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REVISTA IBERO-AMERICANA DE SALUD Y ENVEJECIMIENTO

HEALTH STATUS VS QUALITY OF LIFE

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ABSTRACT

Goal: To understand if the health status affects the quality of life of employees and to identify which variables influence the quality of life of the employees of the institution.

Methods: A descriptive-correlational study, quantitative. Sociodemographic questionnaire and the Portuguese version of MOS SF-36. Sample of teaching staff and non-teaching staff who agreed to participate in the study. Data processing made through the Software Statistical Package for Social Sciences version 20. Approved by the Commission of Ethics and the Director of the institution; informed consent given by the participants. **Results:** Statistically significant differences between the quality of life and health status in the Physical Component. As the levels of the Mental Component increase also increase the levels of self-perception of a better health condition. The higher the levels of each component, the higher the self-perception of the health condition of the participants. The variables that can influence the health status and quality of life of the participants are the presence of chronic conditions, academic qualifications and marital status. **Conclusions:** The importance of health promotion, disease prevention, was highlighted in order to obtain gains in quality of life, health gains, adding not only years to life, but also life to years. This is because health problems are mostly related to bad habits and harmful lifestyles.

Descriptors: health status; quality of life; consciousness.

INTRODUCTION

The perception of health state (often also designated as self-assessment of health state or self-appraisal of health state), while subjective indicator, complements more objective health indicators such as mortality and morbidity. Thus, the perception of health state is recognized as of great importance as an indicator of the state of people's health because it measures the subjective perception of physical and mental state, is independent of medical interpretations of symptoms, and is also an important predictor of mortality as well as of use of health services^(1,2,3,4).

Knowing the state of health of a given population is fundamental to better planning in health, not only due to its role as a determinant of health, but also due to its relation with the adoption of behaviors that promote health. The World Health Organization has also recommended this indicator for surveilling the health of populations.

In the health care context, it is usually employed the term health-related quality of life/ subjective state of health, instead of using just the concept of quality of life. Interest in the topic quality of life in the area of health relates essentially to the need to assess health care in general and with the fact that diseases are no longer considered from a simple biological perspective and are now seen from a perspective that is more holistic, integrating the individual⁽⁵⁾.

Thus, the subjective evaluation of events has now a decisive weight. Trying to be objective, we can say that quality of life is a set of individual, sociocultural, and environmental parameters that characterize the conditions in which human beings live⁽⁶⁾. Now variables as satisfaction, happiness, and well-being are considered as subjective dimensions of quality of life, in addition to the objective approach, which has indicators such as physical environment, resources, and health, which are observable and measurable⁽⁷⁾.

For health in general, well-being and quality of life assume a central position, at times isolatedly, at times as synonyms, and at other times integrated, as these are concepts still in development, allowing various approaches and interpretations. The current studies still intend to demonstrate and to contribute to the consistency of the concepts, being a necessary path in consolidation. In the last decade, interest in the subject, quality of life, has intensified, with the consequent development of multiple instruments for measurement⁽⁸⁾.

It is important to assess quality of life, with reliable instruments that enable comparisons of multiple contexts for greater understanding of the current societies, and that can be an aid in decision-making for the health and well-being of populations.

In this early millennium, we live the era of lifestyles, since the major illnesses and causes of death are primarily associated with the way we live. The answer is to change behaviors to enjoy life more, and not to avoid death.

There are various fundamental concepts involved, health, well-being, quality of life, promotion of health, habits, lifestyles, and physical activity⁽⁶⁾, that also justify the investment in research and also in standardization of criteria for analysis; however, there is still an instrumental void in relation to measuring quality of life with reliability and consensus⁽⁹⁾.

Man, due to their development, have come to gain years of life, which has led to questioning whether the quality of these additional years is positive. In recent years we ceased thinking about disease and directed the thinking to health⁽⁶⁾. The concept of the World Health Organization (WHO) in the last century (1946), declaring that health was more than absence of disease, opened a way for research that focused not only on disease, but also on the adaptive characteristics such as resilience, hope, wisdom, creativity, courage, and spirituality, enabling the development of the concept "quality of life"⁽¹⁰⁾.

The perception of health state extended the parameters beyond morbidity and mortality, expanding the concepts of well-being and quality of life⁽¹⁰⁾. Quality of life is a recent concept that encompasses and transcends the concept of health⁽¹⁰⁾, that is, although it is connected to the health state of an individual, it results from the influence of variables that go beyond the biological condition of health, in which the interaction of cognition and emotional states determine well-being. In this sense, choices and decisions in daily behavior are highly important for health and well-being⁽⁶⁾.

The way to increase the reliability and consensus is to continue to produce research and discuss the results in a reflective manner, that is, continue to deepen the knowledge to better identify relevant variables in the evaluation of quality of life.

This study aimed to understand if the health state is a prerequisite for the quality of life of employees of the São João Deus Nursing School (ESESJD) and identify which variables influence the quality of life of employees of ESESJD.

Given the importance of these issues for society and our personal interest on the subject as health professionals, we developed this study to contribute to the production of knowledge related to understanding these phenomena.

METHODS

We conducted a descriptive-correlational study of quantitative approach. Data collection used a questionnaire of sociodemographic characterization and the Portuguese version of the measuring instrument MOS SF-36, which was used to measure the perception of health state and quality of life of the Portuguese individuals. This "generic measuring instrument contains 36 items covering eight dimensions of health state and detecting both positive and negative health states"⁽¹¹⁾ and refers to both physical and mental health.

The accessible population comprised professors and other employees of ESESJD, that is, a population linked to the health area, but with different characteristics. The sample consisted of all staff of that institution who agreed to participate in the study. The data were collected in October/November of 2015.

For treatment of the data we used the Software IBM® SPSS® Statistic (Statistical Package for Social Sciences) version 20.

Data collection was carried out in accordance with the recommendations of the Declaration of Helsinki, of the World Health Organization, and of the European Community regarding experimentation involving human beings. Initially we requested an opinion to the Commission of Ethics of Health and Well-being of the University of Évora (no. 15021), which was positive for conducting the work. Then we made an individual request to the Director of ESESJD. For participation in the study, participants were asked to sign informed consent, which contained information about the study, its objectives, and scope, always ensuring the anonymity, confidentiality, and the abandonment of study at any stage, with no repercussion to those involved. After these ethical and legal procedures, data collection was performed.

In terms of the validity of the instrument used, this was ensured, as the MOS SF-36 (SF-36 V2© 1999 Quality Metric, Inc. Portuguese version © 1999 Center for Studies and Research in Health of the University of Coimbra) was culturally adapted to Portuguese and validated to be applied on the Portuguese population⁽¹¹⁾.

In this study we defined dependent variables, independent variables, and research issues, as follows:

- Research issues
 - Is health state a prerequisite for quality of life?
 - Which variables are predictors for quality of life in terms of health state?
- Independent variables: sex, age, marital status, education, BMI, presence of chronic disease, physical activity.
- Dependent variable: health state (physical function, physical performance, physical pain, general health, vitality, social function, emotional performance, mental health, and health change).

RESULTS

The sample consisted of 41 participants including professors and non-teaching staff. In terms of sociodemographic characterization of the sample, it consists of 80.5% females and 19.5% males aged 30–60 years, and we observed that the majority (60.9%) of the sample is aged above 50 years. The majority (73.2%) of respondents were married.

We found that most respondents have higher education (68.3%) and income higher than EUR 1,500 (56.1%). Still with regard to this indicator, we found that in general they have healthy lifestyle habits, as most respondents have no smoking habits (82.9%), practice

some physical activity (63.4%), undergo health monitoring (95.1%) about one or two times a year (68.3%), and this monitoring is conducted by family doctor (63.4%).

Finally and regarding general health indicators, we observed that most reported having no chronic diseases (68.3%); however, most presented pre-obesity BMI (56.1%).

The SF-36 scale, which enable the assessment the health state, is divided into eight dimensions that can be grouped into two Components: the Physical Component (Physical function, Physical performance, Physical pain, and Overall health); and the Mental Component (Mental health, Emotional performance, Social function, and Vitality).

Now we analyze the independent variables with the dependent variables to determine whether the respondents' health state is a prerequisite for their quality of life.

We analyzed the sociodemographic variables (age, sex, and marital status), in this group of variables we found that the Physical Component has higher values for respondents aged 46–50 years (66.50), while regarding the Mental Component respondents aged 56–60 years (52.90) are those with higher values. We also observed that the health state is self-perceived as better by those aged 36–40 years and 56–60 years (Figure 1).

Regarding sex, we found that for the Physical Component females presented higher values; however, for the Mental Component males presented higher values. In the set of the two components and considering the self-perceived health state, we observed that women reported higher health state.

Concerning marital status, we observed that the marital status divorced presented higher values for the Physical Component, while for the Mental Component the marital status married presented the higher values. In comparison we observed that the health state is self-perceived as better in respondents with the marital status married (Figure 2).

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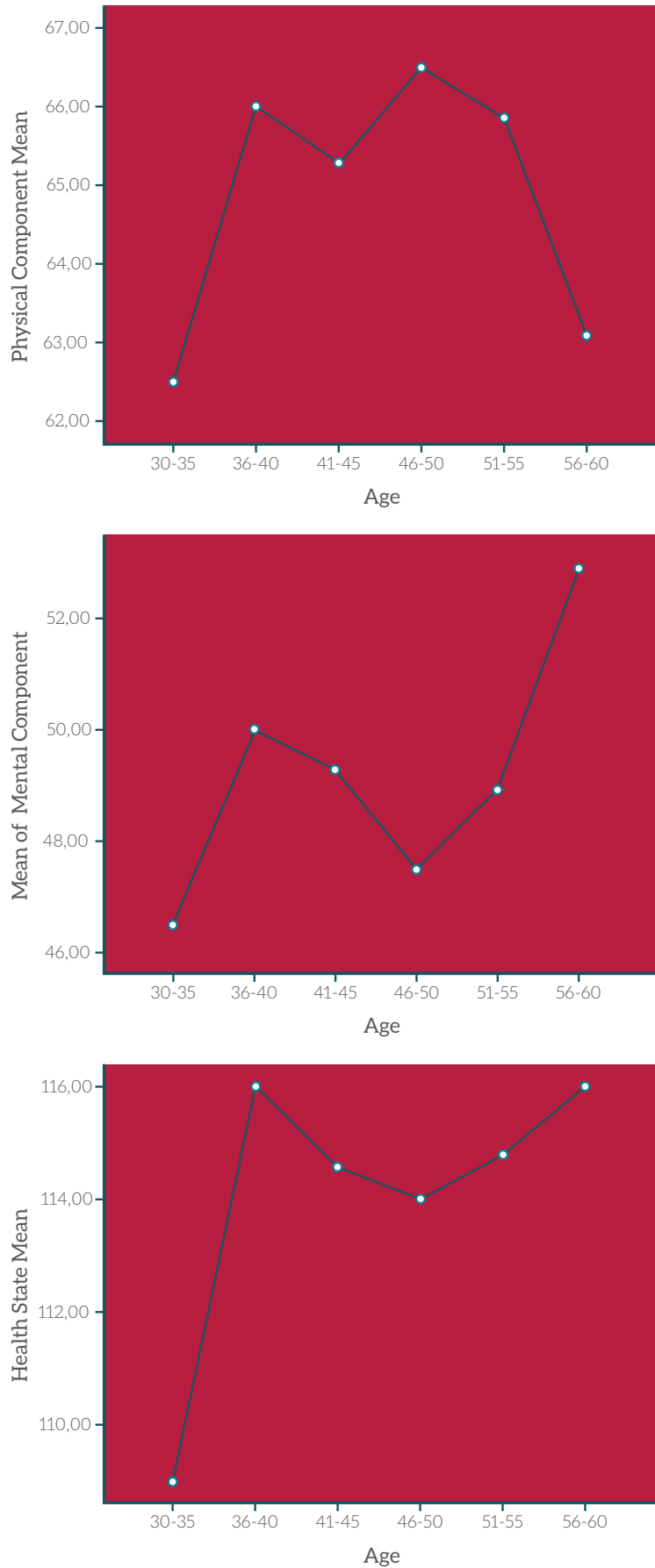


Figure 1 - Age vs. Physical Component and Mental Component vs. Health State.

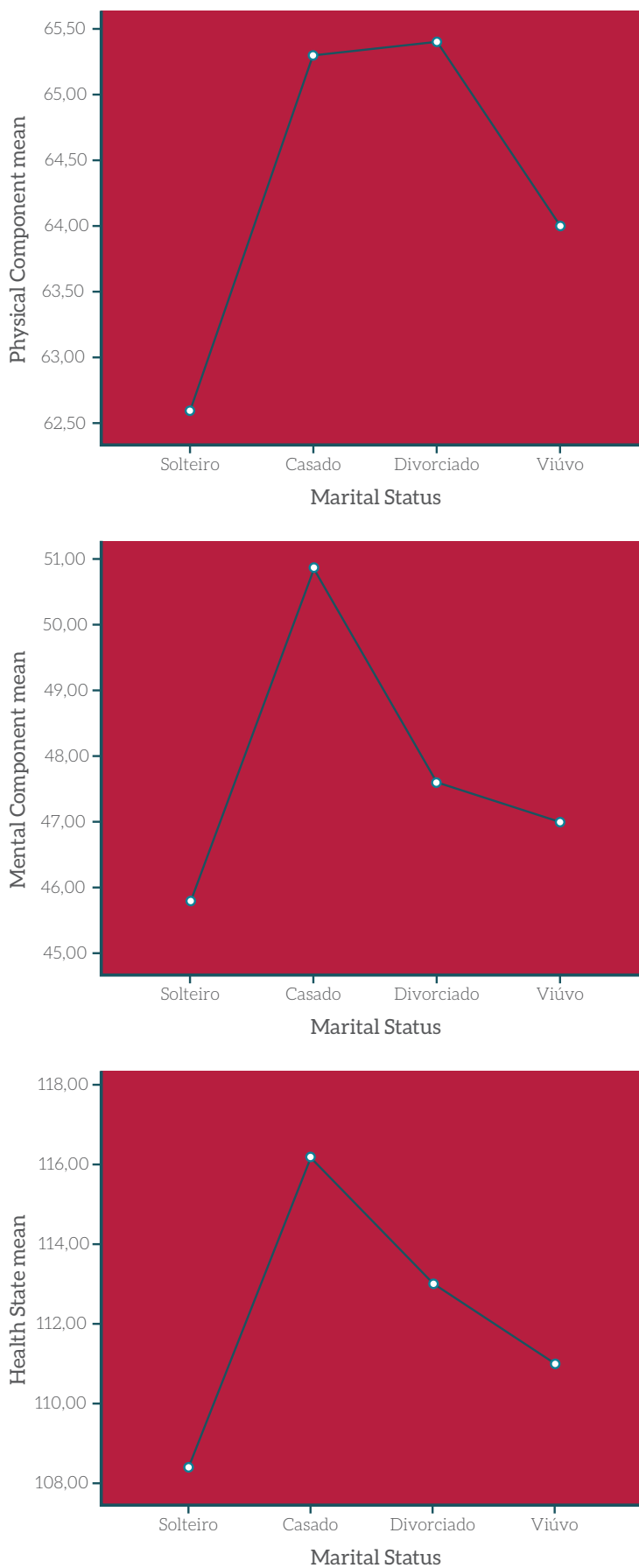


Figure 2 - Marital Status vs. Physical Component and Mental Component vs. Health State.

We also analyzed the socioeconomic variables (education and physical activity). Regarding education, we observed that for the Physical Component respondents with the 12th grade presented higher values, while for the Mental Component respondents with a teaching degree presented higher self-perception of mental health. However, regarding health state, we observed that respondents with Master’s degree presented higher self-perception of health state.

Concerning physical activity, we observed that the practice of physical activity led our respondents to present higher values in both components, as well as in the self-perception of health they presented (Table 1).

Table 1 - Physical Activity vs. Health State

Health Condition	Physical Activity	N	Mean	Std. Deviation
Physical activity	No	15	64,5333	3,96172
	Yes	26	65,1923	3,58909
	Total	41	64,9512	3,69426
Mental component	No	15	48,4000	4,71775
	Yes	26	50,5385	7,83954
	Total	41	49,7561	6,87670
Health Condition	No	15	112,9333	7,01495
	Yes	26	115,7308	8,24892
	Total	41	114,7073	7,84934

Finally we observed the overall health variables (BMI and chronic disease). Regarding the existence of chronic diseases, we found that when there are no chronic diseases in respondents the values in both components are higher, as well as in the self-perception of a higher health state (Table 2).

Table 2 – Chronic Diseases vs. Health State

Health Condition	Chronic Diseases	N	Mean	Std. Deviation
Physical activity	No	28	65,5714	2,87297
	Yes	12	63,1667	4,83986
	Total	40	64,8500	3,68330
Mental component	No	28	50,5714	7,97416
	Yes	12	48,4167	2,84312
	Total	40	49,9250	6,87764
Health Condition	No	28	116,1429	8,31649
	Yes	12	111,5833	6,14164
	Total	40	114,7750	7,93721

Concerning BMI, we observed that respondents with pre-obesity BMI (25–29.9) presented higher values for both components (Physical and Mental), so their self-perception of health state is also higher.

In summary we found that there are statistically significant differences ($p=0.046$) between quality of life and health state, with regard to the Physical Component. For the Mental component we found that as values increase, so increase the values of self-perception of a higher health state, that is, the higher the values for each of the components the higher the respondents' self-perception of health state.

In the analysis of relation between the dependent variable (health state) and the independent variables or predictors, we predict the behavior of the dependent variable (and its components) based on the independent variables, informing about the margin of error of these predictions. To this end, we used the multiple Linear regression model (MLRM)⁽¹²⁾. This model consists in a “statistical, descriptive, and inferential technique that enables the analysis of the relation between the dependent variable and a set of independent variables”⁽¹²⁾. Thus we intend to establish a predictive model for the health state vs. quality of life of respondents and of the independent variables (sex, age, marital status, education, BMI, presence of chronic disease, physical activity).

In this stage of the study we conduct the the standard linear regression analysis, for which we use all variables (Method: Enter). According to the summary of the model, the adjusted correlation coefficient ($R^2a=0.058$) we can say that 5.8% of the total variability of the health state is explained by the independent variables present in the adjusted linear regression model.

With the Durbin-Watson statistic (d) we can determine the independence of the residues, in our study we can assume that the residues are independent, that is, there is no self-correlation (dependency) of the residues, as we have the statistical value $d=2.651$ close to 2.

According to the plot of the standardized residual regression, we can say that the residues present normal distribution, since most points are more or less above the main diagonal line without substantial deviations, hence the residues are considered representative of approximately a normal distribution. The statistical variable of regression satisfies the hypothesis of normality⁽¹³⁾.

By examining the scatter chart, we can see how the residues are distributed more or less randomly around the zero and we can observe the presence of outliers. However, we can obtain more information about these outliers through the standardized residues and the student's t-tested residues, which in this case take very similar values. But it is in the student's t-tested residues that is pondered the influence of each observation in the model⁽¹³⁾. Thus, it is evident the presence of outliers, the excluded standardized residual point close to 6 and with adjusted predicted value close to 115.

Doing the exact tests for occurrence of outliers and for the assumption of normal distribution, we made the excluded residual student's t-test, in the Kolmogorov-Smirnov test whose p-value is 0.487, therefore the non-standard residues variable follows normal distribution.

To obtain the degree of multicollinearity, that is, the association between the independent variables⁽¹³⁾, and its effect on the results, we used the process in which we make comparisons through the conclusions obtained from the values of the variance inflation factor (VIF) and of the variable tolerance (T). Through VIF we made the diagnosis of multicollinearity between the independent variables. As the VIF values are less than 5 there is no multicollinearity between the variables and as the T values are mostly close to 1, we can then conclude that the collinearity between the variables is low.

To find out if the adjusted model is significant, we calculated the ANOVA of regression, which enable saying that the independent variables have no significant effect on the variation of the dependent variable. We can also say that the model is not significant, because we have associated a value of $F=1.342$ with 7 to 32 degrees of freedom, having associated a p-value=0.263.

The results obtained show that the analysis of the absolute values of the Beta standardized coefficients allow to affirm that the variable chronic diseases presents the greatest relative contributions to explain the health state. For a significance $p<0.05$, we can conclude that only the variable chronic disease affects significantly the dependent variable.

We also performed the regression using the Automatic Linear Modeling, “whose objective is the visualization and optimization of linear regression model for predictive purposes”⁽¹³⁾. The selection method was the Forward Stepwise, and classification accuracy in this model was only 12%.

The predicting variables are presented by level of importance and we observed that in this analysis model we have marital status and educational qualifications, the most important being the marital status. In the coefficients of the model (Figure 3) are illustrated the values of the coefficient, their significance, and their relative importance in relation to the model.

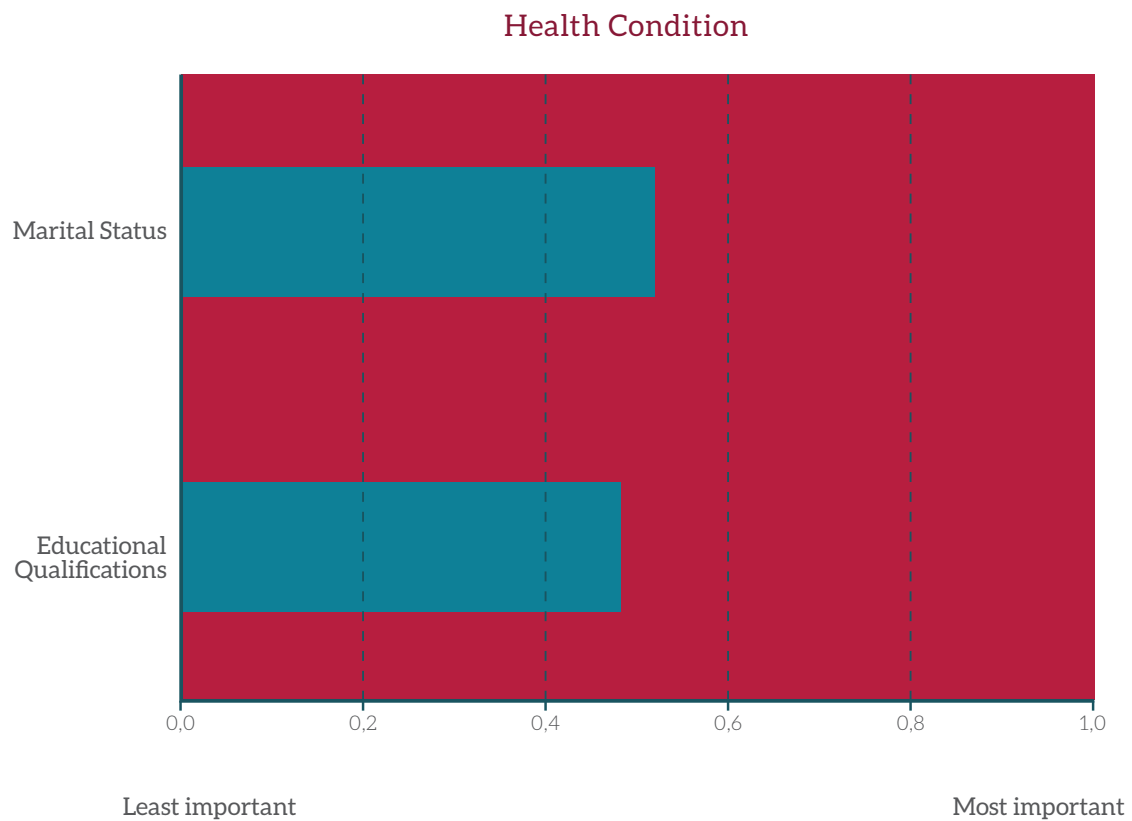


Figure 3 - Importance of the predictors.

We emphasize that the variables that can somehow influence the health state and consequently the quality of life of the respondents are the presence of chronic conditions, education, and marital status.

DISCUSSION

Determination of the individuals' health state has focused on objective methods, based on the development and implementation of measurements such as biochemical, physiological, and anatomical markers or simply employ epidemiological indicators (rates) to characterize a population. However, there is a void of instruments to measure the individual quality of life and health state based on the definition of health proposed by the World Health Organization. Despite the use of epidemiological measures of morbidity and mortality, only in the 1980s the rates for quality of life reach their highest development, when different sciences pondered contributing with their perspectives and allowed a multidimensional approach⁽⁹⁾.

The concept of quality of life dates back to several centuries; however, its use in the health area is relatively recent, since the 1990s. The term "quality of life" is increasingly used as an indicator or a result of health care. The World Health Organization uses it as the individual's perception about position in life, to take into account the sociocultural context in which this individual lives. As the indicator of health state, which despite being subjective, is also currently used by the Organization for Economic Cooperation and Development (OECD) to monitor the quality of life of the population and evaluate the economic impact of health policies on the well-being of societies.

The health-related quality of life refers to the subjective evaluation of the influence of current health state on an individual's ability to achieve and maintain a global level of functioning that allows carrying out important activities that affect well-being. The basic dimensions for measurement are: the social, physical, and cognitive functioning; mobility and personal care; and emotional well-being⁽⁹⁾.

The great difficulty in the analysis of the results is the low rate of publications in this area of knowledge, and of the few studies found these use different criteria to investigate the same, that is, quality of life and health, hence it is not possible to make comparison with accuracy, just curious references about patterns of results.

Our sample is mainly composed of individuals with healthy behavior/lifestyle, with a high percentage of health monitoring (95.1%), physical exercise (63.4%), no smoking habits (82.9%), and mostly with no chronic disease (68.3%), having in general a good self-perception of health state, which corroborates, in line with the healthy behaviors, the findings in Ireland⁽¹⁴⁾, which identify in healthy niches as former smokers, with healthy lifestyles and without excesses, reports of high levels of energy, vitality, lower levels of distress, better self-perception of health and better quality of life.

Our study does presents no particular sensitivity to functional behavior, but taking into account the regular practice of physical exercise and the direct relation found between quality of life and health, it is predictable that to find that individuals with a better functional capacity have better perception of health-related quality of life, and in line with another author who studied workers of a university institution⁽¹⁵⁾.

Our results also show that pre-obese individuals have a higher perception of health state, on the other hand, in another study, it was identified that overweight people perceived themselves as four times more affected in their quality of life compared to those with normal weight, and that the weight was the determinant that most affected students⁽⁹⁾. While comparison is not possible due to different analysis criteria, we point out the difference as a variable with the potential to influence the quality of life.

The regular practice of physical activity is associated with the absence or decrease of depressive symptoms and/or anxiety, in opposition, inactivity and sedentary lifestyle are related to risk factors for some medical conditions, including cardiovascular diseases⁽¹⁶⁾, which might explain somehow the results of our investigation, in which there is a significant percentage of individuals who practice some physical activity (63.4%) and also a significant percentage of individuals with no chronic disease (68.3%).

Our investigation showed predominance of the female sex as that which has better self-perception of health state and consequently better quality of life, situation that is opposite to that found in another study⁽⁹⁾ in which the index of quality of life was less favorable to women.

We identified as variables that can influence the health state and therefore quality of life the existence of chronic disease, education, and marital status. With regard to education level, we found that being a variable that can influence the perception of health state, in studies consulted we can observe that according to the education level the perception is different. In a study⁽¹⁷⁾, it was observed that the lower the health level, the higher the education level; however, other authors⁽¹⁸⁾ found that in elderly individuals with low education level the health state was perceived as weak. It was also observed that individuals with lower education level tend to perceive their quality of life in a more negative way than those with higher education level. On the other hand, having higher education level increases, with the exception of physical and social functions, their perception of their health state⁽¹⁹⁾.

Similarly, marital status may also have some influence on self-perception of health state of the population studied. In our study we found that the self-perception of health state was higher in respondents with the marital status married. Furthermore, in another study⁽²⁰⁾

the findings also corroborate these results, to the extent that in studying dimensions such as well-being, physical symptoms, daily life, and social life they concluded that married individuals presented better quality of life.

With regard to the variable chronic disease, we found that its absence in respondents increased their self-perception of health state and consequently of quality of life. Similarly to a study consulted⁽²¹⁾, chronic diseases interfered negatively on quality of life of individuals due to altering especially their physical capacity (67.6%), their work/study/activities/household (64.8%), and their self-esteem (53.5%). Other authors⁽²²⁾ also state that depressive symptoms and socioeconomic level can be relevant interfering factors between the presence of chronic disease and its association with quality of life.

In summary, the data demonstrate the importance of evaluation of quality of life in relation to the self-perception of health state of respondents, characterizing as a strategy that could be used in defining health policies. However, given some weaknesses in the studies consulted, concerning the instruments used and the results presented, we believe it is necessary to measure these situations, in order to facilitate the comparison of results in the various populations.

CONCLUSIONS

In a world in constant evolution, in which the social communication media and information technologies united countries and continents, turning them into a great global village and in which the reality of the Economic and Monetary Union and the participation of Portugal in the Euro zone indicate the continuation of the meeting of the economic and social convergence criteria, it is increasingly important measuring the health-related quality of life⁽²³⁾.

Measuring the health state corresponds to a description and quantification of the individual's health at a given moment. The subjective perception or self-assessment of health describes how a person perceives his or her own health⁽²⁴⁾.

The instruments for evaluation of quality of life are important to guide programs for promotion of quality of life and compare the quality of life of individuals, of the same culture or different cultures⁽²⁵⁾.

In the literature, we observed that there are several factors that can simultaneously influence the individual's perception of health state, including sex, age, marital status, education level, BMI, existence of chronic disease, and physical activity. Among the main factors

we highlight the marital status, the education and the chronic diseases, which in our study were characterized as predictors that may influence the health state and quality of life of employees of ESESJD.

The results highlight the importance of health promotion, disease prevention, in order to obtain gains in quality of life, health gains, adding not only more years to life but above all more life to years. Because health problems are mostly related to lifestyles and habits harmful to health. These benefits include direct gains related to lower use of health services and smaller expenses; and indirect gains related to better preservation of the quality of life and social functions of users.

Thus, with this study we conclude that the perception of quality of life should be considered an indicator of excellence in terms of health care service especially with regard to decision-making. Only by asking the main beneficiaries of this context it is possible to assess the quality of care, which reinforces its systematic use in the practice of health care.

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