

Comparison between self-concept, self-perception, physical exercise and lifestyle variations from 1st to 4th grade students of nursing in Tenerife, Spain

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Abstract

The aim of this study was to describe and compare the self-concept, self-perception, physical exercise, and lifestyle of students from 1st to 4th year of the Nursing university studies. Descriptive observational cross-sectional study with analytical components. The study sample consisted of 1st and 4th year undergraduate Nursing students. Five questionnaires were used: a sociodemographic survey, the RSES, the GHQ-12, the PAQ-A and the HBSC. The sample consisted of 197 subjects. 44.2% had a low self-concept and a perception of self-value that improved as they progressed academically, while confidence decreased. The PAQ-A showed that 65.5% performed moderate physical activity and 15.7% were sedentary, 58.9% reported a fair lifestyle and 20.8% of the subjects reported an inadequate diet. In the GHQ-12, the perception of self-value subscale showed an improvement with respect to the academic year. The SOC-13 data showed fair coping with traumatic situations, which worsened in the 4th year, being 88.9% in males and 84.6% in females. The study identified low self-concept, an adequate self-perception, moderate physical activity with a tendency towards sedentary lifestyles, and a fair lifestyle. It is significant that adolescents do not perceive the poor figures they obtain in self-concept, physical exercise, diet, sleep, and violence as reflected in their health. It is known that the changes adopted in adolescence will be perpetuated in adulthood. Therefore, influencing this population group, and even more so, if they are potential future health professionals, is deemed necessary.

Abbreviations: GHQ-12 = General Health Questionnaire 12, HBSC = Health Behaviour in School-aged Children, KMO = Kaiser Meyer Olkin, PAQ-A = Physical Activity Questionnaire for Adolescents, RSES = Rosenberg Self-Esteem Scale, SOC-13 = Sense of Internal Coherence Scale, WHO = World Health Organisation.

Keywords: lifestyle, nursing, physical exercise, self-concept, self-perception, students

1. Introduction

Physical and psychological self-care and a healthy lifestyle are crucial for health and well-being, but the number of people engaged in inappropriate behaviors continues to increase. Health problems related to self-concept, self-perception, physical activity, and lifestyle are observed in adolescents.^[1-3] These concepts provide an overall view of the adolescent, allowing for an understanding of the way they think and behave.^[3]

In a previous study, students with a mean age of 17 years perceived their health as good or very good and declared themselves to be physically active. They did not associate exercise with their self-concept or self-esteem. This is noteworthy because the

Canary Islands have a high prevalence of obesity compared to national rates. In this respect, whether the information received by this age group is effective or whether there is a lack of motivation and/or resources is questioned.^[4]

Self-concept is indicative of emotional well-being and personal satisfaction.^[5,6] It is modified according to the individual's level of maturity, age, and sex. It is linked to physical, cognitive, behavioral, affective, and social status.^[7-10] It is influenced by values, cultural expectations, and personal relationships.^[5,11] Together with self-esteem, i.e. self-worth or self-efficacy, the self-concept influences a person's thinking, behavior, and social skills,^[11-14] and both are indicative of general well-being,^[15,16] and can therefore prevent the occurrence of psychological

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All data generated or analyzed during this study are included in this published article [and its supplementary information files].

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disorders.^[13,16,17] In contrast, people whose self-esteem is affected tend to resort to substance abuse^[15] and this is associated with ineffective coping strategies.^[18–24]

Self-perception comprises all the concepts that a person develops internally about him/herself.^[25,26] It is involved in the way we relate to each other, in our behavior and in our thinking. It also helps to prevent illnesses such as anxiety and depression.

Physical exercise contributes to the proper functioning of the body, as well as to well-being, self-concept/self-esteem, and self-perception.^[27–33] It prevents pathologies that affect the body mass index, avoiding overweight and obesity. It also reduces the incidence of substance abuse and improves social integration, autonomy, and self-esteem.^[32–40] Women devote the least amount of time to physical exercise and for the most part do not engage in any particular sport.^[33,34] The promotion of physical exercise from a very early age is incorporated into public health policies in many countries.^[30,38] The World Health Organisation (WHO) sets targets by age group for time, intensity, and frequency of physical activity.^[39,40]

Leading a healthy lifestyle prevents eating disorders, improves self-concept and self-perception, and protects against chronic non-communicable diseases.^[10,35,38,39,41–43] It is essential to focus on healthy patterns in a society that is increasingly polarized on 2 sides. On the one hand, in Spain, Mexico, and Colombia, the percentage of overweight and obese adolescents is increasing. On the other hand, there is a population group suffering from eating disorders linked to problems of malnutrition or underweight, such as anorexia and bulimia.^[31,44]

Valid and reliable instruments for assessing self-concept, self-perception, physical exercise, and lifestyle in adolescents are essential for targeting prevention and health promotion strategies. A systematic review was developed to find the optimal measurement instruments for the analysis of these concepts and target population.^[3] The Rosenberg Self-Esteem Scale (RSES),^[45,46] the General Health Questionnaire 12 (GHQ-12),^[47,48] the Physical Activity Questionnaire for Adolescents (PAQ-A),^[49,50] and the Health Behaviour in School-aged Children (HBSC)^[51,52] are the optimal questionnaires for assessing adolescents. Emphasis needs to be placed on positive development, i.e. the acquisition of competencies, values, and skills that the young person needs to adopt in order to ensure a successful future.^[53–56] Adolescence is considered the best stage for behavior modification, which will be perpetuated throughout adulthood.^[5,37,54–59]

In a previous study, self-concept, self-perception, physical exercise, and lifestyle were assessed in adolescents internationally using the RSES, GHQ-12, PAQ-A, and HBSC instruments.^[60,61] The Sense of Internal Coherence Scale was identified (SOC-13)^[62–64] among the HBSC study questions. Women were identified as suffering more from disabling conditions due to chronic diseases, which led to low self-perception, depression, and anxiety, regardless of cultural background. In the case of men, they showed life-threatening health problems. Spanish male teenagers were the ones with the highest physical exercise habits. Students of Health Sciences had the highest percentage of overweight, obesity, and consumption of toxic substances, with no differentiation between countries.^[61] In another studies, nursing students showed the worst results in terms of self-concept. Exercise was scarce and lifestyle was unhealthy. It was men who felt the worst about their body image. In the Psychology and Nursing degrees, violent acts had been suffered/generated. Sleep quality was poor in both sexes and in both degrees.

In this sense, uncertainty arises as to whether university students are able to apply the knowledge acquired to their own benefit. Therefore, the present research helps to understand whether future health professionals will be able to incorporate and apply to their lifestyles the recommendations made during the practice of their profession in the field of public health. Establishing differences between first and fourth-year students would be indicative of their own knowledge acquisition and lifestyle changes.

1.1. Hypothesis

Fourth year students of the degree in Nursing had a better self-concept and self-perception, did more physical exercise, and had a healthier lifestyle than first-year students of the same degree.

1.2. Objectives

- To describe the self-concept, self-perception, physical exercise habits, and lifestyle of 1st and 4th year students of the Nursing degree.
- To compare 1st and 4th year students of the Nursing degree with regard to their self-perception, self-concept, physical activity habits, and lifestyle.

2. Methods

2.1. Design and procedure

A descriptive, observational, cross-sectional study with analytical components was conducted. The Guidelines for Strengthening the Reporting of Observational Studies in Epidemiology (STROBE)^[65] were followed in this study. Also, the ethical principles of the Declaration of Helsinki and the confidentiality of the data requirements were met. Ethical approval for this study was obtained from the University of La Laguna (ENF 19/43). Data collection was carried out over 4 days, in 3 educational centers belonging to the University of La Laguna: School of Nursing of the Nuestra Señora de Candelaria University School of Nursing and the School of Nursing of the University Hospital of the Canary Islands, where students from the School of Nursing of La Palma were also surveyed by videoconference. Two days were spent at each center in order to be able to survey the students enrolled in the first and fourth years of the Nursing degree. The questionnaires were given to all those who agreed to participate in the research by having previously signed the written informed consent form, which was completed electronically.

2.2. Population and sample

The total enrolled population according to the data available from the University of La Laguna was 2420 students in 2018.^[66] The sample size calculated for a confidence level of 95%, a precision of 3%, and a loss estimate of 15% was 187 participants, segmented by academic year. Convenience sampling was carried out to obtain a sample of 197 participants.

2.3. Selection criteria

2.3.1. Inclusion criteria. Teenagers in their 1st and 4th year of the Nursing degree at the different teaching centers of the University of La Laguna in Santa Cruz de Tenerife. The questionnaire was attached to the online platform so that students of the European Region Action Scheme for the Mobility of University Students and the Exchange System between University Centres in Spain (for its acronym in Spanish) could fill it in.

2.3.2. Exclusion criteria. Individuals who did not give their consent and who were not Spanish speakers were excluded.

2.4. Variables

Demographic data concerning sex, age, Body Mass Index, and academic year.

2.5. Instruments

The RSES,^[45,46] GHQ-12,^[47,48] PAQ-A,^[49,50] and the HBSC^[51,52] were used for data collection.

2.5.1. RSES. It assesses positive self-esteem (items 1, 3, 4, 7, and 10) and negative self-esteem (items 2, 5, 6, 8, and 9). A 4-point Likert-type scale was used to obtain the score. Negative self-esteem items were rated inversely. The authors did not establish cutoff points, although the following were considered: high self-esteem with 30 to 40 points (normal self-esteem), intermediate self-esteem with 26 to 29 points (it should be improved), and low self-esteem with less than 25 points (self-esteem problems).^[45,46]

2.5.2. GHQ-12. It consists of 6 positive questions (items 1, 3, 4, 7, and 8) and 6 negative questions (items 2, 5, 6, 9, 10, and 11). It explores depression, anxiety, social inadequacy, and hypochondriasis. A 4-point Likert scale is used for assessment. Scores of 12 or higher indicate the possibility of emotional disturbance.^[47,48]

2.5.3. PAQ-A. It allows finding out at what time in the last 7 days adolescents were most active. It consists of 9 questions, assessed on a 5-point Likert scale. The first 8 questions are used to grade the level of physical activity of the young person. The last question allows to know whether the adolescent was ill.^[49,50]

2.5.4. HBSC. It assesses socio-demographic variables, food and diet, oral hygiene, sleep hours, physical activity and sedentary behaviors, risky consumption, sexual behavior, injuries, family context, peers and leisure time, school context, neighborhood, health and psychological adjustment, and socio-economic inequalities.^[51,52] It does not have a total score. In the studies reviewed, only descriptive findings found at the international level were observed.^[51,52] A method of scoring by sub-sections and an overall score is proposed:

Food (questions 1–4):

- From 0 to 2 points, inadequate diet.
- From 3 to 5 points, fair diet.
- Between 6 and 8, adequate diet.

Questions 5 and 6 were not considered for not being significant regarding the adolescent's eating habits.

- Body image (questions 7–10):
- Below 2 points, poor body image.
- Between 3 and 5 points, fair body image.
- Above 6 points, good body image.
- Sleep (questions 11–14):
- Below 2, inadequate sleep.
- Between 3 and 5 points, fair sleep.
- Above 6 points, adequate sleep.
- Violence (questions 15–19):
- Below 4 points, high level of violence.
- Between 5 and 7 points, violence exists.
- Above 8 points, does not engage in or receive violent acts.
- Positive health (questions 20–24, 38 and 39):
- Below 4 points, poor health.
- Between 5 and 9 points, fair health.
- Above 10 points, positive health.
- Total HBSC score: this is the sum of the total scores from the previous sections:
- Below 4 points, inadequate lifestyle.
- Between 5 and 7 points, fair lifestyle.
- Above 8 points, healthy lifestyle.

By exploiting this questionnaire, it was found that questions 25 to 37 corresponded to the SOC-13 questionnaire.^[62–64]

2.5.5. Sense of internal coherence scale (SOC-13). It assesses the sense of internal coherence related to coping with traumatic situations. Consisting of 13 questions, it is a predictor of perceived and objective health. Items 25, 26, 27, 27, 31, and

34 are formulated in a negative sense. Their value is inverted for the analysis. It has 3 subscales:

- Comprehensibility: ability to understand other people and to control thoughts and emotions. Questions: 26, 30, 32, 32, 33, and 35.
- Manageability: degree of personal understanding of the resources available to cope with the demands of the environment. Questions: 27, 29, 34, and 37.
- Meaningfulness: motivational component where demands are seen as challenges. Questions: 25, 28, 31, and 36.

The sum of each gives the total score, which ranges between 13 and 91 points. The higher the score, the better the results in the subscales.^[62–64]

2.6. Statistical analysis

For the statistical analysis, the IBM SPSS v.22.0 (Armonk, NY) programme was used. Measures of central tendency and percentages were used in the descriptive analysis, Tables 1 and 2.

Cronbach's alpha was calculated for the reliability analysis of the questionnaires, Table 3. Factor analysis was used when the identified reliability was low, with the aim of finding underlying factors. This was the case of the GHQ-12 and the SOC-13, as found in the analysis of the HBSC questionnaire. A maximum likelihood analysis with Varimax rotation was performed when Bartlett's test of sphericity and the KMO (Kaiser Meyer Olkin test for sampling adequacy) indicated the suitability of this test. When identifying factors, understood as subscales, their reliability was analyzed with Cronbach's alpha test. Three categories were obtained for the GHQ-12: Perception of self-value (questions 1, 3, 4, 8, and 12), Confidence (questions 9, 10, and 11) and Concern (questions 2, 5, 6, and 7). Their reliability was 0.698%, 0.717%, and 0.460%, respectively. In the SOC-13, there was no exact score to classify the sense of internal coherence related to coping with traumatic situations.^[62–64] Three subscales were identified: Comprehensibility, Manageability, and Meaningfulness. A total classification of the SOC-13 as poor, fair, or good was proposed (Table 3).

In order to determine whether there were any relationships between the variables under study, Pearson's correlation analysis was carried out (Table 4). The variables under study included the questionnaires used and the different factors found by the research team. Correlations are shown, highlighting those that are strong (greater than 0.7) or moderate (between 0.4 and 0.7) for a significance level of 0.05% between the different variables. In addition, hypothesis tests were carried out to identify differences between groups related to the socio-demographic variables under study (Table 5).

3. Results

3.1. Sample description

A total of 197 subjects were obtained, of whom 77.2% were females and 22.8% were males. The median age was 19 years. The participants attended classes of the 1st and 4th years of the Nursing degree at the University of La Laguna. The sample size obtained guaranteed representativeness for the total number of students who study Nursing at the University of La Laguna. With respect to the general population of this same age group, they are a sample group with an over-represented female population and a higher level of education, specifically in health issues, than the reference population.

Table 2 shows the results according to sex, academic year, and age. A comparison between students in their first and fourth year of the degree revealed that self-concept and self-esteem, as measured by the RSES, decreased in males over 25 years of age. In the case of late adolescents, the percentage of people with

Table 2
Differences by sex, academic year, and age.

	Males				Females			
	1st year Nursing		4th year Nursing		1st year Nursing		4th year Nursing	
	18	19-24	19-24	>25	18	19-24	19-24	>25
RSES. High	50%	47.4% N = 21; 58.3%	50%	66.7%	52%	48.6% N = 56; 49.6%	71%	75%
RSES. Intermediate	12.5%	31.6% N = 8; 22.2%	16.7%	33.3%	24%	23.6% N = 29; 25.7%	22.6% N = 9; 23.1%	25%
RSES. Low	37.5%	21.1% N = 7; 19.4%	33.3%	0%	24%	27.8% N = 28; 24.8%	6.5% N = 2; 5.1%	0%
GHQ-12 Normal	0%	26.3% N = 7; 19.4%	0%	33.3%	8%	15.3% N = 28; 24.8%	12.9% N = 2; 5.1%	12.5%
GHQ-12. Emotional disorder	100%	73.7% N = 24; 66.7%	100%	66.7%	92%	84.7% N = 28; 24.8%	87.1% N = 31; 79.5%	87.5%
Perceived self-value Good	62.5%	63.2% N = 24; 66.7%	83.3%	100%	64%	69.4% N = 28; 24.8%	77.4% N = 31; 79.5%	87.5%
Perceived self-value Fair	37.5%	36.8% N = 12; 33.3%	16.7%	0%	36%	29.2% N = 34; 30.1%	22.6% N = 8; 20.5%	12.5%
Perceived self-value Bad	0%	0% N = 0; 0%	0%	0%	0%	1.4% N = 2; 1.8%	0% N = 0; 0%	0%
Confidence Good	75%	42.1% N = 19; 52.8%	50%	33.3%	64%	47.2% N = 57; 50.4%	45.2% N = 18; 46.2%	50%
Confidence Fair	25%	57.9% N = 17; 47.2%	50%	66.7%	36%	52.8% N = 56; 49.6%	54.8% N = 21; 53.8%	50%
Confidence Bad	0%	0% N = 0; 0%	0%	0%	0%	0% N = 0; 0%	0% N = 0; 0%	0%
Concern Good	87.5%	52.6% N = 20; 55.6%	66.7%	66.7%	40%	48.6% N = 55; 48.7%	48.4% N = 20; 51.3%	62.5%
Concern Fair	12.5%	47.4% N = 16; 44.4%	33.3%	33.3%	60%	51.4% N = 58; 51.3%	51.6% N = 19; 48.7%	37.5%
Concern Bad	0%	0% N = 0; 0%	0%	0%	0%	0% N = 0; 0%	0% N = 0; 0%	0%
PAQ-A. Sedentary	0%	15.8% N = 3; 8.3%	16.7%	33.3%	16%	22.2% N = 23; 20.4%	6.5% N = 3; 7.7%	12.5%
PAQ-A. Moderate activity	37.5%	68.4% N = 23; 63.9%	66.7%	66.7%	60%	65.3% N = 69; 61.1%	77.4% N = 31; 79.5%	87.5%
PAQ-A. Vigorous activity	62.5%	15.8% N = 10; 27.8%	16.7%	0%	24%	12.5% N = 21; 18.6%	16.1% N = 5; 12.8%	0%
HBSC. Bad	0%	5.3% N = 1; 2.8%	0%	0%	12%	11.1% N = 11; 9.7%	6.5% N = 2; 5.1%	0%
HBSC. Fair	75%	52.6% N = 22; 61.1%	50%	33.3%	60%	61.1% N = 70; 61.9%	45.2% N = 20; 51.3%	75%
HBSC. Good	25%	42.1% N = 13; 36.1%	50%	66.7%	28%	27.8% N = 32; 28.3%	48.4% N = 17; 43.6%	75%
Eating habits. Bad	12.5%	10.5% N = 7; 19.4%	33.3%	33.3%	32%	22.2% N = 28; 24.8%	9.7% N = 3; 7.7%	0%
Eating habits. Fair	87.5%	63.2% N = 24; 66.7%	50%	33.3%	48%	54.2% N = 62; 54.9%	64.5% N = 28; 71.8%	100%
Eating habits. Good	0%	26.3% N = 5; 13.9%	16.7%	33.3%	20%	23.6% N = 23; 20.4%	25.8% N = 8; 20.5%	0%

(Continued)

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Table 2
(Continued)

	Males				Females			
	1st year Nursing		4th year Nursing		1st year Nursing		4th year Nursing	
	18	19-24	19-24	>25	18	19-24	19-24	>25
Body image. Bad	0%	0%	0%	0%	0%	2.2%	3.2%	0%
		N = 0; 0%	N = 0; 0%	N = 0; 0%		N = 2; 1.8%	N = 1; 2.6%	
Body image. Fair	37.5%	36.8%	33.3%	66.7%	32%	45.8%	32.3%	25%
		N = 12; 33.3%	N = 4; 44.4%	N = 4; 44.4%		N = 45; 39.8%	N = 12; 30.8%	
Body image. Good	62.5%	63.2%	66.7%	33.3%	68%	52%	64.5%	75%
		N = 24; 66.7%	N = 5; 55.6%	N = 5; 55.6%		N = 66; 58.4%	N = 26; 66.7%	
Sleep. Bad	25%	52.6%	0%	0%	44%	45.8%	35.5%	50%
		N = 15; 41.7%	N = 0; 0%	N = 0; 0%		N = 46; 40.7%	N = 15; 38.5%	
Sleep. Fair	75%	26.3%	83.3%	66.7%	48%	51.4%	58.1%	50%
		N = 15; 41.7%	N = 7; 77.8%	N = 7; 77.8%		N = 60; 53.1%	N = 22; 56.4%	
Sleep. Good	0%	21.1%	16.7%	33.3%	8%	2.8%	6.5%	0%
		N = 6; 16.7%	N = 2; 22.2%	N = 2; 22.2%		N = 7; 6.2%	N = 2; 5.1%	
Violence. Bad	0%	0%	0%	0%	0%	1.4%	0%	0%
		N = 0; 0%	N = 0; 0%	N = 0; 0%		N = 1; 0.9%	N = 0; 0%	
Violence. Fair	12.5%	0%	0%	0%	0%	1.4%	3.2%	0%
		N = 1; 2.8%	N = 0; 0%	N = 0; 0%		N = 1; 0.9%	N = 1; 2.6%	
Violence. Good	87.5%	100%	100%	100%	100%	97.2%	96.8%	100%
		N = 35; 97.2%	N = 9; 100%	N = 9; 100%		N = 111; 98.2%	N = 38; 97.4%	
Positive health. Bad	0%	0%	0%	0%	4%	11.1%	3.2%	0%
		N = 0; 0%	N = 0; 0%	N = 0; 0%		N = 9; 8%	N = 1; 2.6%	
Positive health. Fair	62.5%	57.9%	50%	0%	64%	40.3%	22.6%	75%
		N = 18; 50%	N = 3; 33.3%	N = 3; 33.3%		N = 55; 48.7%	N = 13; 33.3%	
Positive health. Good	37.5%	42.1%	50%	100%	32%	48.6%	74.2%	25%
		N = 18; 50%	N = 6; 66.7%	N = 6; 66.7%		N = 49; 43.4%	N = 25; 64.1%	
SOC-13. Bad	0%	0%	0%	0%	0%	4.2%	0%	0%
		N = 0; 0%	N = 0; 0%	N = 0; 0%		N = 3; 2.7%	N = 0; 0%	
SOC-13. Fair	100%	78.9%	100%	66.7%	84%	75%	83.9%	87.5%
		N = 31; 86.1%	N = 8; 88.9%	N = 8; 88.9%		N = 88; 77.9%	N = 33; 84.6%	
SOC-13. Good	0%	21.1%	0%	33.3%	16%	20.8%	16.1%	12.5%
		N = 5; 13.9%	N = 1; 11.1%	N = 1; 11.1%		N = 22; 19.5%	N = 6; 15.4%	
Comprehensibility. Bad	25%	31.6%	33.3%	0%	28%	41.7%	6.5%	25%
		N = 9; 25%	N = 2; 22.2%	N = 2; 22.2%		N = 40; 35.4%	N = 4; 10.3%	
Comprehensibility. Fair	75%	63.2%	66.7%	66.7%	64%	51.4%	90.3%	75%
		N = 26; 72.2%	N = 6; 66.7%	N = 6; 66.7%		N = 65; 57.5%	N = 34; 87.2%	
Comprehensibility. Good	0%	5.3%	0%	33.3%	8%	6.9%	3.2%	0%
		N = 1; 2.8%	N = 1; 11.1%	N = 1; 11.1%		N = 8; 7.1%	N = 1; 2.6%	
Manageability. Bad	0%	0%	0%	0%	0%	2.8%	0%	0%
		N = 0; 0%	N = 0; 0%	N = 0; 0%		N = 2; 1.8%	N = 0; 0%	
Manageability. Fair	100%	84.2%	83.3%	33.3%	72%	87.5%	80.6%	100%
		N = 31; 86.1%	N = 6; 66.7%	N = 6; 66.7%		N = 94; 83.2%	N = 33; 84.6%	
Manageability. Good	0%	15.8%	16.7%	66.7%	28%	9.7%	19.4%	0%
		N = 5; 13.9%	N = 3; 33.3%	N = 3; 33.3%		N = 17; 15%	N = 6; 15.4%	
Meaningfulness. Bad	0%	0%	0%	0%	0%	1.4%	0%	0%
		N = 0; 0%	N = 0; 0%	N = 0; 0%		N = 1; 0.9%	N = 0; 0%	
Meaningfulness. Fair	87.5%	73.7%	83.3%	66.7%	64%	66.7%	61.3%	50%
		N = 30; 83.3%	N = 7; 77.8%	N = 7; 77.8%		N = 74; 65.5%	N = 23; 59%	
Meaningfulness. Good	12.5%	26.3%	16.7%	33.3%	36%	31.9%	38.7%	50%
		N = 6; 16.7%	N = 2; 22.2%	N = 2; 22.2%		N = 38; 33.6%	N = 16; 41%	

Table 3
Descriptive results of the questionnaires.

RSES.		GHQ-12.			PAQ-A.	
High self-esteem	55.8%	Emotional disorder	86.3%		Sedentary	15.7%
Intermediate self-esteem	24.4%	Normal self-perception	13.7%		Moderate activity	65.5%
Low self-esteem	19.8%	Cronbach's α	0.075%		Vigorous activity	18.8%
Cronbach's α	0.874			Perceived self-value	Confidence	Concern
		Good	71.1%	49.7%	51.3%	Cronbach's α
		Fair	27.9%	50.3%	48.7%	0.734%
		Bad	1%	0%	0%	
		Cronbach's CE	0.698%	0.717%	0.460%	
		Bartlett's test of sphericity		sig: 0.000		
		Kaiser-Meyer Olkin test for sampling adequacy (KMO)		0.812		
		Chi-squared		34.222		
	Eating habits	Body Image	HBSC	Violence	Positive Health	HBSC Total
Bad	20.8%	1.5%	Sleep	0.5%	5.1%	7.1%
Fair	59.9%	37.1%	52.8%	1.5%	45.2%	58.9%
Good	19.3%	61.4%	8.6%	98%	49.7%	34%
Cronbach's α			0.890%			
		SOC-13	Comprehensibility	Manageability	Meaningfulness	
Bad		1.5%	27.9%	1%	0.5%	
Fair		81.2%	66.5%	83.2%	68%	
Good		17.3%	5.6%	15.7%	31.5%	
Cronbach's α		0.786%	0.637%	0.430%	0.658	
Bartlett's test of sphericity				sig: 0.000		
KMO				0.767		
Chi-Squared				28.781		

rest hours. It is worth noting that 2% of young people had suffered or generated some form of violence. 94.9% of the adolescents reported good or fair positive health. The total HBSC score showed that 58.9% of adolescents had a fair lifestyle.

In the SOC-13 questionnaire, 81.2% of young people rated their coping with traumatic situations as fair. If analyzed by subscales, the worst results were expressed regarding comprehensibility, with 27.9% of people unable to understand and cope with traumatic situations, followed by manageability, which offers a majority percentage of 83.2% with a fair score. The meaningfulness subscale was the one with the best score, with 31.5% of respondents.

3.3. Correlations between questionnaires

The RSES showed positive correlations with the perceived self-value subscale, meaning that the greater the adolescent's self-concept, the greater their perception of personal value (0.538). There seemed to be a negative correlation with the HBSC (-0.351) and with the SOC-13 (-0.363). The same happened with its subscales: in the HBSC, eating habits, body image, and positive health, with -0.173, -0.4, and -0.459, respectively; and in the SOC-13, in its subscales, i.e. comprehensibility, manageability, and meaningfulness, with -0.383, -0.211, and -0.325, respectively. The greater the self-concept, the worse the lifestyle and the coping strategies in the face of traumatic agents.

The GHQ-12 showed that when self-perception improved, the perception of self-value and physical exercise worsened, with a significant correlation of -0.187 and -0.146. The sense of internal coherence related to coping with traumatic situations improved when the individual's self-perception increased by 0.174. Something similar occurred in the confidence and concern subscales. There was a positive correlation between lifestyle and the SOC-13. In the perceived self-value subscale,

negative correlations were found with the HBSC and the SOC-13, at -0.289 and -0.296, respectively.

The PAQ-A was positively related to body image by 0.173, as well as to improved positive health of adolescents by 0.166. Therefore, a healthy lifestyle was associated with the performance of physical activity. The greater the self-concept and self-perception, the worse the physical exercise habits by -0.098 and -0.146.

The HBSC was related to coping with traumatic situations, in terms of knowing how to understand, manage and give meaning to difficulties by 0.230, 0.275, 0.210, and 0.214, respectively.

From the SOC-13, the above-mentioned relationships with respect to the other questionnaires were drawn. Certainly, there was a positive and significant correlation with its subscales at 0.493, 0.640, and 0.462.

3.4. Hypothesis testing

Table 5 describes the hypothesis tests for each questionnaire according to age, sex, and university degree. In the age analysis, the median was 20 years. The Student *t* test was performed for age and sex. The Kruskal Wallis test was used for the university degree, as it allows for the analysis of non-homogeneous groups due to the differences that exist between students in their first and fourth year of studies.

The Student *t* test rejected the null hypothesis for age in the positive health subscale, in the SOC-13, and in the comprehensibility and manageability subscales. The same did not happen when analyzed by sex, as the null hypothesis was only rejected in the meaningfulness subscale.

The Kruskal Wallis test shows the average range where the sample is larger. There were significant differences in the RSES, the HBSC, and the positive health and comprehensibility subscales. Self-perception and lifestyle did not seem to be influenced by the adolescents' academic year or level of knowledge.

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Table 4

Correlations.

	RSES	GHQ-12	Perceived self-value	Confidence	Concern	PAQ-A	HBSC	Eating habits	Body Image	Sleep	Violence	Positive Health	SOC-13	Comprehensibility	Manageability	Meaningfulness
RSES	1															
GHQ-12	C. Pearson Sig. (bilateral) -0.098	1														
Perceived self-value	C. Pearson Sig. (bilateral) .538*	-0.187*	1													
Confidence	C. Pearson Sig. (bilateral) -0.107	0.008	-0.056	1												
Concern	C. Pearson Sig. (bilateral) 0.136	0.024	0.434	0.340*	1											
PAQ-A	C. Pearson Sig. (bilateral) 0.943	0.112	0.824	0.000	0.340*	1										
HBSC	C. Pearson Sig. (bilateral) 0.558	-0.042	-0.146†	-0.018	0.019	0.140	1									
Eating habits	C. Pearson Sig. (bilateral) 0.000	0.333	0.000	0.000	0.309	0.051	0.590*	1								
Imagen	C. Pearson Sig. (bilateral) 0.015	0.267	0.009	0.169†	0.007	0.015	0.835	0.000	1							
Corporal	C. Pearson Sig. (bilateral) -0.400*	-0.033	-0.210*	0.189*	0.127	0.173†	0.574*	0.336*	0.336*	1						
Sleep	C. Pearson Sig. (bilateral) 0.000	0.643	0.003	0.008	0.076	0.015	0.000	0.000	0.037	1						
Violence	C. Pearson Sig. (bilateral) 0.637	0.977	0.578	0.403	0.955	0.349	0.000	0.099	0.606	0.037	1					
Positive Health	C. Pearson Sig. (bilateral) 0.924	0.054	-0.142†	0.137	0.132	0.053	0.203*	-0.046	0.104	-0.022	0.195*	1				
SOC-13	C. Pearson Sig. (bilateral) 0.000	0.169	0.000	0.002	0.105	0.166†	0.625*	0.276*	0.319*	0.144†	0.006	0.301*	1			
Comprehensibility	C. Pearson Sig. (bilateral) 0.000	0.174†	-0.296*	0.262*	0.224*	-0.085	0.230*	0.148†	0.228*	0.026	0.053	0.301*	0.493*	1		
Manageability	C. Pearson Sig. (bilateral) 0.000	0.015	0.000	0.000	0.002	0.238	0.001	0.037	0.001	0.716	0.460	0.000	0.435*	0.435*	1	
Meaningfulness	C. Pearson Sig. (bilateral) 0.003	0.989	0.027	0.002	0.103	-0.027	0.275*	0.140†	0.207*	0.182†	0.045	0.333*	0.000	0.000	0.000	1
	C. Pearson Sig. (bilateral) -0.325*	0.114	-0.230*	0.136	0.199*	0.003	0.214*	0.313	0.044	0.087	0.465	0.000	0.000	0.000	0.000	0.225*
	C. Pearson Sig. (bilateral) 0.000	0.112	0.001	0.056	0.005	0.971	0.003	0.243	0.031	0.759	0.214	0.000	0.000	0.000	0.001	0.001

*Correlation is significant at the .01 level (bilateral).

†The correlation is significant at the .05 level (bilateral).

Table 5
Hypothesis testing.

	Age				Sex				Kruskal Wallis		
	Age	Sample	Mean	Student's <i>t</i> test	Sex	Sample	Mean	Student's <i>t</i> test	Year	Range	Sig.
RSES	<20	110	1.79	0.00	Male	45	1.62	0.86	1st year	103.89	0.018
	>20	87	1.44	0.00	Female	152	1.64	0.86	4th year	83.81	
GHQ-12	<20	110	2.00	0.38	Male	45	2.00	0.09	1st year	99	1
	>20	87	2.00	0.37	Female	152	2.00	0.07	4th year	99	
<i>Confidence</i>	<20	110	0.48	0.51	Male	45	0.48	0.83	1st year	97.76	0.534
	>20	87	0.52	0.51	Female	152	0.50	0.83	4th year	102.85	
<i>Perceived self-value</i>	<20	110	0.35	0.07	Male	45	0.28	0.86	1st year	102.29	0.07
	>20	87	0.22	0.06	Female	152	0.30	0.86	4th year	88.78	
<i>Concern</i>	<20	110	0.50	0.69	Male	45	0.42	0.32	1st year	99.92	0.645
	>20	87	0.47	0.69	Female	152	0.50	0.32	4th year	96.15	
PAQA	<20	110	1.00	0.41	Male	45	1.13	0.18	1st year	99.31	0.874
	>20	87	1.06	0.41	Female	152	1.00	0.18	4th year	98.04	
HBSC	<20	110	1.20	0.06	Male	45	1.37	0.15	1st year	94.90	0.041
	>20	87	1.35	0.06	Female	152	1.23	0.13	4th year	111.73	
<i>Eating habits</i>	<20	110	1.00	0.70	Male	45	0.93	0.53	1st year	96.48	0.213
	>20	87	0.96	0.70	Female	152	1.00	0.53	4th year	106.81	
<i>Body image</i>	<20	110	1.56	0.28	Male	45	1.64	0.50	1st year	98.08	0.638
	>20	87	1.64	0.28	Female	152	1.58	0.48	4th year	101.85	
<i>Sleep</i>	<20	110	0.62	0.06	Male	45	0.84	0.07	1st year	96.93	0.315
	>20	87	0.79	0.06	Female	152	0.65	0.11	4th year	105.42	
<i>Violence</i>	<20	110	1.96	0.35	Male	45	1.97	0.89	1st year	99.01	0.981
	>20	87	1.98	0.32	Female	152	1.97	0.88	4th year	98.96	
<i>Positive health</i>	<20	110	1.35	0.01	Male	45	1.53	0.26	1st year	94.05	0.015
	>20	87	1.56	0.01	Female	152	1.42	0.21	4th year	114.35	
SOC-13	<20	110	56.40	0.00	Male	45	1.13	0.65	1st year	99.44	0.780
	>20	87	60.85	0.00	Female	152	1.16	0.61	4th year	97.65	
<i>Comprehensibility</i>	<20	110	18.60	0.01	Male	45	0.80	0.74	1st year	94.7	0.024
	>20	87	20.64	0.01	Female	152	0.76	0.73	4th year	112.33	
<i>Manageability</i>	<20	110	17.35	0.01	Male	45	1.17	0.54	1st year	97.78	0.414
	>20	87	18.82	0.00	Female	152	1.13	0.54	4th year	102.78	
<i>Meaningfulness</i>	<20	110	20.43	0.12	Male	45	1.17	0.03	1st year	96.99	0.280
	>20	87	21.37	0.11	Female	152	1.34	0.01	4th year	105.25	

4. Discussion

The adolescents studied did not show overall good health habits. No significant differences were found between 1st and 4th-year students, which seems to indicate that the knowledge acquired did not have an impact on their lifestyle. Females seemed to take worse care of themselves than males. As the sample size guaranteed representativeness for Nursing students in this context, these results pose a serious problem, given that health education is included in the competences of these future professionals. In other words, educators do not practice healthy lifestyles. Compared to the general population, the female population was over-represented and had a higher level of education and health literacy than the general population. It is reasonable to think that increased knowledge does not imply better health habits.^[3-14]

The RSES showed generally negative results. 44.2% of the young people surveyed had a low self-concept (less than 25 points at RSES). Hence, this is a significant problem. Males showed a decrease in their self-concept as their level of knowledge increased. On the contrary, among females, the RSES shows better results in the 4th year. Moleró et al pointed out that self-concept decreases with age^[9]; there is an inverse or negative correlation with lifestyle and SOC-13. This means that young people neglect their lifestyle-related health when their self-concept increases. This has been observed in the worsening of eating habits, body image, and positive health, among other factors.

The GHQ-12 was assessed through its subscales because, as can be seen in Table 2, when analyzed according to the score described by its author, the majority of respondents had emotional disturbance (score greater than or equal to 12 on the

GHQ-12). Perceived self-value improved considerably as academic progress was made (Score less than 5 on the value perception subscale), but confidence decreased (Score greater than 7 on the confidence subscale). These data are noteworthy in similar research, which demonstrated that the level of confidence and self-perception of the person worsened with the passing of years.^[30,60,64] On assessing the GHQ-12 in relation to the rest of the variables, the greater the self-perception, the worse the feeling of self-value and the greater the sedentary lifestyle (score below 2 in the PAQ-A). This could indicate an erroneous or transitory feeling of good self-perception, because if healthy habits are neglected over time, health will worsen. Ronulfo Luna et al identified this in their study, where it was found that a good perception of body image led to the individual neglecting healthy eating habits.^[5]

The level of physical exercise measured using the PAQ-A questionnaire identified an intermediate level of activity in 65.5% of respondents (between 3 to 4 points in the PAQ-A). It should be noted that the percentage of people who did not do any sport and/or were sedentary was 15.7% (score less than 2 in the PAQ-A). Although women were more sedentary, as they progressed in knowledge, they maintained a moderate level of physical activity. In males, however, 4th-year students were more sedentary than 1st-year students. Other studies claim that there is an association between sedentary behavior, psychological discomfort, and improved self-esteem, self-concept, and self-perception.^[28,29] The present research shows the existence of negative correlations between the PAQ-A, the RSES, and the GHQ-12, as well as regarding their subscales, except for the concern variable. This fact would show that young people with high self-concept and self-perception neglect physical exercise.

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It could also indicate that they do not value their body image due to personal acceptance and/or little involvement in improving their physical activity. Indeed, many women are put off by certain physical activities because of stereotypes, insecurities around body image, or negative cultural acceptance.^[67] Ruiz Ariza et al reported that it was men who were most attracted to exercising.^[31] This might be influenced by the fact that 77.1% of the sample were women.

Regular healthy habits were identified in 58.9% of the participants (HBSC score between 5 to 7). The data collected on diet were considered inadequate, as 20.8% stated that their nutrition habits were poor (Score less than 2 points on the Food subscale). This compares with 1.5% who felt bad about their body image (Score less than 2 points on the body image subscale). These results may imply that adolescents have a distorted perception of their physical appearance and/or that their self-perception is high and is not affected by an inadequate lifestyle. This last point seems to be contradictory, since 55.8% had moderate-low self-esteem (less than 29 points in the RSES). Elveny Laguado et al, in a population of nursing students, reported a high percentage of overweight and obesity and demonstrated the existence of unhealthy and repetitive behaviors.^[5] It can be stated that there are similarities between the sample in this research and that of other studies. Only 8.6% got enough rest (score higher than 6 on the sleep subscale). 2% of the sample reported having suffered/generated some kind of violence (score less than 7 on the violence subscale). Also, nursing students were asked about their awareness about healthy lifestyle habits and how these affect their physical and mental health, and act accordingly (score greater than 5 on the Positive Health subscale). 94.9% stated that their health was good or fair. It is significant that adolescents do not perceive the poor figures they obtain in self-concept, physical exercise, diet, sleep, and violence as reflected in their health.

The SOC-13 showed that 81.2% of young people had a fair sense of internal coherence related to coping with traumatic situations (score between 9 and 17 points on the SOC-13). In its subscales, comprehensibility, manageability and meaningfulness, something similar was found, with 66.5% (score between 5 to 7 on the comprehensibility subscale), 83.2% (Score between 3 to 5 on the manageability subscale) and 68%, respectively (Score between 3 to 5 on the significance subscale). With academic progress, a tendency towards worsening was observed, especially in females. The SOC-13 was negatively correlated with the RSES, the GHQ-12, and the PAQ-A. Improvement in coping would be expected if self-concept, self-perception, and physical activity also improved. This negative correlation could be related to avoidance behaviors towards coping and maturational development on the part of young people.

5. Conclusion

Data obtained on self-concept, self-perception, physical exercise, and lifestyle of 1st and 4th-year Nursing students have been described and compared in the present study. Similarities have been found with other previous studies,^[3,4,61] where women had the worst data on self-concept, self-perception, and physical exercise. Health science students do not apply the knowledge they have acquired to their own benefit. Being able to educate and prevent harmful behaviors would promote general health, resulting in a longer-living population, a better quality of life, and a lower economic impact on health, among others. The promotion of physical exercise and healthy lifestyles is ineffective. It is necessary to promote and support studies that explore improvements in the health of young people because their behavior will be perpetuated in adulthood. This is even more important in the case of future health professionals such as Nursing students. Learning to take care of oneself in order to be able to care for others is considered fundamental.

6. Limitations

Convenience sampling and the cross-sectional nature of this research could be possible biases. It should be noted that the results point to associations, but do not allow establishing cause-effect relationships as it is a cross-sectional study.

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