

# Health-related quality of life of the students of the university program for older adults of the University of Burgos (PIE): Comparative study

Vanesa Baños-Martínez<sup>1a</sup>

<sup>1</sup>Faculty of Education, Department of Science Education, University of Burgos, Spain

**Abstract.** It is shown in this research the analysis of the results obtained by a group of older university students of the University of Burgos when asked for their health using the European Quality of Life-5 Dimensions (EQ-5D-5L VAS) health questionnaire developed by the EuroQol Group. The study results show, always bearing in mind the limitations of the study, that men tend to assess their health with higher score than women. It also has been found that the score of the oldest students over their own health is worse than that of the youngest. Overall, these results support the idea that education can be an important pillar for active aging, which helps to maintain away the dreaded dependence.

**Keywords:** quality of life, health-related, university students, older adults

## 1 Introduction

The study of life quality of life (QoL) in the elderly has been analysed by multiple researchers [13]. In recent times, the interest in improving the QoL of older people has increased. A highly innovative approach that has been promoted within the framework of the European Union with the construction of the European Higher Education Area. In this paper, the training of European citizenship is explicitly linked to the thesis of lifelong learning, reinforcing the cultural dimension of universities [8, 9].

From the World Health Organization's conceptualization of active aging, this is "the process of optimizing opportunities for health, participation and security to enhance quality of life as people age" [14], actions aimed at promoting attitudes and behaviours that promote intellectual concern, scientific and cultural curiosity, will allow older people to face this stage of life. From this preventive perspective, University Programs for older adults are a very effective way to be active in the psychological, physical and social areas.

Research and experience have shown that training is possible and must be done throughout life. Lifelong learning is one of the best ways to contribute to promoting active aging, enhancing personal development in all directions, facilitating spaces where

---

<sup>a</sup> Corresponding author: vbanos@ubu.es

intergenerational relationships are a daily fact, motivating older people to continue growing and ultimately improving their QoL.

The justification for this research does not come exclusively from the socio-demographic factors and the policies on active and healthy aging in which University Programs for older adults are contextualized, but we can say that the QoL is related to indicators of health, well-being and needs satisfaction [6]. It is based on the potential of the elderly to adapt to their environment and thus lead a successful aging through accommodation strategies or instrumental activities such as training in a University Program [10].

The decade of the 90's of the last century prompted the development of the concept "Quality of Life Related to Health (HRQoL)" also known as perceived health. The study of HRQoL makes it possible to evaluate the effects of health, disease and treatment on people's quality of life [3], based on the individual's own perception and considering different dimensions. The concept of HRQoL that best fits the aims of this research is the one that conceives it as the individual's ability to do things, influenced by subjective perception. Quality of life is a unique human concept that is directly related to the degree of satisfaction that has the person as to his level of happiness. It is important to focus on this concept and its relationship with lifelong learning because developed countries and continents, especially Europe are facing a new era with many elderly people whose needs are changing. If we manage to provide them tools, as education, to maintain their health that would be a success.

Older people involved in educational experiences have benefits that include not only the development of coping strategies but also the development of interest in new activities, social integration and, above all, the development of new social networks; in other words, increased quality of life and well-being [7].

So, in this paper we aimed to analyse the Health-Related Quality of Life of the students of the University Program for older adults of the University of Burgos (PIE) at the headquarters of Burgos and Aranda de Duero. Thus, the specific objectives of the study are:

- To know the degree of association, if any, between HRQoL and different sociodemographic factors.
- To describe the general health status of the students of the University Programs for older adults.

Based on these objectives, the following hypotheses are expected to be fulfilled:

- There are statistically significant differences in the dependent variable (VAS – Visual Analogue Scale) caused by the independent variable (sex).
- Older students report having more health problems.

## 2 Method

To reach the objectives, we have opted for an exploratory and empirical methodology, being aware that it adapts to a great variety of situations in different contexts and to the human complexity.

The technique used for data collection has been the EQ-5D-5L EVA Health Questionnaire (2009) of the EuroQol Group [11] as a generic and standardized instrument used to describe and assess the HRQoL of a group or population and whose development has been possible thanks to the support of the European Union. In Spain, the questionnaire was validated by Badía et al. [1] and complies with the properties of cultural adaptation, validity, reliability and sensitivity to change. On the other hand, this instrument has also been the tool that has been used to evaluate HRQoL in the National Health Survey of Spain, in its latest edition of 2011/2012. We have added to this instrument a block of questions to obtain sociodemographic data such as age, sex, level of education, etc.

The instrument itself consists of two parts: on the one hand the questionnaire that is responsible for measuring the self-perceived limitations of health and on the other, the Visual Analogue Scale (VAS). The questionnaire traces the health status of the students through 5 dimensions [5]: mobility, self-care, usual activities, pain/discomfort and anxiety/depression. Each of them has 5 levels of response: no problems, slight problems, moderate problems, serious problems and total impossibility. With this data we obtain a simple descriptive profile on health. On the other hand, students also assess their health status through the VAS that is a kind of thermometer of 20 cm. which offers a value for health status between 100 (best state of health imaginable) and 0 (worst state of health imaginable). With respect to its psychometric properties, test-retest reliability ranges from 0.86 to 0.90 [12], and its validity and sensitivity to change has been demonstrated in numerous studies [4].

The questionnaire was answered anonymously and voluntarily by 332 students in October 2014, at the beginning of the academic year 2014/2015. Of the total, 119 people study in Aranda and 213 in Burgos. The sample is representative because it gathers answers of 97.65% of the total students, which are 340 people, the statistical formulation tells us that we have worked with an error rate of 1.09% and with a confidence interval of 99%.

The data were entered by double digitizing to the EpiData software, which is used by the World Health Organization in various projects and analyses. Subsequently, the database was exported to the statistical package Stata in its version 12 through which the descriptive statistics of the variables (means, standard deviations or percentages) were calculated as well as the statistical techniques and graphs recommended for each type of variable (t tests, ANOVA or correlations).

### 3 Findings

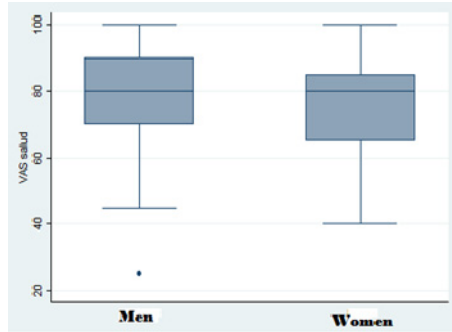
Table 1 gives a summary of the statistical relationship between the dependent and independent variables showing the p-value. From this information and using the different statistical tests the analysis of the results has been done.

**Table 1.** Contrast of hypotheses between dependent and independent variables.

Dependent variables	Independent variables							
	Place	Sex	Age	Course	Level of studies	Employment situation	Civil status	People in the household
EQ-5D-5L	0.010	0.031	0.048	-	<u>0.000</u>	<u>0.000</u>	0.012	0.018
VAS	-	0.033	-	<u>0.005</u>	0.025	<u>0.004</u>	-	-

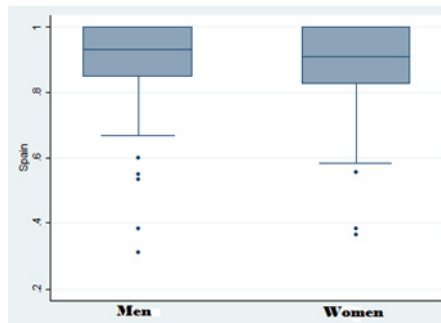
The analysis of the questionnaire EQ-5D-5L in relation to the place of registration informs us that the students at the headquarters of Burgos show a difference with the students of Aranda of 0.036, that means that their health is slightly better than the health of their colleagues from Aranda, a small city in the south of the province.

Related to sex, we found statistically similar values in the p-value of both dependent variables. As can be seen in Figure 1, it is men who have higher scores on VAS. The difference is 3,633 points out of 100 and, although the median is equal in both sexes, in women the scores are concentrated below it.



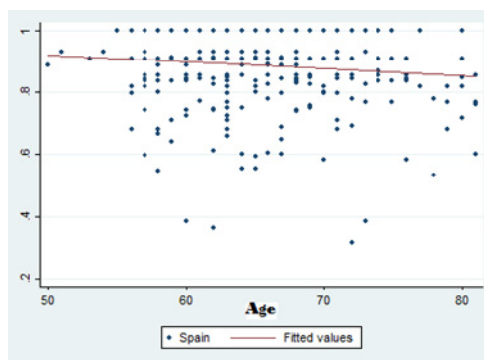
**Fig.1.** ANOVA of sex related to VAS.

On the other hand, the results of the students in the health questionnaire EQ-5D-5L also benefit men compared to women because their results are more grouped in the upper parts of the Figure (2). We conclude in this sense that sex is a variable that decisively affects the perception of health when we study the quality of life.



**Fig. 2.** ANOVA of sex related to the health questionnaire EQ-5D-5L.

The link between age and the perception of health collected in the EQ-5D-5L questionnaire is shown in Figure 3, which shows that the older the students, the lower the value offered by the health index. On the other hand, knowing that the results can vary between 1 and -0.654 we see that most of the students are in a range of high scores, higher than 0.844 and the older students are those who obtain lower values.



**Fig. 3.** Linear regression of the values of the health questionnaire EQ-5D-5L and age.

In relation to the course and the VAS we found that there is a slightly decreasing tendency that only manifests itself with the graduates. Regarding the level of studies, the analyses inform us of the existence of a relevant association with the health levels where they present an increasing tendency, the higher the formative level the better the health self-perception.

On the other hand, the association between the employment situation with both the VAS and the EQ-5D-5L questionnaire tells us that those who claim to have a better general health status are those who are active, and they are more likely to be in better physical and mental conditions than another person who, for example, is unemployed. Those who have poor health are clearly the disabled ones followed by the housewives.

To conclude, we address the variable on the number of people living in the household and we check that it has statistical significance with the independent variable EQ-5D-5L, we can affirm that those who live with a greater number of people have better results in the EQ-5D-5L questionnaire.

## **4 Discussion and conclusion**

By the results obtained and always bearing in mind the limitation of the study by the size of the sample, we can conclude that:

- Male students express a more positive perception of their health in most of the dimensions in contrast to their female counterparts whose answers are more negative. On average, men on the VAS have obtained a score of 77.59 compared to 75.05 points for women, there is a difference of 2.54 points. We can say that men tend to value their health better than women and these differences between sexes are statistically significant.

- The older the students, the worse is the assessment of their own health. The students with the best results in VAS have been those who are in second grade, who have had on average 80.38 points and whose average age is the lowest, 62.79 years. On the other hand, we find that it is a trend that is maintained since the following students with the highest average scores on the scale are those of the first course who are the youngest (63.31 years) and those in the third course with an average age of 64.84 years. Finally, the graduated students, who are 6.33 years older than the youngest, get an average score of 73.84 in the VAS, which means a difference of 6.54 points with respect to their classmates than not only are the best positioned but also the youngest. We conclude at this point that age differences exist but are not statistically significant.

The results confirm the hypotheses raised in the research, being largely coincident with other studies of national and international character.

If we compare our results with those of the National Health Survey in Spain (ENSE) 2011/2012 [2], we see that there are similarities in the sense that both confirm that women report more health problems than men in most dimensions, and that is the pain/discomfort dimension in which both sexes claim to have problems more often. The older students of the University of Burgos show lower percentages of problems related to mobility than the general population, and we see that in the dimension related to self-care there are important differences, mainly from the age of 75, since our sample scores better in about 15% than the general sample. A similar situation to that described above occurs in the dimension related to the usual activities. On the other hand, in the dimensions of pain/discomfort and anxiety/depression, the situation is completely different to the ones described so far and we find that the UBU students obtain worse results than the population in general, being more accentuated this fact in male than female. These data show that the University Programs for older adults are a good remedy against certain problems because they can make the elderly with pain or anxiety/depression able to enrol in a program of these characteristics and benefit from all the advantages it offers. We can say that this kind of programs allow people

who are not completely healthy to continue being part of what we call "active citizenship", can continue training and acquire guidelines and develop strategies that allow them to maintain, despite their personal health circumstances, high levels of happiness. As a summary, we can say that University Programs for adults contribute to improve the quality of life of those who participate in them.

On the other hand, the National Health Survey, which measures the HRQoL in the adult population in general, concludes that the mean VAS score is 77.53 and that the values decrease systematically with the age, a fact that is also reflected through the information collected and analysed in this research. In our study, the average VAS of the students is 77.32 points, a very positive value in our case since it is not only close to the average of the Spanish population but is practically the same value (76.34) as the one of our region, Castilla y León. On the other hand, and following the comparison with the region, we find that although the general population presents a higher percentage of problems in the dimensions of usual activities and mobility, in our sample these large percentages are reflected in the dimensions of pain/discomfort and anxiety/depression as in the general data of the Spanish population. These data inform us that the health levels of our university students are very like those of the general population, which includes people from 18 years to more than 85 years, which supports the idea that lifelong learning has numerous benefits both personal and social and contributes in a clear way to maintain or even improve health levels.

As a conclusion, we can affirm that the Spanish elderly perceive that their health is worse in comparison with the university students of the UBU, despite this data, we cannot conclude that this situation is a direct consequence of an educational intervention framed within some objectives of active aging. Our sample could be biased if health is a decisive factor to enrol in a training program that requires a trip to the place where the classes are developed, willingness to enter socio-personal relationships or a minimum well-being that allows paying attention to the topics. What we can affirm is that those students who remain enrolled in the Program after graduation, despite having a mean age of 69.12 years, present better results in VAS than their counterparts in the national sample. It seems clear that training at maturity is directly related to a better perception of health and that although HRQoL depends on age and sex [2] there are other variables that can influence.

## References

1. X. Badia, M. Roset, S. Montserrat, M. Herdman, A. Segura, La versión española del EuroQol: descripción y aplicaciones. *Medicina clínica*, **112**, 79-85 (1999)
2. Encuesta Nacional de Salud. España 2011/2012. Serie Informes monográficos nº3. *Calidad de vida relacionada con la salud en adultos: EQ-5D-5L*. Madrid: Ministerio de Sanidad, Servicios Sociales e Igualdad., (2014)
3. C. E. Ferrans, J. J. Zerwic, J. E. Wilbur, J. L. Larson, Conceptual model of health-related quality of life. *Journal of Nursing Scholarship*, **37**(4), 336-342 (2005)
4. M. Herdman, X. Badía, Berra, S. El EuroQol-5D: una alternativa sencilla para la medición de la calidad de vida relacionada con la salud en atención primaria. *Atención primaria*, **28**(6), 425-429 (2001)
5. M. Herdman, C. Gudex, A. Lloyd, M. F. Janssen, P. Kind, D. Parkin, G. Bonsel, X. Badía, Development and preliminary testing of the new five-level version of EQ-5D (EQ-5D-5L). *Quality of life Research* **04**/2011 (2011)
6. P. M. Iglesias-Souto, A. Dosil, Algunos indicadores de percepción subjetiva implicados en la satisfacción del residente mayor. Propuesta de una escala de medida. *Revista Española de Geriatria y Gerontología*, **40**(2), 85-91 (2005)

7. R. J. Manheimer, La educación para mayores en los Estados Unidos: tendencias y programas de desarrollo. En VV.AA., *Los modelos marco de programas Universitarios para Mayores* (pp.111 -121). Alicante: Universidad Permanente de Alicante., (2002)
8. C. Orte, M. Gambús, *Los programas universitarios para mayores en la construcción del Espacio Europeo de Enseñanza Superior*. Palma de Mallorca: Universitat de les Illes Balears., (2004).
9. C. Palmero, A. Jimenez, The quality of university programs for older people in Spain: Innovations, tendencies and ethics in the face of active ageing and the European Higher Education Area. *Educational Gerontology*, **44**, 4., (2008)
10. H. Pillay, K. Irving, M. Tones, Validation of the diagnostic tool for assessing tertiary students' readiness for online learning. *High Education Research & Development*, **26**(2), 217-234., (2007)
11. The EuroQol Group. EuroQol – a new facility for the measurement of health-related quality of life. *Health Policy* **16**(3), 199-208., (1990) [www.euroqol.org](http://www.euroqol.org).
12. H. M. Van Agt, M. L. Essink-Bot, P. F. Krabbe, G. J. Bonsel, Test-retest reliability of health state valuations collected with the EuroQol questionnaire. *Social science & medicine*, **39**(11), 1537-1544 (1994)
13. M. A. Verdugo, L. E. Gómez, B. Arias, *La Escala FUMAT de evaluación de la calidad de vida de personas mayores y con discapacidad*. Salamanca: Universidad de Salamanca, Publicaciones del INICO, Colección Herramientas, 4 (2009)
14. World Health Organization. *Active Ageing-A Policy Framework. A contribution of the World Health Organization to the Second United Nations World Assembly on Ageing*. Madrid (ES): WHO, (2002)