	0.009	0.011
Lifestyle variables				
Smoking	0.243	0.001	−0.042	0.546
Eating vegetables	0.039	0.564	0.100	0.114
Eating unhealthy food	0.047	0.140	0.107	0.000
Drinking alcohol	0.142	0.000	0.147	0.000
Number of days of physical activity	0.021	0.007	0.030	0.000

Table 7.
Results.

high, but there is some positive correlation between people who frequently drink alcohol and those who smoke; there is also a negative correlation between people who smoke and those who eat frequently fruit and salad.

3.2 Estimation results

The estimation results of the ordered probits for self-assessed health and life satisfaction are presented in **Table 7**. The ordered probit for self-assessed health shows that demographic variables are not significant but, as expected, higher education and higher income are correlated with higher health status. The existence of chronic diseases, suffering physical limitations and feeling depressed, does not contribute to good health. Interestingly, we found that smoking and drinking are associated

Self-assessed health			**Life satisfaction**		
Drinking alcohol			**Drinking alcohol**		
Predict	**dy/dx**	**P > z**	**Predict**	**dy/dx**	**P > z**
1	−0.016	0.000	1	−0.009	0.000
2	−0.019	0.000	2	−0.019	0.000
3	0.011	0.000	3	−0.009	0.000
4	0.019	0.000	4	−0.007	0.000
5	0.005	0.000	5	−0.006	0.000
			6	0.034	0.000
Smoking			7	0.017	0.000
Predict 1	−0.027	0.001			
2	−0.033	0.001	**Unhealthy food**		
3	0.018	0.001	Predict 1	−0.007	0.000
4	0.033	0.001	2	−0.014	0.000
5	0.009	0.001	3	−0.006	0.000
			4	−0.005	0.000
			5	−0.004	0.000
Number of days of physical activity			6	0.024	0.000
Predict 1	−0.002	0.008	7	0.012	0.000
2	−0.003	0.007			
3	0.002	0.008			
4	0.003	0.007	**Number of days of physical activity**		
5	0.001	0.008	Predict 1	−0.002	0.000
			2	−0.004	0.000
			3	−0.002	0.000
			4	−0.001	0.000
			5	−0.001	0.000
			6	0.007	0.000
			7	0.003	0.000

Table 8.
Marginal effects for lifestyle variables.

with the people's higher odds of reporting good health; but we also found that good health is reported when people exercise, as expected.

Concerning the ordered probit for life satisfaction, results are slightly different. Older people, and females particularly, tend to report higher levels of life satisfaction. Higher income is correlated with higher life satisfaction; no matter whether people are married or single, they tend to report identical satisfaction; however, having more than one person in the household increases the likelihood of reporting life satisfaction. Concerning the health variables, the results coincide with those found for self-assessed health. Any condition that risks the healthy feeling of people decreases life satisfaction except the BMI. Overweight is not correlated with lower but with higher life satisfaction. Finally, concerning lifestyle variables, we found that eating unhealthy food, drinking alcohol, and exercising are positively correlated with life satisfaction.

Table 8 presents marginal effects for the significant lifestyle variables. It can be observed that for low levels of health, the change from "no frequent alcohol drinking" to "frequent drinking" and from "no frequent smoking" to "frequent smoking" decreases the perceived health status. Identically, for levels of life satisfaction below level 6, the change from "no frequent alcohol drinking" to "frequent alcohol drinking" and from "no unhealthy food" to "eating unhealthy food" decreases life satisfaction. Being physically active increases the "good health status" and also boosts the life satisfaction to higher levels (meaning levels 6 and 7). The gray shadowed values are statistically significant for a p-value smaller than 0.05.

4. Discussion

Portugal is already a country of older people in Europe, and, as overall longevity increases, the number of people over the age of 65 will increase. Understanding the determinants of self-assessed health and life satisfaction and also understanding the role of lifestyle choices as determinants provide the basis for specific policy measures aimed at improving the overall well-being of senior citizens. The aim of this chapter was to estimate the set of main determinants and check the relevance of lifestyle variables as determinants of self-assessed health and life satisfaction of Portuguese people who are older than 65 years. We used data collected by the National Health Survey of 2014 and estimated two ordered probits.

The main results show that not all lifestyle variables are significantly explaining self-assessed health and life satisfaction. Surprisingly, we found that people who smoke and drink alcohol frequently reported a good health status; a good health status was also reported by those who frequently exercised. We also found that people reporting to eat unhealthy food and drink alcohol frequently tended to report higher life satisfaction as those reporting frequent physical exercise.

These results were unexpected. It may be argued that the participants only included people older than 65 years. At this age, people may feel that there is no need to change their behavior concerning smoking and drinking. They may think that the life time left should be comfortable and not restrictive. In fact, the share of people reporting smoking and drinking is relatively small, and their present health condition seems to let them satisfy their wishes or habits in relation to smoking and drinking.

The marginal effects confirm this to some extent. When people report low levels of health, when moving from "no smoking" to "smoking" or from "no drinking alcohol" to "drinking alcohol," a decreasing health status is reported. But for good levels of health, this tendency does not happen. It looks as if the good health status works as a protective status allowing people to make less healthy choices.

The determinants of the health status of older Portuguese follow previous studies, as was expected; good education and higher income contribute to a better health outcome. Interestingly, the opposite happens with married people, they are more likely to report bad or very bad health. It may be married people assess their own health in comparison with their partner or assess it as a joint indicator of the couple. This result must be carefully interpreted because married people also tend to report more often satisfied life satisfaction.

Determinants of life satisfaction follow the findings by Delhey [27]. Good health, family or close people, and decent income contribute to life satisfaction. Being a female and getting older also contributes to life satisfaction. Bad health conditions, affecting people physically or emotionally, decrease the health status and life satisfaction of people.

People older than 65 years belong to the generation of baby boomers, and the oldest belong to the silent generation. The silent generation was born between 1928 and 1945, and the baby boomers were born between 1946 and 1964. Portugal was under an authoritarian corporatist government for 41 years, from 1933 to 1974. This means that people from these generations were born, raised, and worked under this political regime. Their values and attitudes were strongly shaped by their life experience. They have accomplished very low levels of education, and their retirement pensions are very low. This seems to have influenced the way people assess their health and life satisfaction, as well as their expectations and ambitions for life and health.

It is clear that many older Portuguese would improve their health and life satisfaction, had they received better education, and were entitled to larger retirement pensions. The very low level of income, often at level or below level of risk of poverty, requires particular attention from the authorities to prevent old age poverty and catastrophic health expenditures in future.

In general, older people are not smokers or heavy smokers, nor are they heavy drinkers. These characteristics, which are based on their socioeconomic condition, contribute to their health status and life satisfaction. However, some of their lifestyle choices will have negative health consequences. Those who tend to smoke are also more likely to drink alcohol, and this combination may potentiate future diseases and faster degradation of the health condition.

The large share of older people living in rural areas has the opportunity to grow their own vegetables and harvest fruits. For this reason, they are very likely to have a healthy diet and consume frequently vegetables, salads, and fruits. These people are very unlikely to engage in formal physical activity, but they are physically active in their life when growing vegetables and taking care of farm animals, all of which contributes to their well-being.

Future research on these topics needs to focus on the analysis of the unhealthy choices and their impact on health and life satisfaction. The results found here are changing in the near future because a new scenario is emerging. It may be worth analyzing the changes occurring as the baby boomers' generation dies and generation X enters old age.

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References

[1] Eurostat. Statistics explained. Population structure and ageing. 2019. Available from: https://ec.europa.eu/eurostat/statistics-explained/index.php/Population_structure_and_ageing. [Accessed: 20 May 2020]

[2] Eurostat Database. 2020. Available from: https://ec.europa.eu/eurostat/data/database [Accessed: 19 May 2020]

[3] OECD. Better life index. 2020. Available from: http://www.oecdbetterlifeindex.org/countries/portugal/ [Accessed: 18 May 2020]

[4] Eurobarometer. Public Opinion. European Commission. 2020. Available from: https://ec.europa.eu/commfrontoffice/publicopinion/index.cfm/Chart/getChart/themeKy/1/groupKy/1 and https://ec.europa.eu/commfrontoffice/publicopinion/index.cfm/General/index [Accessed: 20 May 2020]

[5] Gesis. 2020. Available from: https://www.gesis.org/eurobarometer-data-service/search-data-access/eb-trends-trend-files/list-of-trends/life-satisf. [Accessed: 18 May 2020]

[6] ESS. 2020. Available from: https://www.europeansocialsurvey.org/ [Accessed: 18 May 2020]

[7] Eurostat. 2020. Statistics explained. Overall life satisfaction in the EU explained. Online data code: il_pw01. Available from: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Subjective_well-being_-_statistics#Overall_life_satisfaction_in_the_EU [Accessed: 19 May 2020]

[8] Vala JT, Ramos A, Lavado S. European Social Survey—Comparative Global Results. Lisboa: Instituto de Ciencias Sociais; 2010 (in Portuguese)

[9] SHARE. SHARE—Survey of Health, Aging, and Retirement in Europe. 2020. Available from: http://www.share-project.org/home0.html [Accessed: 20 May 2020]

[10] Diener E, Seligman M. Beyond money. Psychological Science in the Public Interest. 2004;**5**(1):1-31

[11] Sabatini F. The relationship between happiness and health: Evidence from Italy. Social Science & Medicine. 2014;**114**:178-187

[12] Okun MA, Stock WA, Haring MJ, Witter RA. Health and subjective well-being: A meta-analysis. The International Journal of Aging and Human Development. 1984;**19**(2):111-132

[13] Steptoe A, Deaton A, Stone AA. Subjective wellbeing, health, and ageing. Lancet. 2014. DOI: 10.1016/S0140-6736(13)61489-0. Published online 6 Nov

[14] Anand P. Happiness, well-being and human development: The case for subjective measures. In: Human Development Report. Background Paper. 2016

[15] Dolan P, Peasgood T, White M. Do we really know what makes us happy? A review of the economic literature on the factors associated with subjective well-being. Journal of Economic Psychology. 2008;**29**:94-122

[16] Frey B, Stutzer A. Happiness, economy and institutions. The Economic Journal. 2000;**110**:918-938

[17] Dahlgren G, Withitehead M. Polices and Strategies to Promote Social Equity in Health. Stockholm: Institute for Future Studies; 1991

[18] Blaxter M. Health and Lifestyles. London: Routledge; 1990

[19] Kye SY, Park K. Health-related determinants of happiness in Korean adults. International Journal of Public Health. 2014;**59**:731-738

[20] Gschwandtner A, Jewell SL, Kambhampati US. On the relationship between lifestyle and happiness in the UK. In: School of Economics Discussion Papers, No. 1613. Canterbury: University of Kent, School of Economics; 2016

[21] WHO. Diet, nutrition, and the prevention of chronic diseases. In: Joint WHO/FAO Expert Consultation. WHO Technical Report Series No. 16. Geneva: WHO Press; 2003

[22] WHO. Global Health Risks Mortality and Burden of Disease Attributable to Selected Major Risks. 2009. Available from: http://www.who.int/healthinfo/global_burden_disease/GlobalHealthRisks_report_full.pdf [Accessed: 20 May 2020]

[23] WHO. World Report on Aging and Health. Geneve: WHO Press; 2015

[24] Rodrigues V, Mota-Pinto A, Sousa B, Botelho A, Alves C, Oliveira CR. The aging profile of Portuguese population: A principal component analysis. Journal of Community Health. 2014;**39**(4):747-752

[25] Silva PA. Individual and social determinants of self-rated health and well-being in the elderly population of Portugal. Cadernos Saúde Pública. 2014;**30**(11):2387-2400

[26] Paul C, Teixeira L, Ribeiro O. What about happiness in later life? In: Phellas C, editor. Aging in European Societies, Healthy Aging in Europe. New York: Springer; 2013. pp. 83-96

[27] Delhey J. Life Satisfaction in an Enlarged Europe. Luxembourg: European Foundation for the Improvement of Living and Working Conditions, Office for Official Publications of the European Communities; 2004

[28] Santos DM, Rodrigues S, De Oliveira B, Vaz-De-Almeida MD. Diet quality in elderly Portuguese households. Journal of Nutrition, Health & Aging. 2013;**18**(3):243-250

[29] Bosque-Prous M, Brugal MT, Lima KC, Villalbí JR, Bartroli M, Espelt A. Hazardous drinking in people aged 50 years or older: A cross-sectional picture of Europe, 2011-2013. International Journal of Geriatric Psychiatry. 2016;**32**(8):817-828

[30] Carreira H, Pereira M, Azevedo A, Lunet N. Trends in the prevalence of smoking in Portugal: A systematic review. BMC Public Health. 2012;**12**(1):958

[31] Padrão P, Lunet N, Santos AC, Barros H. Smoking, alcohol, and dietary choices: Evidence from the Portuguese National Health Survey. BMC Public Health. 2007;**7**(1):138

[32] Haveman-Nies A, de Groot LC, van Staveren WA. Relation of dietary quality, physical activity, and smoking habits to 10-year changes in health status in older Europeans in the SENECA study. American Journal of Public Health. 2003;**93**(2):318-323

[33] Gomes M, Figueiredo D, Teixeira L, Poveda V, Paúl C, Santos-Silva A, et al. Physical inactivity among older adults across Europe based on the SHARE database. Age and Ageing. 2017;**46**(1):71-77

[34] Instituto Nacional de Estatística. Inquérito Nacional de Saúde: 2014. Lisboa: INE; 2016. Available from: www.ine.pt/xurl/pub/263714091>. ISSN 1646-4052. ISBN 978-989-25-0356-1