



## Social stereotypes about ageing among university students of Sports Science. A pilot study

*Estereotipos sociales sobre el envejecimiento en estudiantes universitarios de Ciencias del Deporte. Un estudio piloto*

### Authors

Jose M<sup>a</sup> Cancela-Carral<sup>1,2</sup>  
Angel Casal-Moldes<sup>2,3</sup>  
Elena Vila-Suarez<sup>1,2</sup>

<sup>1</sup> Universidade de Vigo, Pontevedra, Spain

<sup>2</sup> Galicia Sur Health Research Institute (IIS Galicia Sur), SERGAS-UVIGO Vigo, Spain

<sup>3</sup> Centro socio-sanitario el Rocío, Fundación San Rosendo, Vigo, Spain.

Corresponding author:  
Jose M<sup>a</sup> Cancela-Carral  
[chemacc@uvigo.gal](mailto:chemacc@uvigo.gal)

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### Abstract

**Introduction:** Ageing is a natural process in every living being. This process can be seen from different perspectives, and these perceptions can influence how older adults are treated in society. Research conducted among university students on their perception and stereotypes of old age is scarce and very recent.

**Objective:** To know the attitudes and stereotypes that sport science students have towards old age and to see how the aging profile can condition these stereotypes were the objectives of this research.

**Methodology:** a quasi-experimental study was carried out on a total of 55 students of third and fourth year of the degree in physical activity and sport sciences, to whom the questionnaire of evaluation of negative stereotypes towards old age was administered before and after two field trips (socio-health centre vs. sports centre).

**Results:** The results show that students present ageist attitudes, although there is a difference depending on the course ( $p > 0.05$ ) and sex ( $p > 0.05$ ) analysed. Their ageist attitudes, opinions and perceptions have changed according to the profile and health status of the older adults (Health,  $p = 0.003$  vs.  $0.064$ ; Social motivation,  $p = 0.144$  vs.  $0.004$ ; Personality/Character,  $p = 0.688$  vs.  $p = 0.004$ ) with whom they interacted during their internship.

**Discussion:** Prejudice and age discrimination are inherent to different cultures, societies and times. Studies have reported that sociodemographic characteristics influence an individual's attitude toward older adults.

**Conclusions:** Sports science students display ageist attitudes, although there are differences depending on the course and gender analysed. The profile and health status of older adults influence ageism.

### Keywords

Discrimination; education; integration; older adults; sport.

### Resumen

**Introducción:** El envejecimiento es un proceso natural de los seres vivos, el cual puede ser observado desde distintas perspectivas, y dichas percepciones pueden influir en la forma en que la sociedad trata a las personas mayores. La investigación realizada en universitarios sobre su percepción y estereotipos respecto a la vejez es escasa y reciente.

**Objetivo:** Conocer las actitudes y estereotipos que tienen los estudiantes de ciencias del deporte hacia la vejez y analizar cómo el perfil de envejecimiento puede condicionar dichos estereotipos

**Metodología:** Estudio cuasi-experimental con una muestra de 55 estudiantes del grado en Ciencias del Deporte, a quienes se les administró el cuestionario de evaluación de estereotipos negativos hacia la vejez.

**Resultados:** Los resultados muestran que los estudiantes presentan actitudes edadistas, aunque existen diferencias en función del curso ( $p > 0.05$ ) y del sexo ( $p > 0.05$ ). Sus actitudes, opiniones y percepciones respecto a la vejez han variado en función del perfil y estado de salud de los adultos mayores (Salud,  $p = 0.003$  vs.  $0.064$ ; Motivación social,  $p = 0.144$  vs.  $0.004$ ; Personalidad/Carácter,  $p = 0.688$  vs.  $p = 0.004$ ).

**Discusión:** Los prejuicios y la discriminación por edad son inherentes a diferentes culturas, sociedades y épocas. Diversos estudios han reportado que las características sociodemográficas influyen en la actitud de los individuos hacia las personas mayores.

**Conclusiones:** Los estudiantes de ciencias del deporte muestran actitudes edadistas, aunque existen diferencias en función del curso y del género analizados. El perfil y el estado de salud de los adultos mayores influyen en la manifestación del edadismo.

### Palabras clave

Adultos mayores; deporte; discriminación; educación; integración.

## Introduction

Ageing is a natural part of life, a component of the human condition. Old age is the last stage of the life course; a gradual process involving biological, physiological, psychosocial and functional changes, which may differ substantially from one individual to another, and in which there is a continuous dynamic interaction between the person and his or her environment (Fernández-Ballesteros, 2008, Martinez et al., 2021).

Advances in medicine and public health, along with improved living conditions during the 20th century, have resulted in an increase in life expectancy of up to three years in many parts of the world, including Spain (Olshansky et al., 2024). As people live longer, the older adult population is growing significantly, posing new social, economic, and health challenges. Understanding how society perceives this group allows us to identify potential prejudices, stereotypes, or discriminatory attitudes that may affect their well-being and quality of life (Ramalho et al., 2021).

Old age can be viewed from different perspectives, and these perceptions can influence how older adults are treated in society. On the one hand, there are those who see old age as a time of wisdom, experience and opportunity. This perception highlights the contributions that older adults can make to society and the transmission of knowledge. In this context, old age is valued and celebrated, recognising that older adults have much to offer and contribute to society (Posthuma & Campion, 2009; Kroon et al., 2018). On the other hand, and reflected in many cultures, old age is associated with frailty, dependency and loss of capabilities. Negative stereotypes can affect people's self-esteem and quality of life, as they are perceived as less valuable or capable. This negative view can lead to ageism, where older adults are discriminated against or marginalised (Nelson, 2005; Ilişanu & Andrei, 2018).

Ageism (Agism, EE. UU) is the set of stereotypes and prejudices that assume that all people of a certain age think and behave in the same way or have the same needs or interests. Ageism is presented through explicit and implicit expressions around ageing or older adults, sometimes even gerontophobic expressions (Ayalón 2018). Analysing these discourses is key to studying a social phenomenon as their frequent use and reproduction influence mental models and, consequently, the way people think and act (Van Dijk, 2003).

The United Nations (UN) indicates that one in two people in the world engage in discriminatory actions (ageism) against older adults, causing consequences for their physical and mental health, which worsens their quality of life (Alves et al; 2024). These data are also consistent with those obtained in the World Values Survey (Officer et al, 2016) of more than 83,000 people in 57 countries, which assessed attitudes towards older adults across all age groups. In the opinion of 60% of respondents, older people are not given the respect they deserve. This problem is most pronounced in high-income countries, where the level of respect for this age group is lowest.

The World Health Organization (WHO) in its global campaign against ageism elaborates on this concept, its effects and the type of strategies to be put in place to alleviate it (WHO, 2021). The perception of old age and ageism are very important and relevant issues in today's society. It is essential to recognise that old age is a natural stage of life and that everyone experiences it differently. Many older adults are active, wise and contribute significantly to their communities. Changing the narrative about ageing involves fostering greater understanding and respect for older adults, valuing their experience and knowledge.

Research carried out among university students on their perception and stereotypes of old age is scarce and very recent, identifying that female students show less discriminatory attitudes towards older adults compared to male students (Toygar & Karda, 2020), with those in the first years showing more ageist attitudes (Rababa M, Al-Dwaikat, 2021). These data confirm that ageism (or age discrimination) is a widespread phenomenon and that it is also evident in the training stage of future professionals.

Most people are unconsciously led by stereotypes about older adults. However, as with sexism and racism, we can change these behaviours in our societies and stop treating people according to their age.

For this, it is essential to develop research studies that identify society's attitudes and perceptions towards older people, especially those of professionals who will work with this group, such as graduates in sports science and physical activity, specialising in older adults. Since we can influence their training process, enhancing the positivism of the aging process and of the older adults.



Promoting a culture of inclusion and respect for all ages can help to combat ageism and create a more positive environment for all, leading to a more prosperous, equitable and healthy society.

Based on the above, the following research is presented with two objectives: 1. Find out the social stereotypes about old age of university students enrolled in the degree of Physical Activity and Sport Sciences and 2. Identify whether knowledge and contact with different profiles of elderly people can condition this stereotypical perception.

## Method

A quasi-experimental study was designed with a convenience sample selection. The sample consisted of third- and fourth-year students of the Physical Activity and Sports Sciences degree program, enrolled in the 2024/2025 academic year in courses involving contact and interaction with older adults. The study was conducted in December 2024.

### Participants

The study population included students taking the subjects gerontology and physical activity (3rd year) and new trends in physical exercise in older adults with pathologies (4th year). A total of 55 students participated in the study, being a non-probabilistic and convenient sample.

The sample size was calculated using the G\*POWER software, considering the total population ( $n=90$ ), the confidence level (95%), sampling error (4%) and percentage of losses (5%), obtaining a sample size of at least 53 students. The inclusion criteria were: to be enrolled in one of the two subjects, to attend the practical field trips, to have attended at least 80% of the classes in each subject. Exclusion criteria: Having previously participated in the practical field trips, being enrolled in both subjects.

The study was conducted following the ethical principles for medical research on human subjects according to the Declaration of Helsinki and complied with all the provisions established in the Organic Law 3/2018 concerning Personal Data Protection and Guarantee of Digital Rights (Organic Law 3/2018, of May 25). According to this law, strict confidentiality of the data and the results of the tests performed must be maintained. The study was submitted to the Local Research Ethics Committee.

### Procedure

A total of 55 students participated in the sample. The mean age of the sample was  $22.09 \pm 1.81$  years, with 67.27% being male. The students were informed of the research objectives and completed questionnaires both before and after the practical sessions, which took place during the final week of the first semester. Data collection was conducted in a meeting room at each of the practice locations. The students were seated randomly, leaving a space between each chair, and were administered the paper-based questionnaire titled "Evaluation of Negative Stereotypes Towards Old Age." They were informed that they should complete the questionnaire with utmost honesty and that their responses would remain anonymous. A time limit of 20 minutes was set for completing the questionnaire, and all students finished within this period. The same procedure was followed once the students completed their practical activities at each centre. The supervision of the data collection process was carried out by the instructors responsible for the respective courses, as outlined in their teaching guides, which specify the conduct of these field practices. The practice locations were as follows: 1. Third-year students: Social and health care centre (profile of frail/pre-frail older adults), 2. Fourth-year students: Municipal sports facility (profile of autonomous older adults). The assignment of students to practice locations was random. The practical sessions involved familiarising students with the operation of both centres and actively participating in all planned physical and functional activities for that day, including the physical exercise programme, functional recovery programme, individualised therapeutic programme, and physical-cognitive stimulation programme.

### Instrument

The stereotypes of old age were measured through the instrument: questionnaire of evaluation of negative stereotypes towards old age (CENVE), which consists of a questionnaire of evaluation of negative stereotypes towards old age (Blanca, Sánchez & Trianes, 2005), which is made up of 15 questions, each question was measured with a Likert scale from 1 to 4 (categories: 1= strongly disagree, 2 = somewhat



disagree, 3 = somewhat agree, 4= strongly agree). Three dimensions were assessed: health dimension, social motivation dimension and personality character dimension. The health dimension included questions 1, 4, 7, 10 and 13; the social motivation dimension questions 2, 5, 8, 11 and 14; and the personality character dimension questions 3, 6, 9, 12 and 15. The overall stereotype assessment with a minimum score of 15 and a maximum score of 60 was considered negative stereotyping when the score was between 37.5 and 60.

## Data analysis

The analysis was conducted using Statistical Package for the Social Science, SPSS v.29 (Mac) software. Descriptive analysis of categorical variables included absolute and relative frequency tables, while quantitative variables included measures of central tendency (mean) and variability (standard deviation). The normality of the distribution of variable values was tested for normality using the Shapiro Wilks test ( $p>0.05$ ). For bivariate analysis, comparison of means was performed using Student's t-test for independent and related data. All statistical tests had a  $p<0.05$  to indicate statistical significance.

## Results

In this study, a slight predominance of the male sex was identified (67.27%), with the mean age of the sample being  $22.09\pm1.81$  years. Participation by grade was very similar (third year:  $n=28$ , 67.95% male,  $22.14\pm2.09$  years; fourth year:  $n=27$ , 66.60% male,  $22.00\pm1.26$  years).

When comparing the means of the different items defining the domains (health, social motivation, character-personality) in the stereotypes towards old age, it was observed that there were no significant differences in the analysis carried out between courses or between sexes before carrying out the practice trips, as can be seen in table 1 and 2.

Table 1 presents the initial analysis of the defining variables of stereotypes towards old age according to the academic year. As indicated above, the results do not show significant differences; however, it can be observed how the values of the dimensions obtained by the fourth year students are higher than those of the third year, thus approaching negative stereotypes.

Table 1. Descriptive and comparative analysis of the CENVE course/year at the initial moment.

	All n=55		Third year n=28		Fourth year n=27		t student; p
	Mean	SD	Mean	SD	Mean	SD	
1. Most people, by the time they reach the age of 65 or so, begin to have a significant memory decline.	2.39	0.87	2.36	.91	2.44	.81	$t=-0.292$ ; $p=0.772$
2. Older people have less interest in sex	2.41	0.90	2.46	.92	2.31	.87	$t=0.535$ ; $p=0.595$
3. Older people are easily irritable and 'cantankerous'	1.95	0.78	1.93	.86	2.00	.63	$t=-0.290$ ; $p=0.773$
4. Most people over the age of 65 have a mental illness severe enough to impair their mental abilities.	1.57	0.76	1.43	.79	1.81	.66	$t=-1.645$ ; $p=0.107$
5. Older people have fewer friends than younger people.	1.8	0.80	1.7	.8	2.1	.9	$t=-1.473$ ; $p=0.148$
6. As people grow older, they become more rigid and inflexible.	2.93	0.87	2.89	.92	3.00	.82	$t=-0.388$ ; $p=0.700$
7. Most adults maintain an acceptable level of health until about age 65, at which point there is a sharp decline in health.	2.11	0.81	2.18	.86	2.00	.73	$t=0.697$ ; $p=0.490$
8. As we get older, we lose interest in things.	2.00	0.86	1.89	.83	2.19	.91	$t=-1.065$ ; $p=0.281$
9. Older people are often like children.	2.20	0.95	2.11	.96	2.38	.96	$t=-0.894$ ; $p=0.377$
10. Most people over the age of 65 have a number of disabilities that make them dependent on others.	1.91	0.83	1.79	.88	2.13	.72	$t=-1.315$ ; $p=0.196$
11. As we grow older, we lose the ability to solve the problems we face.	2.09	0.77	1.93	.72	2.38	.81	$t=-1.900$ ; $p=0.064$
12. People's defects become more acute with age.	2.48	0.98	2.46	1.00	2.50	.97	$t=-0.115$ ; $p=0.909$
13. Cognitive decline (loss of memory, disorientation or confusion) is an inevitable part of old age.	2.68	0.96	2.57	.92	2.88	1.02	$t=-1.010$ ; $p=0.318$
14. Almost no one over the age of 65 does a job as well as a younger person.	1.77	0.89	1.79	.92	1.75	.86	$t=0.127$ ; $p=0.899$
15. A large proportion of people over the age of 65 years 'wimp out'.	1.70	0.76	1.54	.84	2.00	.52	$t=-2.004$ ; $p=0.052$
Health	10.66	2.97	10.32	3.31	11.25	2.24	$t=-0.997$ ; $p=0.325$
Social motivation	10.09	2.84	9.75	2.95	10.69	2.60	$t=-1.057$ ; $p=0.297$
Personality Character	11.27	3.21	10.93	3.30	11.87	3.05	$t=-0.940$ ; $p=0.353$
Total score	32.02	7.77	31.00	8.55	33.81	5.99	$t=-1.160$ ; $p=0.252$

Note: SD: Standard deviation; p: significance; t: Independent samples t-test

Source: Own elaboration



Table 2 presents the initial analysis of the defining variables of stereotypes towards old age according to the sex of the students. The results do not show significant differences; however, it can be observed that the values of the dimensions obtained by the male students are higher than those of the female students, thus bringing them closer to negative stereotypes.

Table 2. Descriptive and comparative analysis of CENVE by sex at the initial moment.

	Female n=15		Male n=29		t student t; p
	Mean	SD	Mean	SD	
1. Most people, by the time they reach the age of 65 or so, begin to have a significant memory decline.	2.20	1.01	2.48	0.78	t=-1.024; p= 0.312
2. Older people have less interest in sex	2.27	0.88	2.48	0.91	t=-0.753; p= 0.456
3. Older people are easily irritable and 'cantankerous' 4.	1.87	0.52	2.00	0.89	t=-0.536; p= 0.595
4. Most people over the age of 65 have a mental illness severe enough to impair their mental abilities.	1.53	0.74	1.59	0.78	t=-0.216; p= 0.830
5. Older people have fewer friends than younger people.	1.9	0.70	1.8	0.90	t=0.647; p= 0.521
6. As people grow older, they become more rigid and inflexible.	2.67	1.05	3.07	0.75	t=-1.468; p= 0.150
7. Most adults maintain an acceptable level of health until about age 65, at which point there is a sharp decline in health.	1.87	0.74	2.24	0.83	t=-1.468; p= 0.149
8. As we get older, we lose interest in things.	1.87	0.92	2.07	0.84	t=-0.733; p= 0.467
9. Older people are often like children.	2.20	1.01	2.21	0.94	t=-0.022; p= 0.982
10. Most people over the age of 65 have a number of disabilities that make them dependent on others.	1.87	0.99	1.93	0.75	t=-0.241; p= 0.811
11. As we grow older, we lose the ability to solve the problems we face.	2.07	0.80	2.10	0.77	t=-0.148; p= 0.883
12. People's defects become more acute with age.	2.13	0.83	2.66	1.01	t=-1.719; p= 0.093
13. Cognitive decline (loss of memory, disorientation or confusion) is an inevitable part of old age.	2.60	0.99	2.72	0.96	t=-0.403; p= 0.689
14. Almost no one over the age of 65 does a job as well as a younger person.	1.47	0.52	1.93	1.00	t=-1.683; p= 0.100
15. A large proportion of people over the age of 65 years 'wimp out'.	1.60	0.63	1.76	0.83	t=-0.648; p= 0.521
Health	10.07	3.59	10.97	2.61	t=-0.950; p= 0.348
Social motivation	9.60	2.77	10.34	2.88	t=-0.823; p= 0.415
Personality Character	10.47	2.77	11.69	3.38	t=-1.205; p= 0.118
Total score	30.13	7.79	33.00	7.70	t=-1.166; p= 0.125

Note: SD: Standard deviation; p: significance; t: Independent samples t-test

Source: Own elaboration

Table 3 shows the comparative study of the items and defining dimensions of stereotypes towards old age in third-year students after the field trip to a social-health centre for frail elderly people. The results show that, after the development of the field trip, students have a more negative perception towards old age, mainly reflected in the health dimension (-1.321; -2.146 - -0.496; p=0.003; Cohen's d=0.405). If we analyse the 15 items, it is worth noting that item 10 was the one that changed the most, going from 1.785 to 2.500 (-0.714; -1.537 - 0.109; p=0.046; Cohen's d=0.441), increasing the negative perception towards old age from a health point of view. Items 1, 5 and 15 were unchanged, while items 2, 3 and 12 were the only ones that improved, these items being related to motivation (2) and character/personality (3,12).

Table 3. Paired samples t-test of CENVE in third-year students.

	Paired Differences Mean	SD	Third year				
			95% Confidence Interval of the Difference		t	gf	p
			Lower	Upper			
1. Most people, by the time they reach the age of 65 or so, begin to have a significant memory decline.	0.001	0.544	-0.211	0.211	0.001	27	0.998
2. Older people have less interest in sex	0.035	0.576	-0.187	0.259	0.328	27	0.745
3. Older people are easily irritable and 'cantankerous' 4.	0.285	0.658	0.030	0.541	2.295	27	0.030
4. Most people over the age of 65 have a mental illness severe enough to impair their mental abilities.	-0.357	0.731	-0.640	-0.073	-2.585	27	0.015
5. Older people have fewer friends than younger people.	0.000	0.544	-0.211	0.211	0.000	27	1.000
6. As people grow older, they become more rigid and inflexible.	-0.142	0.542	-0.346	0.060	-1.441	27	0.161
7. Most adults maintain an acceptable level of health until about age 65, at which point there is a sharp decline in health.	-0.178	0.611	-0.415	0.058	-1.544	27	0.134
8. As we get older, we lose interest in things.	-0.107	0.628	-0.351	0.136	-0.902	27	0.375
9. Older people are often like children.	-0.107	0.497	-0.299	0.085	-1.140	27	0.264
10. Most people over the age of 65 have a number of disabilities that make them dependent on others.	-0.714	2.123	-1.537	0.109	-1.780	27	0.046





11. As we grow older, we lose the ability to solve the problems we face.	-0.178	0.722	-0.458	0.101	-1.307	27	0.202
12. People's defects become more acute with age.	0.071	0.662	-0.185	0.328	0.570	27	0.573
13. Cognitive decline (loss of memory, disorientation or confusion) is an inevitable part of old age.	-0.071	0.716	-0.349	0.206	-0.528	27	0.602
14. Almost no one over the age of 65 does a job as well as a younger person.	-0.428	0.959	-0.800	-0.056	-2.364	27	0.026
15. A large proportion of people over the age of 65 years 'wimp out'.	0.001	0.666	-0.258	0.258	0.000	27	1.000
Health	-1.321	2.126	-2.146	-0.496	-3.288	27	0.003
Social motivation	-0.678	2.389	-1.604	0.247	-1.503	27	0.144
Personality Character	0.107	1.396	-0.434	0.648	0.406	27	0.688
Total score	-1.892	3.861	-3.390	-0.395	-2.594	27	0.015

Note: gf: degrees of freedom; p: significance; SD: Standard Deviation; t: Paired samples t-test

Source: Own elaboration

Table 4 shows the comparative study of the items and defining dimensions of stereotypes towards old age in fourth-year students after the development of the field trip to a municipal sports service oriented to older adults. The results show that after the development of the field trip, students have a more positive perception towards old age, being reflected mainly in the character/personality dimension (2.250; 0.840 - 3.659;  $p=0.004$ ; Cohen's  $d=0.780$ ). If we analyse the 15 items, it is worth noting that items 8 and 11 were the ones that most modified their value (0.562; 0.128 - 0.996;  $p=0.014$ ; Cohen's  $d=0.723$ ) increasing the positive perception towards old age from a social motivation point of view. The only item that worsened the perception of old age was item 9, linked to character/personality (-0.062; -0.749 - 0.624;  $p=0.849$ ; Cohen's  $d=0.467$ ).

Table 4. Paired samples t-test of CENVE in fourth year students.

	Paired Differences Mean	SD	Fourth year				
			95% Confidence Interval of the Difference		t	gf	p
			Lower	Upper			
1. Most people, by the time they reach the age of 65 or so, begin to have a significant memory decline.	0.437	1.093	-0.145	1.020	1.600	26	0.130
2. Older people have less interest in sex	0.125	0.806	-0.304	0.554	0.620	26	0.544
3. Older people are easily irritable and 'cantankerous' 4.	0.437	0.512	0.164	0.710	3.416	26	0.004
4. Most people over the age of 65 have a mental illness severe enough to impair their mental abilities.	0.125	0.619	-0.204	0.454	0.808	26	0.432
5. Older people have fewer friends than younger people.	0.500	0.632	0.162	0.837	3.162	26	0.006
6. As people grow older, they become more rigid and inflexible.	1.000	0.894	0.523	1.476	4.472	26	<0.001
7. Most adults maintain an acceptable level of health until about age 65, at which point there is a sharp decline in health.	0.125	0.806	-0.304	0.554	0.620	26	0.544
8. As we get older, we lose interest in things.	0.562	0.813	0.128	0.996	2.764	26	0.014
9. Older people are often like children.	-0.062	1.289	-0.749	0.624	0.194	26	0.849
10. Most people over the age of 65 have a number of disabilities that make them dependent on others.	0.250	0.774	-0.162	0.662	1.291	26	0.216
11. As we grow older, we lose the ability to solve the problems we face.	0.562	0.813	0.128	0.996	2.764	26	0.014
12. People's defects become more acute with age.	0.375	0.885	-0.096	0.846	1.695	26	0.111
13. Cognitive decline (loss of memory, disorientation or confusion) is an inevitable part of old age.	0.437	0.892	-0.037	0.912	1.962	26	0.069
14. Almost no one over the age of 65 does a job as well as a younger person.	0.062	0.853	-0.392	0.517	0.293	26	0.774
15. A large proportion of people over the age of 65 years 'wimp out'.	0.500	0.516	0.224	0.775	3.873	26	0.002
Health	1.375	2.753	-0.092	2.842	1.997	26	0.064
Social motivation	1.812	2.166	0.657	2.967	3.346	26	0.004
Personality Character	2.250	2.645	0.840	3.659	3.402	26	0.004
Total score	5.437	6.065	2.205	8.669	3.586	26	0.003

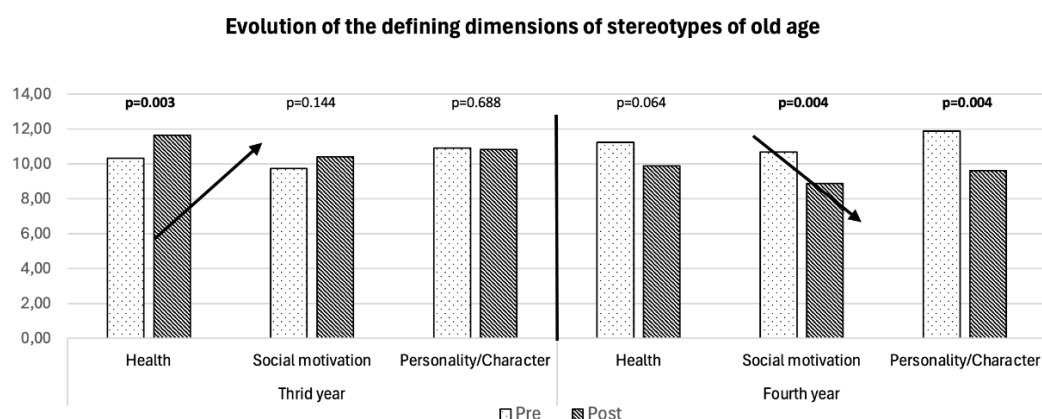
Note: gf: degrees of freedom; p: significance; SD: Standard Deviation; t: Paired samples t-test

Source: Own elaboration

In Figure 1, the trend of ageist behaviours is depicted based on the dimensions that define them. It can be observed that students who have participated in practises at the social and health care centre have shown an increase in ageist behaviours, whereas students who have attended a centre where older adults are entirely independent have demonstrated a reduction in their ageist behaviours.



Figure 1. Graphical representation of the behavior of the dimensions of the stereotypes of old age as a function of the course.



## Discussion

The study reported that the students enrolled in the degree of physical activity and sport sciences present ageist attitudes. Ageism was more prevalent among fourth-year male students. The results of this research also reflected that the ageist tendencies of the university student group were influenced by the health status of older adults. In other words, the profile of older adults is an important parameter and determinant of ageist attitudes in the students analysed. Students who attended the social-health centre presented negative attitudes and were more prejudiced than the group of students who attended the municipal sports centre for older adults, reflecting how the profile influences the stereotypical perception of aging.

The students who attended the socio-health centre presented negative attitudes and with greater prejudice than the group of students who attended the municipal sports centre oriented to older adults, which reflects how the profile conditions the stereotypical perception of aging.

Prejudice and age discrimination are inherent to different cultures, societies and times. In 1969, Butler introduced the concept of ageism as a process of discrimination and systematic negative stereotypes against people for being older adults, considering its approach from three dimensions: stereotypes (thoughts), prejudices (feelings) and discrimination (practices) against people based on their age. It is understood that ageism is an integral and multifactorial phenomenon, dissociated from the individual character because it is the result of collective learning, influenced by cultural, economic, social and religious norms, which have an impact on the vision and treatment of older adult patients (Gherman et al., 2022). It would not be until the year 2000 when the World Health Organization (2002) promotes the concept of Active Aging (AoA), to promote the participation and well-being of older people, promoting a conception of the older human being with productive capacity (WHO, 2015).

Studies have reported that some sociodemographic characteristics, such as male gender, being younger, having a low level of education, professional experience, work environment, and having a knowledge base about aging and old age, influence an individual's attitude toward older adults (Kalaycı et al., 2018, Officer et al, 2020). A recent study conducted in 57 countries revealed that younger age, male gender, and having a lower level of education are factors that increase the likelihood of a person being highly ageist. The effect of educational attainment was stronger than the effect of younger age or male gender, which only slightly increase the risk of ageism against older people (Officer et al, 2020). Lower educational attainment also increases the likelihood that a person will exhibit moderate ageism. Previous smaller studies have also shown similar results with respect to sex or gender (Fraboni et al, 1990, Rupp et al 2006), age (Kite et al, 2005) and educational attainment (Abrams et al, 2011). The results obtained in our research work agree with those presented by the previously cited researchers.

One aspect to highlight in our research was the change in the values of the defining dimensions of ageism according to the profile of the older adult with whom the students interacted, so those who visited the

social-health centre with older people, more dependent and less healthy increased their values with a tendency to ageism, while those students who visited a municipal sports centre, which was attended by older people with good health and a high level of independence, reduced the values of ageism. These results are consistent with those obtained by Marques et al. (2020), who in their research work concluded that as people age, their likelihood of ageism increases: the older a person is, the more likely he or she is to be subject to ageism. Gekoski & Knox (1990) conducted a research study that reflected that being in poor health or being care-dependent was a risk factor for negative perceptions of older people. James & Haley (1995) also reported the existence of a possible bias against older people who are ill or more care dependent. This indicates that the way older people are perceived may depend on the health status associated with their age rather than on age per se (James & Haley, 1995).

Among the limitations worth highlighting is that the study sample was a convenience sample, focusing on students from a single Spanish public university, who were studying for a degree in Physical Activity and Sports Sciences. Furthermore, the type of study does not allow us to indicate the cause and effect between the study variables. However, the results presented are important, since they allowed us to identify the importance of teaching subjects related to the aging process, due to the fact that this group of students will soon be able to practice their profession, being the group of elderly people a professional field in expansion.

## Conclusions

This study reflects the perceptions and attitudes towards ageism of third and fourth year students of the degree in physical activity and sport sciences of a Spanish public university. The results show that students present ageist attitudes, although there is a difference depending on the course and sex analysed. Their ageist attitudes, opinions and perceptions have changed according to the profile and health status of the older adults with whom they interacted during their internship.

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**Authors' and translators' details:**

Jose M<sup>a</sup> Cancela Carral  
Angel Casal-Moldes  
Elena Vila-Suarez

chemacc@uvigo.es  
angel.casalmoldes@gmail.com  
evila@uvigo.gal

Autor/a  
Autor/a  
Autor/a