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Perceived health in the Portuguese population aged ≥ 35

Perceção de saúde na população portuguesa ≥ 35 anos

ABSTRACT

OBJECTIVE: To evaluate the exploratory relationship between determinants of health, life satisfaction, locus of control, attitudes and behaviors and health related quality of life in an adult population.

METHODS: Observational study (analytical and cross-sectional) with a quantitative methodological basis. The sample was composed oy 1,214 inhabitants aged ≥ 35 in 31 civil parishes in the County of Coimbra, Portugal, 2011-2012. An anonymous and voluntary health survey was conducted, which collected the following information: demographic, clinical record, health and lifestyle behaviors; health related quality of life (Medical Outcomes Study, Short Form-36); health locus of control; survey of health attitudes and behavior, and quality of life index. Pearson's Linear Correlation, t-Student, Wilcoxon-Mann-Whitney; One-way ANOVA; Brown-Forsythe's F; Kruskal-Wallis; Multiple Comparisons: Tukey (HSD), Games-Howell and Conover were used in the statistical analysis.

RESULTS: Health related quality of life was shown to be lower in females, in older age groups, in obese/overweight individuals, widows, unassisted, those living alone, living in rural/suburban areas, those who did not work and with a medium-low socioeconomic level. Respondents with poor/very poor self-perceived health ($p < 0.0001$), with chronic disease ($p < 0.0001$), who consumed < 3 meals per day ($p \leq 0.01$), who were sedentary, who slept ≤ 6 h/day and had smoked for several years revealed the worst health results. Health related quality of life was positively related with a bigger internal locus, with better health attitudes and behaviors (physical exercise, health and nutritional care, length of dependence) and with different areas of life satisfaction.

CONCLUSIONS: Better health related quality of life was associated with certain social, psychological, family and health characteristics, a satisfactory lifestyle, better socioeconomic conditions and a good internal locus of control over health attitudes and behaviors.

DESCRIPTORS: Health Status. Diagnostic Self Evaluation. Lifestyle. Health Behavior. Quality of Life Health Knowledge, Attitudes, Practice. Cross-Sectional Studies.

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RESUMO

OBJETIVO: Analisar a relação entre determinantes de saúde, satisfação com a vida, locus de controlo, atitudes e comportamentos com a qualidade de vida relacionada à saúde numa população adulta.

MÉTODOS: Estudo observacional (analítico-transversal) com base metodológica quantitativa. A amostra foi de 1.214 habitantes ≥ 35 anos de 31 freguesias do Concelho de Coimbra, Portugal, 2011-2012. Foi realizado inquérito de saúde anónimo e voluntário com as seguintes informações: demográfica, inventário clínico, comportamentos de saúde e estilos de vida; qualidade de vida relacionada à saúde (*Medical Outcomes Study, Short Form*-36); locus de controlo da saúde; questionário de atitudes e comportamentos de saúde e índice de qualidade de vida. Para análise estatística foram utilizados os métodos: Correlação Linear de Pearson; t-Student; Wilcoxon-Mann-Whitney; ANOVA a um Fator; F de Brown-Forsythe; Kruskal-Wallis; Comparações Múltiplas: Tukey HSD, Games-Howell e Conover.

RESULTADOS: A qualidade de vida relacionada à saúde esteve diminuída no sexo feminino, nos grupos etários mais avançados, nos indivíduos com excesso de peso/obesidade, baixas habilitações, viúvos, sozinhos, residentes no meio rural/suburbano, inativos profissionalmente e estatuto socioeconómico médio baixo. Expressaram piores indices de saúde: os inquiridos com autoperceção de saúde de mau/muito mau (p < 0,0001), na presença de doença crónica, a sua frequência (p < 0,0001), que consumiam < 3 refeições diárias (p ≤ 0,01), os sedentários, os que dormiam ≤ 6 h/dia; e os com maior número de anos de tabagismo. A qualidade de vida relacionada à saúde esteve positivamente associada com maior locus de controlo interno, melhores atitudes e comportamentos de saúde (atividade física, cuidados alimentares e de saúde, duração da dependência) e com diferentes áreas de satisfação com a vida.

CONCLUSÕES: Determinadas características sociais e psicológicas, familiares e de saúde, estilos de vida adequados, melhores condições socioeconómicas, bom locus de controlo interno sobre a saúde e atitudes e comportamentos evidenciaram melhor qualidade de vida relacionada à saúde.

DESCRITORES: Nível de Saúde. Autoavaliação Diagnóstica. Estilo de Vida. Comportamentos Saudáveis. Qualidade de Vida. Conhecimentos, Atitudes e Prática em Saúde. Estudos Transversais.

INTRODUCTION

Society today is undergoing constant transformation (economic, political and social) and every day individuals are exposed to determinants that can influence their well-being, health and quality of life. It's necessary to invest in health promotion in order to reduce the effects of certain factors responsible for morbidity and mortality.[11,15] Health and disease determinants are developments or events that produce health alterations in a specific clinical situation. In the life cycle of populations, there has always been a constant seeking after health and well-being, to the detriment of disease. However, there are intrinsic (biological personal, immunological and genetic) factors which determine the individual's susceptibility to contracting disease, and extrinsic factors (environmental, behavioral, physical and social habits, among others) that compete to expose the individual to it.[11]

Health related quality of life (HRQL) is a generic indicator of the state of health, integrating physical, psychological and social components. It enables the state of health to be characterized and predicted, relating it to different indicators.[6] Evaluating HRQL goes beyond an objective medical clinical evaluation. It emphasizes the individual's subjective perception of their own health. It is becoming increasingly common to evaluate individuals' health behavior and control (locus of control)[21] whether to avoid disease or to promote day-to-day

health.[12] The greater the individual's level of personal control and capacity to decide about their own health (internal locus), the greater their satisfaction with HRQL. This condition will be inversely proportional to health related developments depending on "luck" or "powerful others" (external locus).[25] Quality of life as an indicator of satisfaction with life seeks to understand how certain areas of life, valued by the individual, can influence the conditions of their health.[3]

The aim of this study was to analyze the relationship between health determinants, satisfaction with life, the locus of control and health related attitudes and behavior in an adult population.

METHODS

This was an observational study, of a cross-sectional analytical nature, with a population aged $\geq$ 35 in the County of Coimbra, totaling 143,396 residents in 31 parishes.[a] The selection strategy was incomplete (sample) and the observation unit was the individuals. The test for stratified samples[16] was used, controlling the population parameter of "perceived state of health" ($\hat{p}$), total number of residents of the County (N),[a] total number of residents per stratum (parish) (w_i)[a] with random error of ($d^2/Z^2 = 0.05$) and a 95% level of confidence. The final sample was 1,214 interviewees.

The study was based on collecting data using a health survey (self-reporting, anonymous and voluntary). The survey used was adapted from the IV *Inquérito Nacional de Saúde*[b] (IV National Health Survey), the result of various pre-tests with the population. The responses to the respective pre-tests led to some questions, words and terms being reformulated, the format being altered, redundant content eliminated and the topics being reorganized. A team of interviewers was trained to administer the questionnaire to the population. The survey included health indicators (demographic data, clinical inventory, health and lifestyle behavior) and indices seeking to capture, measure and qualify the state of health.

Perceived state of health on the MOS SF-36 Medical Outcomes Study, Short Form-36, Health Survey[4,5,a] is described in eight health dimensions: Physical health measures (PHM), which include: physical functioning, physical performance and pain, which measure the limitations in performing activities of daily living, incapacity to execute everyday tasks due to physical problems and evaluate the severity of pain and resulting limitations;[4] Mental health measures (MHM) including: social functioning, emotional performance and mental health. Social functioning and emotional performance evaluated perceived limitations/disabilities attributable

to personal and emotional problems; mental health included anxiety, depression, loss of emotional/behavioral control and psychological well-being;[4] Sensitive measures and physical and mental results included: individual's vitality associated to energy levels and fatigue and general health with regards a holistic perception of health associated with current situation, resistance to disease and healthy aspect. Regarding the score (for each dimension): the "0" minimum value (worst perception) and the "100" maximum value (best perception of health).

The health locus of control was constructed, adapted and validated for Portuguese.[20] The scale was structured of 14 items, resulting in two dimensions: locus of control and powerful others. The highest score in the locus control dimension corresponded to the premise that health largely depends on our own control. The highest score for powerful others indicated that health is controlled by doctors and other health care professionals.[20] To confirm the author's decisions regarding validation, factorial analysis was used to analyze the principal components. This solution produced two components (dimensions) estimated using the Orthogonal Varimax Rotation: the first dimension explained 24.3% of the total variance; the second explained 17.2% of total variance (41.5% of common variance). Of the 14 items, eight belonged to the first dimension (locus of control) and six to the second (powerful others). In the evaluation of internal consistency, the Cronbach's alpha statistics were 0.763 for the first dimension and 0.697 for the second.

The Health Attitudes and Behavior Questionnaire (HABQ), adapted and validated for Portuguese (list of classification containing 28 items), summarizes behavior related to health and disease.[21] Final classification varies between 28 and 140 points and the higher the score the greater the health protective behavior. The inventory in made up of five categories: physical exercise (pe); 2) nutrition (n); 3) self-care (sc); 4) motor safety; 5) drug or substance use.[21] This is not a scale but rather an inventory and does not assume a close relationship between the items. However, Pais Ribeiro[20] suggested estimating internal consistency. In the physical exercise category (three items with Cronbach's Alpha of 0.683); nutrition (five items with Cronbach's Alpha of 0.784); AC (11 items with Cronbach's Alpha of 0.643); motor safety (three items with Cronbach's Alpha of 0.447); drug or substance use (six items with Cronbach's Alpha of 0.512). The Cronbach's Alpha values estimated in the study were slightly higher than those obtained by Pais Ribeiro.[21]

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[a] Instituto Nacional de Estatística (Editors). Censos 2011 Resultados Definitivos – Região Centro. Instituto Nacional de Estatística. Lisboa, 2012.
[b] Instituto Nacional de Estatística; Instituto Nacional de Saúde Dr. Ricardo Jorge. Inquérito Nacional de Saúde 2005/2006. Lisboa; 2009.

The quality of life index, geriatric version (III), is formed of 33 items (common to all validated versions and adapted for Portuguese) forming four domains: health and functionality; psychological and spiritual; and social, economic and family.[14] Factorial analysis was used to analyze the principal components using the Orthogonal Varimax Rotation to validate the four dimensions. The first dimension explained 24.3% of total variance; the second 8.0%, the third 4.7% and the fourth 4.2% (58.3% of common variance). Regarding internal consistency: health and functionality (13 items with Cronbach's Alpha of 0.901); spiritual and psychological (seven items with Cronbach's Alpha of 0.894); social and economic (eight items with Cronbach's Alpha of 0.832); family (five items with Cronbach's Alpha of 0.835). Items with higher values had a greater impact on the result (satisfaction with different areas of life) than those with lower values.[3,14] The instruments were chosen for their precision, conciseness and ease of use and evaluation.[24]

Anthropometric data such as height (m) (according to the identity document); weight (kg) (according to the subject's perception, referring to the most recent time they weighed themselves and maintaining the same physical condition; body mass index (BMI)[c] (underweight: < 18.50 kg/m², normal weight: 18.50 kg/m² to 24.99 kg/m², overweight: 25.00 kg/m² to 29.99 kg/m², obese: ≥ 30.00 kg/m²); waist and neck circumference measured using a tape measure. For men, risk of obesity according to waist circumference was ≤ 102 cm, normal risk and > 102 cm high risk, and for women ≤ 88 cm was normal risk and > 88 cm high risk.[13] Chronic disease identified[b] were re-grouped according the 10th revision of the International Classification of Disease (ICD).

Re-codified variables were: parishes classified as predominantly rural areas; predominantly urban areas and moderately urban areas.[d] Profession was defined according to the Portuguese Classification of Profession[e] and social class (adapted Graffer Scale) was defined as class I (high), class II (upper middle), class III (middle), class IV (lower middle) and class V (low).

The following tests were used: the Student-t test for independent samples; the Wilcoxon-Mann-Whitney Test; the ANOVA test for one factor; the Brown-Forsythe F Test; the Tukey Multiple Comparisons Test; the Kruskal-Wallis Test; the Conover Multiple Comparisons Test and Pearson's Coefficient of Linear Correlation. When r < 0.2, correlation was very low; [0.2 – 0.39] low correlation; [0.4 – 0.69] moderate correlation; [0.70 – 0.89] high correlation; [0.9 – 1.0]

very high correlation.[24] The statistical interpretation was conducted based on a level of significance of p ≤ 0.05 with a 95% confidence interval.

IBM SPSS Statistics and MedCalc Statistical Software was used.

The study was approved by the Ethics Commission of the *Faculdade de Medicina da Universidade de Coimbra* (Record 04-CE-09, 2009). Participants signed an informed consent form.

RESULTS

The majority of inhabitants in the study were female and lived in parishes classified as predominantly urban; 40.3% were aged 35-45 and 31.5% 45-55 years old; 25.0% had higher education and 23.2% secondary education. The majority of interviewees were Portuguese, Caucasian, married or in a stable relationship, cohabited, had religious beliefs but were not practicing, owned their own home and were middle class. With regards profession, 76.6% were working, of whom 87.5% had a permanent contract. The average length of retirement was 10 years (SD = 7.48 years) and unemployment of two years (SD = 3.39 years). Around 47.1% classified their health as "good" and 38.2% as "reasonable"; 78.1% considered it approximately the same as one year before. Mean height and weight were 1.65 m (SD = 0.08 m) and 71.65 kg (SD = 12.83 kg). Mean waist and neck circumference were 90.93 cm (SD = 15.50 cm) and 36.96 cm (SD = 5.51 cm), respectively.

The majority was overweight or obese and used the health center or hospital for health care; 61.2% reported that they had not been to a doctor in the preceding three months. The location of the most recent appointment was the health center (62.0%) or the GP (72.1%). The majority had consulted a health care professional or received health care in the preceding 12 months. The majority reported being in the habit of controlling arterial tension and cholesterol and 25.5% had had a flu vaccination.

Those who smoked, 20.8%, had been smoking for 25.6 years, on average (SD = 9.14 years) and ex-smokers for 20.0 (SD = 11.0 years); 43.4% said they had regularly or occasionally drunk alcohol for 31.5 years (SD = 11.97 years). The majority was sedentary, slept between seven and eight hours/day, had a Mediterranean diet, had between three and five meals a day, never changed their eating habits, drank less than one liter of water/day and worked a 35-40 hour

week; 34.1% spent their working day "standing and walking, also walking up stairs and lifting objects", 32.1% spend most of their time "sitting down". The most representative group from the Portuguese Classification of Profession was "services" (19.9%), a group that includes salesmen and those who work in personal services, care and similar areas, those who

work in protection/security an "unqualified" individuals (18.4%) encompassing those who worked as cleaners, agricultural workers, animal, forest and fishery workers, extraction industries, construction, industry and transport, among others. Of the 38.6% of individuals who reported having chronic disease, 70.9% had one or two (Table 1).

Table 1. Socio-biographical characterization, profile and health care of the population. County of Coimbra, Portugal, 2011-2012.

Variable		n	%	M	SD
Type of parish	FPU	789	65.0		
	FMU	292	24.1		
	FPR	133	11.0		
	Total	1,214			
Sex	Female	730	60.1		
	Male	484	39.9		
	Total	1,214			
Age groups	35 ⊢ 45	488	40.3		
	45 ⊢ 55	381	31.5		
	55 ⊢ 65	195	16.1		
	≥ 65	146	12.1		
	Total	1,210			
Schooling	1.º CEB incomplete	75	6.2		
	1.º CEB	212	17.6		
	2.º CEB	106	8.8		
	3.º CEB	179	14.8		
	Secondary education	332	23.2		
	Further education	302	25.0		
	Total	1,206			
Nationality	Portuguese	1,196	98.5		
	Foreign	18	1.5		
	Total	1,214			
Ethnic group	White	1,190	98.0		
	Black	22	1.8		
	Asian	2	0.2		
	Total	1,214			
Marital status	Single	128	10.5		
	Married/Stable relationship	908	74.8		
	Divorced/Separated	117	9.6		
	Widowed	61	5.0		
	Total	1,214			
Cohabiting	Yes	966	79.6		
	No	248	20.4		
	Total	1,214			
Children	Yes	1,064	87.9		
	No	146	12.1		
	Total	1,210			

Continue

Continuation

Number of children	1	401	38.0		
	2	502	47.6		
	≥ 3	152	14.4		
	Total	1,055			
Religion	Yes	1,095	90.4		
	No	117	9.7		
	Total	1,212			
If religious	Practicing	384	36.2		
	Non-practicing	678	63.8		
	Total	1,062			
Current residence status	Homeowner	907	75.7		
	Mortgaged	291	24.3		
	Total	1,198			
Type of residence	House	700	59.4		
	Apartment	479	40.6		
	Total	1,179			
Professional situation	Active	930	76.6		
	Non-active	284	23.4		
	Total	1,214			
Type of contract	Permanent	802	87.6		
	Temporary	114	12.4		
	Total	916			
Social class	Class I	100	12.1		
	Class II	247	29.7		
	Class III	421	50.6		
	Class IV	64	7.7		
	Total	832			
Retired	Length (years)			9.8	7.5
Unemployed	Length (years)			2.3	3.4
Self-perceived general state of health	Very good	103	8.9		
	Good	543	47.1		
	Reasonable	441	38.2		
	Poor/Very poor	54	4.7		
	No opinion	12	1.0		
	Total	1,153			
Describe your current state of general health compared with one year ago[a]	Much better	19	1.6		
	Some improvement	74	6.1		
	Approximately the same	946	78.1		
	A little worse	160	13.2		
	Much worse	13	1.1		
	Total	1,212			
Anthropometric data	Height (m)	1,169		1.65	0.1
	Weight (kg)	1,160		71.7	12.8
	BMI (kg/m^2)	1,159		26.2	3.8
	PC (cm)	901		90.9	15.5
	Neck circumference (cm)	884		37.0	5.5

Continue

Continuation

Body mass index	Underweight	4	0.3
	Normal weight	458	39.5
	Overweight	526	45.4
	Obese	171	14.8
	Total	1,159	
Health center[a]	Yes	959	84.8
	No	172	15.2
	Total	1,131	
Hospital[a]	Yes	564	49.9
	No	567	50.1
	Total	1,131	
Private health care[a]	Yes	196	17.3
	No	935	82.7
	Total	1,131	
Other[a]	Yes	5	0.4
	No	1,126	99.6
	Total	1,131	
Visit doctor ≤ 3 months	Yes	471	38.8
	No	743	61.2
	Total	1,214	
Type of consultation	GP	835	72.1
	Specialty	323	27.9
	Yes	1,158	
Sick leave[b]	Yes	14	1.2
	No	1,136	98.8
	Total	1,150	
Feeling ill[b]	Yes	267	22.0
	No	947	78.0
	Total	1,214	
Requested prescription or tests[b]	Yes	184	15.2
	No	1,030	84.8
	Total	1,214	
Other reason[b]	Yes	740	61.0
	No	474	39.0
	Total	1,214	
Visit dentist...	Yes	1,115	91.8
	No	99	8.2
	Total	1,214	
Consulted dentist ≤ 12 months	Yes	736	66.2
	No	375	33.8
	Total	1,111	
Flu vaccination	Yes	310	25.5
	No	875	72.1
	Don't remember	29	2.4
	Total	1,214	
Measured blood pressure	Yes	898	75.5
	No	283	23.8
	Don't remember	8	0.7
	Total	1,189	

Continue

Continuation

Cholesterol	Yes	681	57.8		
	No	484	41.1		
	Don't remember	14	1.2		
	Total	1,179			
Smoking	Smoker	250	20.8		
	Ex-smoker	173	14.4		
	Non smoker	780	64.8		
	Total	1,203			
Length of habit	Smoker			25.6	9.1
	Ex-smoker			20.0	10.3
Started smoking (age)	Smoker			17.5	4.6
	Ex-smoker			17.4	4.7
Alcohol intake	Yes	522	43.4		
	No	646	53.7		
	Ex-consumer	34	2.8		
	Total	1,202			
Alcohol intake (years)	Consumer			31.5	12.0
	Ex-consumer			21.8	16.5
Age started drinking	Consumer			18.0	3.8
	Ex-consumer			19.1	7.7
Physical exercise	Yes	332	27.7		
	No	866	72.3		
	Total	1,198			
Hours of sleep per night	< 7	285	24.0		
	7 to 8	797	67.2		
	> 8	104	8.8		
	Total	1,186			
Hours worked per week	< 35	49	5.4		
	35 to 40	612	67.4		
	> 40	247	27.2		
	Total	908			
Type of work	a_1) Option	294	32.1		
	b_2) Option	250	27.3		
	c_3) Option	312	34.1		
	d_4) Option	37	4.0		
	e_5) Option	22	2.4		
	Total	915			
Portuguese classification of professions (PCP)	a_	49	5.7		
	b_	135	15.7		
	c_	103	12.0		
	d_	125	14.5		
	e_	172	20.0		
	f_	9	1.0		
	g_	87	10.1		
	h_	23	2.7		
	i_	159	18.5		
	Total	862			

Continuation

Type of diet	Mediterranean	990	83.5
	Vegetarian	17	1.4
	Macrobiotic	10	0.8
	Fast-food	2	0.2
	Mixed	45	3.8
	Don't know	122	10.2
	Total	1,186	
Nº meals per day	< 3	49	4.1
	3 to 5	1,094	90.9
	≥ 6	60	5.0
	Total	1,203	
Eating out	No	351	29.7
	Yes	832	70.3
	Total	1,183	
Changed eating habits	Yes	194	16.4
	No	986	83.6
	Total	1,180	
Glasses of water/day	Don't remember	36	3.2
	< 5	683	60.0
	5 to 7	334	29.3
	8 to 10	73	6.4
	11	13	1.1
	Total	1,139	
Chronic disease	Yes	468	38.6
	No	746	61.4
	Total	1,214	
Frequency of chronic disease	1 to 2	332	70.9
	3 to 4	91	19.4
	≥ 5	45	9.6
	Total	468	

FPU: predominantly urban parish; FMU: moderately urban parish; FPR: predominantly rural parish; a) SF-36 Scale item; BMI: body mass index; PC: waist circumference

Type of activity at work: a_1) mostly seated; b_2) standing and walking, without other physical activity; c_3) standing and walking, but also climbing stairs and lifting objects; d_4) Hard physical activity; e_5) standing and walking, but also climbing stairs and lifting objects. Hard physical activity;

Portuguese Classification of Professions: a: Representatives of the Legislative and Executive Bodies, Officers, Directors and Executive Managers; b: Technicians and Intellectual and Scientific Activities; c: Mid-level Technicians and Professionals; d: Administrative personnel; e: Personal Services, Safety and Security Workers and Salespeople; f: Farmers and Skilled Workers, Agriculture, Fisheries and Forestry; g: Skilled Industry and Construction Workers and Craftsmen; h: Equipment and Machinery Operators and assemblers; i: Unskilled workers.

[a] Usually rely on health services for health care.

[b] Main reason for most recent consultation.

Behavioral performance was significantly lower in women and they also showed greater disability and expressed more discomfort in activities of daily living compared with males regarding PHM. A similar pattern was observed in the ≥ 65 and 55-65 years old age groups compared with younger individuals. The interviewees with lower educational achievement had worse results for physical health than those with more schooling. The health indices were better in those who were single and those who were married/ in a stable relationship than those who were widowed. There was a similar pattern for those who lived alone. Regarding MHM, females, those aged ≥ 55, those with low levels of educational attainment and individuals who were widowed or living alone had worse health indices, with the exception of present or absent fathers (p > 0.05). The well-being of females, those with low schooling, widows and those with a father present was significantly worse at a health level and they

had less energy in the general health and vitality measure. Those living in areas which were predominantly urban, those living in apartments and who paid monthly had better HRQL than those who lived in predominantly rural and moderately urban areas, those who lived in houses and those who owned their own homes. Those with a religion had worse physical functioning (p = 0.016) and mental health (p = 0.037) compared with those who had no religion. Those who were practicing had worse HRQL compared with non-practicing individuals. Low levels of HRQL were found in those who were inactive, and a similar pattern was found in those whose employment was precarious regarding physical performance, pain and vitality, with the exception of physical functioning (p = 0.450) and general health (p = 0.421).The lower middle class has a greater health deficit in terms of physical function (p = 0.002) and general health (p < 0.0001). However, MHM and vitality did not differ according to social class (Table 2).

Those who perceived their own health as reasonable, poor/very poor had worse HRQL. Those who were overweight and obese had lower HRQL at the physical level, and there was a similar pattern regarding waist circumference (presence of risk). Obese individuals had similar mean values for social function (p = 0.100), but worse performance for emotional and mental health compared with the other BMI groups. Being obese or overweight showed worse general health and vitality indices and there was a similar pattern regarding waist circumference, with the exception of vitality (p = 0.082). Those who consumed three to five or more meals a day had better PHM, MHM and general health. Regular/occasional alcohol drinkers perceived their physical function to be better, with the exception of physical performance (p = 0.081) and pain (p = 0.139). Concerning mental health, consumers revealed better emotional (p = 0.024) and mental health (p = 0.008) compared with those who did not drink, with the exception of social function and vitality. Significantly poorer health conditions were observed in smokers and ex-smokers who had smoked for a long time. This pattern was not present in MHM. Individuals who were sedentary, who slept ≤ 6h or fewer had worse HRQL.

Those who had seen a doctor in the preceding three months (health care) had a significant physical and mental health deficit, although the type of appointment (General/Specialty) was not a differentiator. Those who had taken prescribed medication in the preceding two weeks had worse PHM and mental health (p = 0.032), with the exception of social function and emotional performance. Those who had taken non-prescription medicine did not differ with regards HRQL measures. The physical functioning, physical performance and pain of those who had had a doctor's, dentist's or other appointment did not differ from those who had not seen any of those professionals (p > 0.05). However,

the former indicated better quality of life in terms of mental and general health and vitality. Those who reported having seen a health professional in the ≤ 12 months tended to have worse HRQL indices compared with those whose last consultation had been more than 12 months before. Worse HRQL was observed, in the majority of indices, in those who had had a mammogram or a flu vaccination and those who controlled high blood pressure and cholesterol (Table 3).

The most prevalent chronic diseases were: arterial hypertension (15.5%), rheumatic diseases (11.2%), depression (8.8%), allergies and rhinitis (7.7%). HRQL indices were worse in the presence of a chronic disease and its frequency were evaluated (Table 4).

Those with worse physical health conditions had a proportionally worse state of mental health, a lower indices for general health and vitality and *vice-versa* when the inter-relationship between the different measures and HRQL was evaluated. Those who considered that their health depended on their personal health behavior (locus of control) had better indices of physical functioning, physical performance and general health, although not of MHM. However, those who believed that their health depended more on external entities (powerful others) had worse HRQL indices. As for the HABQ, those who sought a better physical condition (physical exercise) and took more care with their diet (nutrition) had higher indices of HRQL. A pattern of positive correlation was observed with the development of better preventative behavior (self-care) and avoided accidents/injuries (motor safety) in terms of measures of mental health. Lower dependence on chemical substances (e.g., drugs) correlated positively with mental health. As for the quality of life index, the more satisfied the individual was with life in general (general index), health and functionality, social relationships and economic conditions (social and economic), belief and psychological well-being (spiritual and psychological) and family support (family) the higher the indices were for HRQL (Table 5).

DISCUSSION

The majority of the different indicators/indices monitored (personal, clinical, health behavior, life styles and satisfaction with life) were shown to have significant impact on the HRQL of our inhabitants.

The personal characteristic with the greatest impact on HRQL was the biological factor, gender. Thus, as in the literature, women tend to be the group with the highest rates of morbidity and worse HRQL in both physical and mental terms.[7,17] They also make more use of health care.[4,7] Age was shown to be an important marker in understanding a population's HRQL.[4] HRQL deteriorates as age increases, as seen in the literature.[4,7,25]

Table 2. Relationship between individual, religious, social and professional characteristics and the perception of health status (Short Form-36 Scale). County of Coimbra, Portugal, 2011-2012.

| | Physical dimension | | | | | | | | | | | | | | | |
| | Physical functioning | | | | Physical performance | | | | Pain | | | | General health | | | |
	n	M	SD	p	n	M	SD	p	n	M	SD	p	n	M	SD	p
Female	719	82.4	20.8	<0.0001[b]	725	82.6	22.9	0.003[b]	727	67.4	24.3	<0.0001[b]	726	60.7	18.4	0.01[b]
Male	478	87.7	19.9		479	86.4	21.6		484	74.7	23.3		479	63.4	17.2	
Aged 35├45	487	92.8	13.2	<0.0001[a]	487	91.8	15.9	<0.0001[a]	487	78.2	22.1	<0.0001[c]	485	68.1	15.5	<0.0001[a]
Aged 45├55	374	86.7	15.6		378	86.8	18.4		380	69.5	22.9		379	62.3	16.5	
Aged 55├65	189	78.6	19.8		191	78.0	23.0		194	66.1	23.7		193	57.4	17.9	
Aged ≥65	143	58.2	3.2		144	58.9	29.3		146	51.9	23.0		144	45.2	17.8	
1.° CEB inc.	73	54.1	31.2	<0.0001[d]	73	56.9	30.9	<0.0001[d]	75	50.2	24.6	<0.0001[c]	75	42.2	17.2	<0.0001[c]
1.° CEB	207	76.9	23.3		208	80.1	24.4		212	66.3	24.0		209	55.3	16.9	
2.° CEB	101	83.2	18.6		103	84.4	19.1		106	65.8	21.7		105	58.9	15.9	
3.° CEB	179	87.8	16.8		179	86.3	19.8		177	72.9	22.4		178	62.4	15.7	
Secondary	331	89.2	16.1		331	87.6	20.4		332	72.3	24.3		331	65.3	17.6	
Further	298	90.5	13.7		302	88.3	18.1		301	76.1	22.5		300	67.9	16.3	
Single	127	92.0	12.0	<0.0001[d]	127	91.3	16.1	<0.0001[d]	127	78.2	21.4	<0.0001[a]	125	66.7	16.3	<0.0001[c]
M/SR	896	85.0	19.8		901	84.8	22.1		906	70.0	24.2		904	61.8	17.8	
D/S	116	86.0	19.6		117	83.1	20.8		117	73.2	22.4		117	63.8	16.9	
Widowed	58	57.2	29.0		59	61.0	27.9		61	52.1	21.1		59	47.0	18.3	
Yes V.C.	954	85.4	19.6	0.127[e]	959	85.0	21.8	0.012[e]	964	70.4	24.1	0.793[b]	961	62.2	17.8	0.103[b]
No V.C.	243	81.1	24.3		245	80.8	24.6		247	69.9	24.4		244	60.1	18.8	
Children – Yes	1,048	83.7	20.9	<0.0001[e]	1,054	83.6	22.5	0.002[e]	1,062	69.3	24.2	<0.0001[e]	1,057	61.2	17.9	0.005[b]
Children – No	146	90.4	17.9		146	88.3	21.3		145	77.2	22.5		144	65.8	18.4	
FPU	779	87.0	17.6	<0.0001[d]	784	86.5	20.2	<0.0001[c]	787	73.5	23.1	<0.0001[c]	785	63.6	16.9	<0.0001[c]
FMU	286	79.8	25.6		287	80.2	25.6		291	66.2	24.7		287	60.0	18.9	
FPR	132	79.7	22.9		133	78.8	25.6		133	60.4	24.8		133	54.9	19.9	
House	690	82.0	21.9	<0.0001[e]	695	81.8	23.8	<0.0001[e]	698	67.7	24.5	<0.0001[e]	695	60.2	18.8	<0.0001[e]
Apartment	475	88.8	16.8		476	88.2	19.1		478	74.8	22.5		476	64.4	16.1	

Continue

Continuation

	n	M	SD	p	n	M	SD	p	n	M	SD	p	n	M	SD	p
H-P	892	82.6	21.9	< 0.0001[e]	898	82.1	23.7	< 0.0001[e]	904	67.6	25.0	< 0.0001[e]	899	60.6	19.1	< 0.0001[e]
Mortgage	289	90.1	15.2		290	90.4	16.5		291	78.6	18.4		290	65.1	13.1	
Rel. Yes	1,078	83.9	21.2	0.016[e]	1,085	83.9	22.8	0.909[e]	1,092	70.1	24.5	0.229[b]	1,086	61.5	18.3	0.093[b]
Rel. No	117	89.6	14.1		117	86.6	18.3		117	72.2	20.7		117	63.9	14.3	
Practicing	378	78.7	23.3	< 0.0001[e]	383	79.1	24.4	< 0.0001[e]	383	64.5	24.9	< 0.0001[b]	383	57.0	19.7	< 0.0001[b]
Not practicing	670	86.9	19.2		671	86.6	21.3		676	73.4	23.6		671	64.0	16.8	
Inactive	279	68.5	27.9	< 0.0001[e]	281	67.0	28.6	< 0.0001[e]	283	59.1	25.1	< 0.0001[e]	281	51.0	19.8	< 0.0001[b]
Active	918	89.4	14.8		923	89.3	17.1		928	73.7	22.8		924	65.0	16.0	
T.D.	114	87.7	15.7	0.450[e]	114	84.4	18.4	< 0.0001[e]	113	70.4	21.2	0.026[e]	114	63.9	16.4	0.421[b]
T.I.	792	89.6	14.7		797	90.1	16.6		801	74.5	22.7		796	65.2	16.0	
Class I[a]	99	90.2	15.3	0.002[d]	100	89.7	17.2	0.722[d]	100	76.5	22.9	0.559[c]	100	70.4	16.2	< 0.0001[c]
Class II	243	89.3	14.6		246	88.7	17.9		246	72.8	23.9		244	64.8	17.2	
Class III	414	90.1	14.6		415	90.0	16.5		420	73.7	22.2		418	64.8	15.4	
Class IV	64	86.1	13.7		64	87.9	17.3		64	72.4	22.1		64	59.0	12.9	

	Mental dimension															
	Vitality				Social functioning				Emotional performance				Mental health			
	n	M	SD	p	n	M	SD	p	n	M	SD	p	n	M	SD	p
Female	725	62.6	21.9	< 0.0001[b]	728	80.2	21.9	< 0.0001[b]	724	85.0	21.7	0.006[b]	725	73.3	20.7	< 0.0001[b]
Male	477	70.3	20.6		484	85.5	19.0		478	88.3	19.8		476	79.2	17.4	
Aged 35 ⊢ 45	486	71.6	19.9	< 0.0001[a]	487	86.8	19.1	< 0.0001[a]	487	90.8	17.3	< 0.0001[a]	486	79.7	17.5	< 0.0001[a]
Aged 45 ⊢ 55	377	66.0	19.9		381	82.6	20.2		377	88.8	17.6		377	76.1	18.3	
Aged 55 ⊢ 65	190	60.9	22.9		194	78.9	21.2		190	81.3	22.8		190	70.7	22.6	
Aged ≥ 65	145	51.7	21.3		146	71.3	23.2		144	71.2	28.7		144	68.2	21.3	
1.° CEB inc.	74	45.7	24.1	< 0.0001[a]	75	68.5	24.9	< 0.0001[d]	73	66.8	27.4	< 0.0001[d]	72	63.2	23.4	< 0.0001[d]
1.° CEB	207	63.3	23.7		212	81.3	21.1		207	85.1	23.5		207	73.9	20.5	
2.° CEB	105	63.1	18.7		106	81.7	19.4		103	87.2	19.6		104	74.9	17.8	
3.° CEB	178	66.7	20.2		178	84.2	20.0		179	87.5	20.0		178	76.3	19.3	
Secondary	330	69.1	20.9		332	84.0	21.3		330	87.8	19.8		330	77.1	19.9	
Further	300	69.0	18.7		301	83.9	20.0		302	89.3	16.8		300	78.5	17.0	

Continue

Continuation

	n	M	SD	p	n	M	SD	p	n	M	SD	p	n	M	SD	p
Single	126	69.3	19.7	<0.0001[c]	127	82.6	19.4	<0.0001[d]	127	89.4	18.7	<0.0001[d]	126	78.8	17.8	0.005[c]
M/SR	899	66.0	21.6		907	83.7	20.5		899	87.1	20.4		898	76.0	19.6	
D/S	117	66.3	21.1		117	80.2	20.3		117	82.4	22.5		117	72.9	19.8	
Widowed	60	52.1	21.2		61	65.0	24.2		59	74.3	26.5		60	68.9	21.2	
Yes V.C.	957	66.4	21.5	0.018[e]	965	83.7	20.3	<0.0001[e]	957	87.2	20.4	0.003[e]	956	76.3	19.6	0.014[e]
NoV.C.	245	62.9	21.8		247	76.8	22.4		245	82.9	22.9		245	73.2	19.5	
Children – Yes	1,053	65.2	21.7	0.032[e]	1,063	82.3	20.9	0.669[e]	1,052	86.0	21.1	0.170[e]	1,052	75.3	19.9	0.065[e]
Children – No	145	69.3	20.7		145	82.2	20.9		146	88.7	19.7		145	79.0	16.9	
FPU	783	67.9	21.4	<0.0001[c]	788	83.3	20.4	0.038[c]	782	87.9	19.5	0.004[d]	782	77.2	19.3	<0.0001[c]
FMU	286	64.5	19.9		291	81.3	22.3		287	83.4	23.3		286	73.9	19.8	
FPR	133	55.2	22.6		133	78.6	20.9		133	83.2	23.3		133	70.4	20.0	
House	691	64.0	21.5	<0.0001[e]	698	81.0	21.6	0.005[e]	693	85.0	22.0	0.01[e]	690	74.2	20.1	<0.0001[e]
Apartment	478	68.8	20.9		479	84.8	19.1		476	88.8	18.7		478	78.4	18.0	
H-P	896	63.5	21.7	<0.0001[e]	905	81.3	21.5	0.003[e]	896	84.8	21.9	<0.0001[e]	895	73.8	20.0	<0.0001[e]
Mortgage	290	72.7	19.7		291	85.6	18.7		290	91.3	16.6		290	81.8	16.6	
Rel. Yes	1,083	65.8	21.7	0.519[b]	1,093	82.5	21.1	0.058[e]	1,083	86.1	21.4	0.549[e]	1,082	75.3	19.9	0.037[b]
Rel. No	117	64.5	19.9		117	80.2	19.2		117	87.8	17.1		1,117	78.6	15.4	
Practicing	382	60.3	21.0	<0.0001[b]	383	79.7	21.2	0.001[b]	382	83.5	22.3	<0.0001[e]	382	72.3	20.4	<0.0001[b]
Not practicing	670	69.0	21.4		677	84.1	20.9		670	87.7	20.7		669	77.4	19.2	
Inactive	282	55.4	22.9	<0.0001[b]	283	73.5	23.0	<0.0001[e]	281	74.4	26.8	<0.0001[e]	281	67.5	21.7	<0.0001[e]
Active	920	68.8	20.1		929	85.0	19.5		921	89.9	17.4		920	78.1	18.3	
T.D.	114	64.1	18.7	0.007[b]	114	81.0	18.5	<0.001[e]	113	85.3	17.8	<0.0001[e]	114	75.0	16.9	0.004[e]
T.I.	793	69.5	20.2		801	85.5	19.6		796	90.7	17.1		793	78.6	18.4	
Class I[a]	99	69.0	19.4	0.742[c]	100	82.5	21.1	0.313[d]	100	89.5	15.8	0.074[d]	99	78.5	16.6	0.066[d]
Class II	244	68.1	19.6		246	85.4	19.4		244	87.3	20.3		244	76.0	19.4	
Class III	415	69.8	20.7		421	86.1	19.3		415	91.2	16.3		415	79.4	18.7	
Class IV	64	70.2	21.7		64	85.9	20.5		64	90.9	16.6		64	78.4	19.8	

M: mean; SD: standard deviation; 1° cycle EB inc.: 1° cycle of elementary education incomplete; M/SR: Married/stable relationship; D/S: Divorced/Separated; Yes V.C.: yes cohabit; No V.C.: not cohabiting; FPU: predominantly urban parish; FMU: moderately urban parish; FPR: predominantly rural parish; H-P: homeowner; Rel. Yes: religion yes; Rel. No: religion no; a) Social class – Graffar scale; T.D.: temporary; T.I.: permanent

Tests: [a] F Brown-Forsythe; [b] t-Student; [c] ANOVA one factor; [d] Kruskal-Wallis; [e] Mann-Whitney.

Table 3. Relationship between state of health and quality of life related to the population's health perception and care. County of Coimbra, Portugal, 2011-2012.

| | Physical dimension | | | | | | | | | | | | | | | |
| | Physical functioning | | | | Physical performance | | | | Pain | | | | General health | | | |
	n	M	SD	p	n	M	SD	p	n	M	SD	p	n	M	SD	p
M.B.	103	96.3	7.3	< 0.0001[c]	103	97.0	8.7	< 0.0001[c]	103	88.2	16.9	< 0.0001[c]	103	82.2	11.7	< 0.0001[a]
B.	540	92.7	11.7		543	92.8	13.4		541	79.5	18.4		541	69.8	11.7	
R.	433	76.6	21.7		435	75.0	23.8		440	59.4	22.4		437	51.8	14.3	
M.M.M.	51	45.1	24.8		53	48.5	29.5		54	38.2	24.2		53	29.2	13.9	
Underweight	4	97.5	2.9	< 0.0001[c]	4	95.3	9.4	< 0.0001[c]	4	84.0	19.1	< 0.0001[c]	4	72.0	10.8	< 0.0001[c]
Normal	452	87.3	19.3		455	86.9	2.4		456	73.8	23.4		453	64.4	17.9	
Overweight	517	84.2	20.0		522	84.0	21.8		525	68.8	24.1		523	60.9	17.4	
Obese	170	76.0	25.0		169	75.8	27.5		171	64.2	25.3		171	57.6	18.8	
Normal[a]	551	85.6	20.2	< 0.0001[d]	554	84.3	21.0	< 0.0001[d]	558	69.7	23.7	< 0.0001[b]	553	62.1	18.0	< 0.0001[b]
High risk	339	77.2	23.5		339	77.5	26.3		341	63.6	25.3		341	57.2	18.5	
< 3 meals	49	78.6	25.9	0.161[c]	49	79.7	27.9	0.734[c]	49	63.1	30.5	0.212[c]	49	60.0	21.4	0.567[c]
3 to 5 meals	1,078	84.7	20.6		1,086	84.3	22.1		1,091	70.7	23.7		1,085	61.7	17.7	
≥ 6 meals	60	85.6	16.4		59	84.9	22.1		60	67.9	24.7		60	64.4	20.4	
Alc. Yes	515	86.3	19.6	0.001[d]	517	85.0	22.4	0.081[d]	521	71.4	23.5	0.139[d]	519	63.1	16.8	0.022[b]
Alc. No	670	83.0	21.5		675	83.3	22.4		678	69.3	24.5		674	60.7	18.8	
Years smoking	246	-0.199		0.002[e]	246	-0.136		0.033[e]	247	-0.127		0.046[e]	245	-0.139		0.030[e]
Years ex-smoker	160	-0.224		0.004[e]	164	-0.232		0.003[e]	165	-0.323		< 0.001[e]	164	-0.237		0.002[e]
A.F. – Yes	328	90.4	15.8	< 0.0001[d]	329	88.2	19.8	< 0.0001[d]	331	76.6	23.5	< 0.0001[d]	328	67.2	16.8	< 0.0001[d]
A.F. – No	855	82.3	21.8		861	82.7	23.1		864	67.9	23.8		862	59.8	18.0	
< 7 h/d[a]	283	80.9	21.8	< 0.0001[c]	284	77.9	24.4	< 0.0001[c]	282	62.4	24.4	< 0.0001[c]	281	58.1	19.6	< 0.0001[c]
7 to 8 h/day	786	86.4	19.1		791	86.5	20.8		797	72.7	23.5		793	63.2	17.2	
> 8 h/day	102	79.7	26.5		103	82.5	25.6		104	73.5	23.5		104	60.5	18.5	
Vis.M – No	468	89.1	18.1	< 0.0001[d]	468	88.7	19.2	< 0.0001[d]	471	78.0	21.5	< 0.0001[d]	468	66.9	16.1	< 0.0001[d]
Vis.M – Yes	729	81.5	21.7		736	81.2	23.8		740	65.3	24.4		737	58.5	18.4	
T.C. – CG	501	80.8	22.3	0.326[d]	506	81.0	23.7	0.754[d]	509	65.8	24.1	0.344[d]	509	58.6	18.1	0.811[b]
T.C. – Esp	226	83.0	20.1		228	81.3	24.2		229	64.0	25.0		226	58.3	19.2	
C.M.R –Yes	523	81.9	21.7	< 0.0001[d]	528	82.1	23.6	0.005[d]	529	66.2	24.7	< 0.0001[d]	527	59.9	18.5	0.001[b]
C.M.R – No	649	86.6	19.6		652	85.9	21.1		658	73.7	22.8		654	63.3	17.3	

Continue

Continuation

	n			p	n			p	n			p	n			p
C.M.N.R Yes	321	84.4	20.8	0.936[d]	324	83.6	22.3	0.583[d]	324	69.7	24.1	0.437[d]	322	62.9	17.4	0.220[b]
C.M.N.R No	849	84.7	20.6		852	84.3	22.4		858	70.6	23.9		855	61.4	18.1	
C.D. Yes	1,100	84.7	20.4	0.314[d]	1,106	84.2	22.5	0.520[d]	1,113	70.5	24.2	0.214[b]	1,107	62.1	17.9	0.036[b]
C.D. No	97	82.0	23.0		98	83.4	22.0		98	67.4	23.7		98	58.1	17.5	
C.D.[b] Yes	724	85.2	19.6	0.997[d]	728	84.2	22.0	0.410[d]	734	69.9	24.6	0.202[d]	729	62.9	18.2	0.104[d]
C.D. No	372	84.0	21.8		374	84.1	23.5		375	71.8	23.4		374	60.7	17.6	
Mam. Yes	506	80.9	20.6	<0.0001[d]	513	81.8	22.6	0.007[d]	512	65.4	24.5	<0.0001[d]	513	59.4	18.4	0.001[b]
Mam. No	201	87.4	19.0		200	85.9	21.5		203	72.8	22.6		201	64.7	17.5	
Citol. Yes	436	83.9	17.9	0.902[d]	441	83.3	20.9	0.888[d]	441	65.1	24.3	0.005[d]	441	61.7	18.4	0.271[d]
Citol. No	227	80.4	24.6		228	81.3	25.3		230	70.1	24.5		229	59.2	18.3	
Vacina Yes	305	76.5	25.7	<0.0001[d]	307	75.8	27.7	<0.0001[d]	310	61.4	26.1	<0.0001[d]	308	54.9	20.9	<0.0001[d]
Vacina No	863	87.6	17.4		868	87.3	19.2		872	73.6	22.6		868	64.5	16.0	
CTA – Yes	886	83.0	21.5	<0.0001[d]	891	82.9	23.2	<0.0001[d]	896	69.2	24.3	0.007[d]	893	60.7	18.5	0.001[d]
CTA – No	281	89.4	17.2		282	89.0	18.5		282	74.0	22.8		281	65.2	15.7	
Coles. – Yes	666	81.9	20.9	<0.0001[d]	673	80.1	23.5	<0.0001[d]	679	66.2	23.9	<0.0001[d]	675	59.0	19.1	<0.0001[d]
Coles. – No	484	88.5	18.8		484	90.4	18.4		483	76.2	22.8		483	65.8	15.4	
Mental dimension																
M.B.	103	78.3	15.2	<0.0001[a]	103	93.1	13.0	<0.0001[c]	103	95.9	9.5	<0.0001[c]	103	86.3	12.7	<0.0001[a]
B.	538	74.4	17.0		542	88.9	16.5		542	92.8	14.2		538	82.2	15.0	
R.	440	55.9	20.5		440	75.0	21.2		435	79.2	23.6		437	68.0	20.7	
M.M.M.	54	39.1	19.7		54	60.9	26.7		53	61.8	28.7		52	54.0	22.0	
Underweight	4	72.5	9.6	<0.0001[c]	4	87.5	10.2	0.100[c]	4	100.0	0.0	0.001[c]	4	80.5	7.7	0.024[c]
Eutrophic	453	68.6	20.8		456	83.4	21.4		454	88.2	19.5		453	77.2	19.6	
Overweight	521	64.6	21.6		526	82.0	20.4		521	86.4	20.4		520	75.3	19.3	
Obesity	170	60.3	22.6		171	80. 6	20.1		169	80.1	25.6		170	72.8	19.7	
Normal[a]	555	63.5	20.1	0.082[b]	559	81.1	20.1	0.133[b]	554	85.4	20.7	0.275[d]	554	74.2	19.0	0.321[d]
High risk	340	60.9	22.7		341	78.9	22.2		339	83.1	23.0		340	72.9	20.6	
< 3 Meals	49	56.2	24.9	0.013[c]	49	70.6	25.0	0.001[c]	49	82.1	21.4	0.015[c]	49	64.9	22.7	0.002[c]
3 a 5 Meals	1,083	66.0	21.3		1,092	82.7	20.7		1,084	86.2	21.2		1,082	76.1	19.4	
≥ 6 Meals	60	68.1	21.4		60	84.4	18.8		59	92.9	14.5		60	77.9	15.1	
Alc. Yes	516	67.3	20.8	0.062[d]	521	84.1	18.5	0.110[d]	515	88.0	19.6	0.024[d]	515	77.8	17.7	0.008[d]
Alc. No	674	64.4	22.0		679	80.8	22.6		675	84.9	21.9		674	74.0	20.8	

Continue

Continuation

	n	M/r	SD	p	n	M/r	SD	p	n	M/r	SD	p	n	M/r	SD	p
Years smoking	246	-0.080		0.209[e]	247	-0.005		0.937[e]	246	-0.038		0.555[e]	246	-0.084		0.190[e]
Years ex-smoker	162	-0.157		0.046[e]	165	-0.264		0.001[e]	163	-0.140		0.074[e]	161	-0.091		0.253[e]
A.F. – Yes	329	71.9	20.1	<0.0001[d]	331	85.2	20.6	<0.0001[d]	329	89.3	19.8	<0.0001[d]	329	79.9	18.9	<0.0001[d]
A.F. – No	859	63.4	21.6		865	81.2	21.0		859	85.3	21.2		858	74.1	19.6	
<7 h/day[a]	282	58.6	22.0	<0.0001[c]	283	75.9	23.0	<0.0001[c]	283	80.1	23.7	<0.0001[c]	282	68.8	21.0	<0.0001[c]
7 a 8 h/day	791	67.9	20.7		797	84.5	19.7		791	88.4	19.3		790	77.9	18.5	
> 8 h/day	102	68.7	22.3		104	82.7	21.9		102	86.6	23.0		102	78.2	20.2	
Vis.M – No	467	70.6	19.8	<0.0001[d]	471	86.4	18.8	<0.0001[d]	468	89.6	17.8	<0.0001[d]	467	79.1	17.1	<0.0001[d]
Vis.M – Yes	735	62.7	22.1		741	79.6	21.8		734	84.2	22.6		734	73.5	20.8	
T.C. – CG	507	62.6	22.3	0.883[b]	510	80.4	21.1	0.206[d]	504	84.6	22.0	0.437[d]	506	74.1	20.9	0.156[d]
T.C – Esp	226	62.3	21.7		229	77.8	23.1		228	83.0	23.8		226	72.0	20.5	
C.M.R –Yes	528	63.2	21.8	<0.0001[b]	529	81.2	21.5	0.084[d]	527	86.1	20.5	0.196[d]	527	74.3	20.3	0.032[d]
C.M.R – No	650	67.8	21.2		659	83.3	20.3		651	86.7	21.2		650	76.9	18.8	
C.M.N.R Yes	323	65.5	20.7	0.647[d]	324	81.6	20.9	0.317[d]	324	86.2	19.7	0.579[d]	323	75.7	19.2	0.655[d]
C.M.N.R No	852	65.8	21.9		859	82.8	20.8		850	86.4	21.4		851	75.9	19.7	
C.D. Yes	1,106	66.1	21.6	0.026[b]	1,114	82.6	21.1	0.008[d]	1,105	86.5	20.9	0.040[d]	1,105	76.1	19.6	0.002[d]
C.D. No	96	61.0	20.3		98	78.8	18.5		97	83.3	21.9		96	70.6	19.4	
C.D.[b] Yes	728	65.1	21.2	0.005[d]	735	81.9	21.2	0.037[d]	727	86.5	20.2	0.220[d]	727	75.3	19.8	0.035[d]
C.D. No	374	68.1	22.3		375	84.1	20.8		374	86.8	22.2		374	77.7	19.1	
Mam. Yes	511	61.5	21.8	0.012[b]	513	79.4	22.1	0.041[d]	512	84.6	21.5	0.324[d]	511	72.4	21.8	0.059[d]
Mam. No	202	66.1	21.3		203	83.13	20.3		200	86.2	21.4		202	76.1	18.7	
Citol. Yes	441	60.4	20.3	0.004[d]	442	78.80	21.7	0.029[d]	440	84.6	20.8	0.430[d]	441	71.7	19.8	0.006[d]
Citol. No	228	64.6	23.7		230	82.0	21.7		228	84.4	23.6		228	74.7	21.4	
Vacina Yes	307	60.8	23.3	<0.0001[d]	310	77.0	23.2	<0.0001[d]	307	80.5	26.0	<0.0001[d]	307	71.1	22.2	<0.0001[d]
Vacina No	866	67.6	20.6		873	84.5	19.6		866	88.5	18.4		865	77.4	18.2	
CTA – Yes	889	65.5	22.1	0.955[d]	897	82.2	21.1	0.638[d]	890	85.5	21.6	0.019[d]	888	75.7	20.0	0.491[d]
CTA – No	282	66.5	19.3		282	83.2	20.0		281	89.5	18.1		282	75.7	18.4	
Coles. – Yes	671	61.9	21.1	<0.0001[d]	679	79.8	21.1	<0.0001[d]	672	83.6	22.1	<0.0001[d]	670	73.2	20.1	<0.0001[d]
Coles. – No	484	70.9	20.5		484	86.4	19.3		483	90.5	18.3		484	79.1	18.0	

M: mean; SD: standard deviation; r: Pearson's correlation; perception of general health: M.B.: very good; B.: good; R.: reasonable; M.M.M: poor or very poor; a) waist circumference; meals per day: < 3 Ref.: fewer than three; 3 to 5 meals; 6 meals; Years smoking: Nº of years smoking; Alc. Yes: Alcohol consumption; Alc. No: doesn't drink; Years smoking: Nº of years smoking; Physical activity: A.F. Yes (Does physical activity); A.F. No (doesn't do physical activity); a) hours of sleep; Vis.M.: visited doctor in last 3 months; T.P.-CG: type of consultation (General Practitioner); T.P.-Esp: type of consultation (specialty); C.M.R.: Took prescription medicine in last two weeks; C.M.N.R.: took non-prescription medicine in last two weeks; C.D: Dentist consultation, stomatologist..; C.Db) If consulted a dentist, stomatologist, in last 12 months; Mam.: mammography: Cito: Cytology; Vaccine: Flu vaccination; CTA: control blood pressure; Coles: Control cholesterol
Tests: [a] F Brown-Forsythe; [b] t-Student; [c] Kruskal-Wallis; [d] Mann-Whitney; [e] Pearson's Linear Coefficient of Correlation.

Table 4. Relation between "Health Status and Quality of Life" in relation with clinical features. County of Coimbra, Portugal, 2011-2012.

| | | Physical dimension | | | | | | | | | | | | | | | |
| | | Physical function | | | | Physical performance | | | | Pain | | | | General Health | | | |
	n	n	M	SD	p	n	M	SD	p	n	M	SD	p	n	M	SD	p
Aus. CD		737	90.1	15.4	<0.0001[b]	742	90.0	17.1	<0.0001[b]	743	77.9	20.9	<0.0001[b]	740	67.1	14.7	<0.0001[b]
Pres. CD		460	75.5	24.5		462	74.8	26.4		468	58.2	24.0		465	53.3	19.5	
1 to 2 CD		330	81.9	20.4	<0.0001[d]	330	80.8	22.6	<0.0001[d]	332	64.1	22.8	<0.0001[c]	332	57.7	17.4	<0.0001[c]
3 to 4 CD		87	63.6	26.6		89	66.2	28.7		91	47.9	21.1		89	48.0	20.6	
≥ 5 CD		43	50.2	24.2		43	46.1	25.0		45	34.9	16.9		44	31.6	14.7	
1. Yes	51	49	60.8	25.7	<0.0001[b]	50	62.6	29.8	<0.0001[b]	51	50.4	23.8	<0.0001[a]	50	43.7	18.7	<0.0001[a]
No	1,163	1,148	85.5	19.8		1,154	85.0	21.6		1,160	71.1	23.8		1,155	62.6	17.5	
2. Yes	24	22	65.2	30.2	0.001[b]	23	72.3	24.6	<0.0001[b]	24	57.5	23.4	0.009[a]	24	53.8	22.5	0.093[a]
No	1,190	1,175	84.9	20.3		1,181	84.3	22.3		1,187	70.5	24.1		1,181	61.9	17.9	
3. Yes	188	180	70.3	25.8	<0.0001[b]	182	70.3	27.3	<0.0001[b]	188	56.2	23.4	<0.0001[a]	185	50.0	19.0	<0.0001[a]
No	1,026	1,017	87.0	18.5		1,022	86.6	20.5		1,023	72.9	23.4		1,020	63.9	16.9	
4. Yes	33	32	59.2	29.0	<0.0001[b]	32	55.9	28.6	<0.0001[b]	33	36.8	19.5	<0.0001[a]	32	38.4	21.9	<0.0001[a]
No	1,181	1,165	85.2	19.9		1,172	84.9	21.7		1,178	71.2	23.6		1,173	62.4	17.4	
5. Yes	136	131	62.8	28.2	<0.0001[b]	133	61.9	29.5	<0.0001[b]	136	45.0	21.6	<0.0001[a]	134	44.2	21.5	<0.0001[a]
No	1,078	1,066	87.2	17.8		1,071	86.9	19.7		1,075	73.5	22.5		1,071	64.0	16.2	
6. Yes	43	41	59.4	25.8	<0.0001[b]	41	60.1	28.7	0.023[b]	43	42.9	20.8	<0.0001[b]	42	37.3	19.1	<0.0001[a]
No	1,171	1,156	85.4	19.9		1,163	85.0	21.7		1,163	71.3	23.7		1,163	62.7	17.3	
7. Yes	10	9	64.4	26.5	0.006[b]	9	70.1	26.5	0.001[b]	10	58.0	16.4	0.066[b]	9	51.6	23.9	0.087[a]
No	1,204	1,188	84.7	20.6		1,195	84.2	22.4		1,021	70.4	24.2		1,196	61.8	17.9	
8. Yes	30	29	75.2	20.8	0.002[b]	30	70.0	27.1	0.002[b]	30	54.0	24.6	<0.0001[a]	30	50.1	17.0	<0.0001[a]
No	1,184	1,168	84.7	20.6		1,174	84.5	22.2		1,181	70.7	23.9		1,175	62.1	17.9	
9. Yes	44	44	74.1	25.6	0.002[b]	44	73.7	27.0	0.001[b]	44	58.1	24.7	0.001[b]	44	49.8	18.2	<0.0001[a]
No	1,170	1,153	84.9	20.4		1,160	84.5	22.1		1,167	70.7	23.9		1,161	62.2	17.8	
10. Yes	6	6	54.2	31.5	0.014[b]	6	33.3	34.8	<0.0001[b]	6	35.0	16.2	<0.0001[a]	6	28.3	12.5	<0.0001[a]
No	1,208	1,191	84.7	20.5		1,198	84.4	22.1		1,205	70.5	24.0		1,199	61.9	17.8	
11. Yes	16	16	49.4	21.1	<0.0001[b]	16	47.3	25.7	0.003[b]	16	32.5	18.5	<0.0001[a]	16	33.9	19.7	<0.0001[a]
No	1,198	1,181	85.0	20.2		1,188	84.6	21.9		1,195	70.8	23.8		1,189	62.1	17.7	
12. Yes	3	3	41.7	10.4	0.007[b]	3	22.9	25.3	<0.0001[b]	3	42.7	35.8	0.120[b]	3	40.7	31.0	0.174[b]
No	1,211	1,194	84.6	20.6		1,201	84.3	22.2		1,208	70.3	24.1		1,202	61.8	17.9	

Continue

Continuation

	n	n	Mean	SD	p	n	Mean	SD	p	n	Mean	SD	p	n	Mean	SD	p
13. Yes	13	12	54.2	24.2	< 0.0001[b]	13	52.6	22.4	0.013[b]	13	45.3	25.0	< 0.0001[a]	13	33.6	16.2	< 0.0001[a]
No	1,201	1,185	84.8	20.4		1,192	84.4	22.2		1,198	70.5	23.9		1,192	62.1	17.8	
14. Yes	11	10	56.5	27.9	0.001[b]	10	60.6	31.3	< 0.0001[b]	11	42.3	11.5	< 0.0001[b]	10	47.4	13.6	0.011[a]
No	1,203	1,187	84.7	20.4		1,194	84.3	22.2		1,200	70.5	24.1		1,195	61.9	17.9	
15. Yes	34	34	68.5	28.8	< 0.0001[b]	34	69.5	28.7	< 0.0001[b]	34	52.9	24.5	< 0.0001[a]	34	55.0	20.5	0.025[a]
No	1,180	1,163	85.0	20.2		1,170	84.5	22.1		1,177	70.8	23.9		1,171	62.0	17.9	
16. Yes	107	104	75.3	22.7	< 0.0001[b]	105	67.7	26.1	0.016[b]	107	48.7	22.1	< 0.0001[b]	106	47.7	20.6	< 0.0001[a]
No	1,107	1,093	85.4	20.3		1,099	85.7	21.4		1,104	72.4	23.3		1,099	63.1	17.1	
17. Yes	8	8	47.5	31.6	0.001[b]	8	57.8	35.2	< 0.0001[b]	8	52.3	23.7	0.034[a]	8	53.9	22.0	0.213[a]
No	1,206	1,189	84.8	20.4		1,196	84.3	22.2		1,203	70.4	24.1		1,197	61.8	17.9	
18. No	33	33	59.1	30.4	< 0.0001[b]	33	60.6	33.2	0.008	33	52.2	23.4	< 0.0001[b]	33	42.2	20.9	< 0.0001[a]
Yes	1,181	1,164	85.2	19.9		1,171	84.8	21.7		1,178	70.8	23.9		1,172	62.3	17.6	
19. No	94	94	78.5	23.0	< 0.0001[b]	92	76.8	27.3	< 0.0001[b]	94	60.6	25.9	< 0.0001[b]	93	56.5	20.9	0.012[a]
Yes	1,120	1,105	85.0	20.4		1,112	84.7	21.9		1,117	71.1	23.8		1,112	62.2	17.6	
20. No	66	66	75.6	22.0	< 0.0001[b]	66	76.5	22.8	0.009[b]	66	58.2	24.4	< 0.0001[a]	66	50.4	20.4	< 0.0001[a]
Yes	1,148	1,131	85.0	20.5		1,138	84.6	22.3		1,145	71.0	23.9		1,139	62.4	17.6	
Mental dimension																	
Aus. CD	738	738	71.5	19.2	< 0.0001[b]	744	86.7	17.9	< 0.0001[b]	742	90.1	17.4	< 0.0001[b]	738	80.3	16.4	< 0.0001[b]
Pres. CD	464	464	56.4	21.9		468	75.3	23.4		460	80.1	24.7		463	68.3	21.9	
1 to 2 CD	330	330	60.7	21.0	< 0.0001[c]	332	78.3	22.0	< 0.0001[c]	328	83.9	22.4	< 0.0001[d]	330	71.8	20.8	< 0.0001[c]
3 to 4 CD	89	89	49.5	19.9		91	71.8	23.4		89	75.3	25.9		88	63.2	21.8	
≥ 5 CD	45	45	38.6	20.1		45	59.7	26.1		43	61.1	27.6		45	52.8	23.0	
1. Yes	51	49	51.0	22.8	< 0.0001[a]	51	72.6	23.9	0.001[b]	49	73.3	28.8	< 0.0001[b]	49	65.8	23.7	0.002[b]
No	1,163	1,153	66.3	21.3		1,161	82.7	20.7		1,153	86.8	20.4		1,152	76.1	19.3	
2. Yes	24	24	63.8	17.2	0.440[b]	24	77.6	23.9	0.267[b]	23	78.3	27.0	0.092[b]	23	73.9	26.6	0.664[b]
No	1,190	1,178	65.7	21.6		1,188	82.4	20.9		1,179	86.4	20.9		1,178	75.7	19.5	
3. Yes	188	184	53.6	21.0	< 0.0001[a]	188	74.7	23.1	< 0.0001[b]	181	80.3	24.1	< 0.0001[b]	183	67.4	20.6	< 0.0001[a]
No	1,026	1,018	67.9	20.9		1,024	83.7	20.2		1,021	87.3	20.2		1,018	77.1	19.1	
4. Yes	33	33	42.1	25.6	< 0.0001[a]	33	63.3	28.8	< 0.0001[a]	32	66.7	28.2	< 0.0001[b]	33	56.2	23.8	< 0.0001[a]
No	1,181	1,169	66.3	21.1		1,179	82.8	20.4		1,170	86.8	20.5		1,168	76.2	19.2	
5. Yes	136	135	48.3	22.6	< 0.0001[a]	136	69.6	24.7	< 0.0001[b]	133	71.8	27.1	< 0.0001[b]	134	61.5	23.4	< 0.0001[a]
No	1,078	1,067	67.9	20.4		1,076	83.9	19.9		1,069	88.1	19.4		1,067	77.4	18.0	

Continuation

#		n	n	M	SD	p	n	M	SD	p	n	M	SD	p	n	M	SD	p
6.	Yes	43	43	42.8	19.0	<0.0001[a]	43	68.0	28.1	<0.0001[b]	41	74.4	25.4	<0.0001[b]	43	58.9	22.3	<0.0001[a]
	No	1,171	1,159	66.5	21.2		1,169	82.8	20.5		1,161	86.7	20.7		1,158	76.3	19.2	
7.	Yes	10	9	57.8	21.2	0.271[a]	10	65.0	26.2	0.021[b]	9	80.6	17.2	0.148[b]	9	64.4	24.5	0.085[a]
	No	1,204	1,193	65.7	21.6		1,202	82.4	20.8		1,193	86.3	21.0		1,192	75.7	19.6	
8.	Yes	30	30	55.7	21.0	0.010[a]	30	70.0	24.3	0.002[b]	30	81.7	24.9	0.244[b]	30	67.5	21.6	0.021[a]
	No	1,184	1,172	65.9	21.5		1,182	82.6	20.8		1,172	86.4	20.9		1,171	75.9	19.5	
9.	Yes	44	44	55.6	20.8	0.002[a]	44	78.1	20.7	0.095[b]	44	75.8	28.1	0.003[b]	44	69.3	23.0	0.049[b]
	No	1,170	1,158	66.1	21.5		1,168	82.4	20.9		1,158	86.7	20.6		1,157	75.9	19.4	
10.	Yes	6	6	28.3	18.9	<0.0001[a]	6	70.8	23.3	0.110[b]	6	51.4	45.8	0.033[b]	6	37.7	15.9	<0.0001[a]
	No	1,208	1,196	65.9	21.4		1,206	82.3	20.9		1,196	86.5	20.7		1,195	75.8	19.5	
11.	Yes	16	16	37.2	19.6	<0.0001[a]	16	50.0	24.6	<0.0001[b]	16	52.6	25.8	<0.0001[b]	16	39.0	23.1	<0.0001[a]
	No	1,198	1,186	66.1	21.3		1,196	82.7	20.6		1,186	86.7	20.6		1,185	76.2	19.1	
12.	Yes	3	3	28.3	22.6	0.017[a]	3	62.5	33.1	0.149[b]	3	22.2	31.6	0.002[b]	3	41.3	28.4	0.029[b]
	No	1,211	1,199	65.8	21.5		1,209	82.3	20.9		1,199	86.4	20.7		1,198	75.7	19.5	
13.	Yes	13	13	51.9	17.4	0.021[a]	13	71.2	26.7	0.054[a]	12	69.4	29.2	0.004[b]	13	61.2	23.9	0.008[a]
	No	1,201	1,189	65.8	21.6		1,199	82.4	20.9		1,190	86.4	20.9		1,188	75.8	19.5	
14.	Yes	11	10	39.0	11.7	<0.0001[a]	11	61.4	18.1	0.001[a]	10	74.2	27.1	0.098[b]	10	58.2	19.9	0.005[a]
	No	1,203	1,192	65.9	21.5		1,201	82.5	20.9		1,192	86.4	20.9		1,191	75.8	19.6	
15.	Yes	34	34	52.5	21.4	<0.0001[a]	34	71.7	22.5	0.002[b]	34	74.8	26.2	0.002[b]	34	64.3	22.7	0.001[a]
	No	1,180	1,168	66.1	21.4		1,178	82.6	20.8		1,168	86.6	20.8		1,167	76.0	19.4	
16.	Yes	107	107	46.4	19.8	<0.0001[a]	107	61.8	24.9	<0.0001[b]	105	68.3	25.2	<0.0001[b]	107	55.2	22.0	<0.0001[a]
	No	1,107	1,095	67.6	20.8		1,105	84.3	19.4		1,097	88.0	19.7		1,094	77.7	18.2	
17.	Yes	8	8	60.0	20.4	0.456[a]	8	71.9	25.7	0.158[a]	8	69.8	31.5	0.026[a]	8	77.5	15.6	0.789[a]
	No	1,206	1,194	65.7	21.6		1,204	82.4	20.9		1,194	86.4	20.9		1,193	75.6	19.6	
18.	No	1,181	1,169	66.1	21.3	<0.0001[a]	1,179	82.4	20.9	0.108[b]	1,169	86.6	20.6	0.021[b]	1,168	76.0	19.4	0.001[a]
	Yes	33	33	49.4	25.9		33	76.9	22.6		33	73.7	30.8		33	63.9	23.4	
19.	No	1,120	1,108	66.1	21.4	0.016[b]	1,118	82.7	20.6	0.016[b]	1,110	86.4	20.9	0.217[b]	1,107	76.0	19.2	0.134[b]
	Yes	94	94	60.2	22.7		94	77.1	23.6		92	84.2	22.5		94	71.5	23.4	
20.	No	1,148	1,136	66.2	21.5	<0.0001[a]	1,146	82.7	20.6	0.010[b]	1,137	86.7	20.7	0.011[b]	1,135	76.1	19.4	0.001[b]
	Yes	66	66	56.0	20.5		66	75.0	24.9		65	79.7	24.6		66	67.8	21.4	

M: Mean; SD: standard deviation; Pres-CD: chronic disease; Aus-CD: chronic disease; No-CD: No chronic disease; CD: chronic disease

Chronic disease: 1. Diabetes; 2. Asthma; 3. High Blood Pressure; 4. Chronic pain; 5. Rheumatic disease, Rheumatoid Arthritis and Musculoskeletal Diseases; 6. Osteoporosis; 7. Glaucoma; 8. Tumor Malignant/Cancer; 9. Kidney stones; 10. Kidney deficiency; 11. Chronic anxiety; 12. Chronic injury; 13. Chronic Bronchitis, Emphysema, DPOC; 14. Stroke; 15. Obesity; 16. Depression; 17. Myocardial infarction; 18. Other heart disease; 19. Allergies and rhinitis; 20. Other chronic disease.

Tests: [a] t-Student; [b] Mann-Whitney; [c] ANOVA one factor; [d] Kruskal-Wallis

Table 5. Relationship between "state of health and quality of life" and indices of locus of control, health attitudes and health behavior questionnaire and rate of quality of life of the inhabitants. County of Coimbra, Portugal, 2011-2012.

Indices	Dimensions		Physical function	Physical performance	Pain	General Health	vitality	Social function	Emotional performance	Mental health
SF-36	Physical function	R	1	0.675[a]	0.585[a]	0.585[a]	0.539[a]	0.471[a]	0.519[a]	0.398[a]
		N		1,195	1,195	1,194	1,194	1,196	1,194	1,194
	Physical performance	R		1	0.584[a]	0.591[a]	0.587[a]	0.546[a]	0.731[a]	0.465[a]
		N			1,201	1,200	1,198	1,202	1,202	1,197
	Pain	R			1	0.610[a]	0.670[a]	0.585[a]	0.500[a]	0.553[a]
		N				1,204	1,201	1,211	1,199	1,200
	General health	R				1	0.607[a]	0.520[a]	0.474[a]	0.550[a]
		N					1,200	1,205	1,198	1,199
	Vitality	R					1	0.638[a]	0.555[a]	0.733[a]
		N						1,202	1,197	1,201
	Social function	R						1	0.605[a]	0.675[a]
		N							1,200	1,201
	Emotional performance	R							1	0.574[a]
		N								1,196
	Mental health	R								1
		N								
Locus of Control and Health	Locus of control	R	0.103[b]	0.072[c]	0.040	0.143[a]	0.019	0.013	0.035	0.038
		N	1,193	1,200	1,207	1,201	1,197	1,207	1,198	1,196
	Powerful others	R	-0.065[c]	-0.067[c]	-0.083[b]	-0.146[a]	-0.084[b]	-0.064[c]	-0.093[b]	-0.092[b]
		N	1,194	1,201	1,208	1,202	1,199	1,209	1,199	1,198
Health Attitudes and Behaviors Questionnaire (QACS)	Physical activity	R	0.151[a]	0.077[c]	0.135[a]	0.143[a]	0.130[a]	0.085[b]	0.053	0.113[a]
		N	1,067	1,074	1,082	1,075	1,072	1,082	1,072	1,071
	Diet	R	0.059	0.063[c]	0.146[a]	0.084[b]	0.210[a]	0.161[a]	0.111[a]	0.193[a]
		N	1,055	1,062	1,069	1,063	1,060	1,069	1,060	1,059
	Self-care	R	-0.011	0.028	0.017	0.026	0.114[a]	0.116[a]	0.054	0.119[a]
		N	986	992	997	993	989	997	991	988
	Motor safety	R	0.060	0.079[c]	0.065[c]	0.039	0.097[b]	0.104[b]	0.100[b]	0.119[a]
		N	1,026	1,032	1,036	1,032	1,029	1,037	1,030	1,028
	Drug or substance use	R	-0.038	-0.001	0.022	-0.012	0.044	0.017	-0.012	0.106[a]
		N	1,040	1,046	1,053	1,047	1,044	1,053	1,044	1,043
Quality of life index	Global index	R	0.452[a]	0.483[a]	0.499[a]	0.536[a]	0.557[a]	0.584[a]	0.462[a]	0.578[a]
		N	1,184	1,191	1,198	1,192	1,189	1,199	1,189	1,188
	Health and functioning	R	0.571[a]	0.576[a]	0.593[a]	0.634[a]	0.621[a]	0.616[a]	0.502[a]	0.585[a]
		N	1,184	1,191	1,198	1,192	1,189	1,199	1,189	1,188
	Social and economic	R	0.289[a]	0.293[a]	0.305[a]	0.354[a]	0.360[a]	0.387[a]	0.281[a]	0.382[a]
		N	1,178	1,185	1,191	1,186	1,183	1,192	1,183	1,182
	Spiritual and psychological	R	0.230[a]	0.294[a]	0.320[a]	0.332[a]	0.400[a]	0.464[a]	0.354[a]	0.490[a]
		N	1,178	1,185	1,191	1,186	1,183	1,192	1,183	1,182
	Family	R	0.322[a]	0.365[a]	0.356[a]	0.370[a]	0.425[a]	0.463[a]	0.374[a]	0.486[a]
		N	1,179	1,186	1,192	1,187	1,184	1,193	1,184	1,183

r: Coefficient of Correlation; Test: Pearson's Linear Coefficient of Correlation.
[a] $p < 0.0001$
[b] $p < 0.01$
[c] $p \leq 0.05$

In the inhabitants studied, the perception of HRQL was also negatively influenced by the conjugal situation and area of residence,[7] by characteristics of the residence and type of ownership, as well as the socioeconomic conditions and work status.[2,8,25,b]

Extrinsic determinants gained more importance and weight in characterizing and understanding the health profile of a population. HRQL deteriorates in individuals who are outside of the "norm" (overweight/obese, sedentary, with a poor diet, smokers, type of alcohol intake, fewer hours of sleep, among others).[2,18,19,23]

Those with worse HRQL believe that it does not depend solely upon themselves (locus of control), as has been shown in other studies,[9,12,25] and therefore seek health care more frequently.[8,10] Suffering from chronic disease and its frequency suggest a negative impact on HRQL.[1,22]

Individuals who have worse results for physical health also tend to have worse results for mental health.[8]

However, the presence of better habits and health related behaviors and more satisfaction with the various areas of life promoted better HRQL indices in our population.

The limitations of the study concerned weight, height and presence of chronic disease, time spent doing exercise/day, identifying and quantifying food intake, as these were self-reported. The investigation was limited to generalizing the results based on cross-sectional data.

These indicators call for pertinent "reflections" on public health policies and the performance of different health care professionals to promote/develop new strategies and decision making instruments and actions to alter the impact of risk factors on the population's health. A step has been taken towards creating a new study in the definition/prediction of health profiled in the adult population in the present and how these profiles may be grounded in determinants for the future (adolescence).

REFERENCES

1. Aranha LLM, Mirón Canelo JA, Alonso Sardón M, Del Pino Montes J, Sáenz González MC. Qualidade de vida relacionada à saúde em espanholas com osteoporose. *Rev Saude Publica*. 2006;40(2):298-303. DOI:10.1590/S0034-89102006000200016

2. Burkert NT, Freidl W, Muckenhuber J, Stronegger WJ, Rasky E. Self-perceived health, quality of life, and health-related behavior in obesity: is social status a mediator? *Wien Klin Wochenschr*. 2012;124(7-8):271-5. DOI:10.1007/s00508-012-0160-y

3. Ferrans CE, Powers MJ. Psychometric assessment of the Quality of Life Index. *Res Nurs Health*. 1992;15(1):29-38.

4. Ferreira PL. Criação da versão Portuguesa do MOS SF-36. Parte I - Adaptação cultural e linguística. *Acta Med Port*. 2000;13(1-2):55-66.

5. Ferreira PL. Criação da versão Portuguesa do MOS SF-36. Parte II - Testes de validação. *Acta Med Port*. 2000;13(3):119-27.

6. Ferreira PL, Santana P. Percepção de estado de saúde e de qualidade de vida da população activa: contributo para a definição de normas portuguesas. *Rev Port Saude Publica*. 2003;21(2):15-30.

7. Ferreira PL, Ferreira LN. A medição de preferências em saúde na população portuguesa. *Rev Port Saude Publica*. 2006;24(2):5-14.

8. Fleck MPA, Lima AFBS, Louzada S, Schestasky G, Henriques A, Borges V, et al. Associação entre sintomas depressivos e funcionamento social em cuidados primários à saúde. *Rev Saude Publica*. 2002;36(4):431-8. DOI:10.1590/S0034-89102002000400008

9. Fuscaldi FS, Balsanelli ACS, Grossi SAA. Lócus de controle em saúde e autoestima em portadores de diabetes mellitus tipo 2. *Rev Esc Enferm. USP*. 2011;45(4):855-61. DOI:10.1590/S0080-62342011000400009

10. Henshaw EJ, Freedman-Doan CR. Conceptualizing mental health care utilization using the health belief model. *Clin Psychol (New York)*. 2009;16(4):420-39. DOI:10.1111/j.1468-2850.2009.01181.x

11. Hespanhol AP, Couto L, Martins C. A medicina preventiva. *Rev Port Clin Geral*. 2008;24(1):49-64.

12. Greene CA, Murdock KK. Multidimensional control beliefs, socioeconomic status, and health. *Am J Healt Behav*. 2013;37(2):227-37. DOI:10.5993/AJHB.37.2.10

13. Janssen I, Katzmarzyk P, Ross R. Body mass index, waist circumference, and health risk: evidence in support of current National Institutes of Health guidelines. *Arch Intern Med*. 2002;162(18):2074-9. DOI:10.1001/archinte.162.18.2074

14. Kimura M, Silva JV. Índice de qualidade de vida de Ferrans e Powers. *Rev Esc Enferm USP*. 2009;43(N. Espec):1096-102. DOI:10.1590/S0080-62342009000500014

15. Marteau TM, Hollands GJ, Fletcher PC. Changing human behavior to prevent disease: the importance of targeting automatic processes. *Science*. 2012;337(6101):1492-5. DOI:10.1126/science.1226918

16. Martins GA. Estatística geral e aplicada. São Paulo: Atlas; 2006.

17. Mausner JS, Kramer S. Introdução à epidemiologia. 4.ed. Lisboa: Fundação Calouste Gulbenkian; 2007.

18. Mota J, Ribeiro JL, Carvalho J, Matos MG. Atividade física e qualidade de vida associada à saúde em idosos participantes e não participantes em programas regulares de atividade física. *Rev Bras Educ Fis Esp*. 2006;20(3):219-25.

19. Nies MA, Kershaw TC. Psychosocial and environmental influences on physical activity and health outcomes in sedentary women. *J Nurs Scholarsh*. 2002;34(3):243-9. DOI:10.1111/j.1547-5069.2002.00243.x

20. Ribeiro JLP. Reconstrução de uma Escala de Locus-de-Controlo de Saúde. *Psiquiat Clin*. 1994;15(4):207-14.

21. Ribeiro JLP. Avaliação das intenções comportamentais relacionadas com a promoção e protecção da saúde e com a prevenção das doenças. *Ana Psicol*. 2004;22(2):387-97.

22. Santos ECM, França Junior I, Lopes F. Qualidade de vida de pessoas vivendo com HIV/Aids em São Paulo. *Rev Saude Publica*. 2007;41(Supl. 2):64-71. DOI:10.1590/S0034-89102007000900011

23. Santos R, Pereira J. O peso da obesidade: avaliação da qualidade de vida relacionada com a saúde em utentes de farmácias. *Rev Port Saude Publica*. 2008;26(1):25-37.

24. Tabachnick B, Fidell L. Using multivariate statistics. 5.ed. Boston: Pearson International Edition; 2007.

25. Timm LA, Argimon IIL, Wend GW. Correlação entre domínios de qualidade de vida e lócus de controle da saúde em idosos residentes na comunidade. *Sci Med*. 2011;21(1):9-13.