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ORIGINAL

THE RELATION OF PHYSICAL SELF-CONCEPT, ANXIETY, AND BMI AMONG MEXICAN UNIVERSITY STUDENTS

RELACIÓN ENTRE AUTOCONCEPTO FÍSICO, ANSIEDAD E IMC EN ESTUDIANTES UNIVERSITARIOS MEXICANOS

Linares-Manrique, M.¹; Linares-Girela, D.²; Schmidt-Rio-Valle, J.³; Mato-Medina, O.⁴; Fernández-García, R.⁵; and Cruz-Quintana, F.⁶

¹ Adjunct Instructor. University of Granada (Spain). E-mail: mlinar@ugr.es

² Permanent Professor. University of Granada (Spain). E-mail: dlinares@ugr.es

³ Lecturer. University of Granada (Spain). E-mail: jschmidt@ugr.es

⁴ Permanent Professor. University Autónoma del Carmen (Campeche - México). E-mail: omato@pampano.unacar.mx

⁵ Lecturer. University of Almería (Spain). E-mail: rubenfer@ual.es

⁶ Permanent Professor. University of Granada (Spain). E-mail: fcruz@ugr.es

Spanish-English translators: Ignacio Garrido Manrique. E-mail: i.garrido.manrique@gmail.com

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ABSTRACT

The purpose of this paper is to know and relate the results of the various dimensions formed by the physical self-concept with respect to the different types of anxiety and the BMI among nursing and physical education students in the area of the Yucatán peninsula in Mexico. The study is based on a sample of 264 people, being 91 men and 173 women between the ages of 18 and 25. The outcome shows that the values obtained by physical education students are

higher than those obtained by nursing students regarding the physical self-concept. Nursing students present a higher level of anxiety compared to physical education students. The perception showed by junior and senior students with regard to almost all dimensions of self-concept is higher than that of freshmen and sophomore students. Anxiety level among students decreases throughout the years.

KEY WORDS: Physical Self-concept; Anxiety; Obesity; Physical education; Nursing

RESUMEN

El propósito de la investigación es conocer y relacionar los resultados del autoconcepto físico, con diferentes tipos de ansiedad y el IMC en los estudiantes de enfermería y educación física de la península de Yucatán (México). La muestra estuvo formada por 264 participantes, de los cuales 91 eran varones y 173 mujeres, con edades comprendidas entre 18 y 25 años. Nuestros datos revelan que en el autoconcepto físico, los valores obtenidos por los estudiantes de educación física son superiores al de los estudiantes de enfermería. Los estudiantes de enfermería presentan mayores valores de ansiedad estado que los de educación física. La percepción que tienen los estudiantes de ciclos superiores en prácticamente todas las dimensiones del autoconcepto es superior a la del alumnado de ciclos inferiores. Los niveles de ansiedad disminuyen conforme pasan de ciclos inferiores a superiores.

PALABRAS CLAVE: Autoconcepto físico, ansiedad, obesidad, educación física, enfermería

INTRODUCTION

Self-concept is a process that shows an irregular pattern described by periods of personal balance and unbalance which are characteristic of life cycle. Some authors (Cruz and Maganto, 2002; Esnaola, Goñi and Madariaga, 2008) have pointed out that Self-concept is a matter of great importance for the development of personality; it provides individual and social benefits; it is very relevant for certain stages of life such as adolescence in which people are still developing their personalities: a positive Self-concept at this stage helps to strengthen a healthy behavior and reach a fulfilling life.

Self-concept emotional and social dimensions have already been researched with respect to Anxiety (Beltrán Martínez, 2014; Limonero, Sábado, and Fernández-Castro, 2006) as well as the positive relationship between Self-concept and social support. The higher the social support is the greater the Self-concept becomes (Torres, Pompa, Meza, Ancer and González, 2010). However, one of the Self-concept dimensions that lately became relevant is the Physical Self-concept (PSC). This factor refers to the perception of the own physical appearance and physical condition; it is considered as a fundamental factor when it comes to the development of our lifestyle. Nowadays PSC takes a role in the theoretical models of Self-concept. The four-dimensional model is the more relevant of all and includes the Physical Skills dimension, Physical Condition, Physical Appeal and Strength (González Fernández, 2011).

Many researches have been carried out on PSC according to countless factors (Molero, Zagalaz and Cachón, 2013) such as quality of life (Huebner, 2004); educational achievement among special needs individuals and regular people (Gómez-Vela, Verdugo and González-Gil, 2007); lifestyles (Rodríguez, Goñi and Ruiz de Azúa, 2006); physical activity performance and the positive relationship between physical performance and PSC (Dieppa, Machargo, Lujan and Guillen, 2008; García, Marín and Bohórquez, 2012; Alvariñas and González, 2004; Candel, Olmedilla and Blas, 2008); gender and age (Guillén and Ramírez, 2011; Fuentes, García, Gracia and Lila, 2011; Infante Goñi and Villarroel, 2011). A high Self-concept means individuals who perceive themselves as physically attractive, and who take care of themselves and successfully practice some sports. Those who do not perceive themselves as such have a low Self-concept.

PSC has a positive correlation with the perception of health, self-control, perception of wellbeing, sport achievement, motivation and achievement, social and school integration (Herrero, 1994; Gracia, Herrero and Musitu, 1995; Ayora, 1997). On the other hand, PSC has a negative correlation with academic failure, anxiety, and, to a lesser extent, problems with peers (Cava, 1998). In spite of the latest being a psychological factor that has been studied for a long time with regard to any paradigm in the field (Arruza, González, Palacios, Arribas and Cechini, 2012), few researches have been carried out regarding Anxiety and, to a lesser extent, with death anxiety. We have not found any research which relates PSC with death anxiety.

Anxiety is an emotional response or response pattern which includes unpleasant, apprehensive and tense cognitive aspects; physiological aspects which stimulate the autonomic nervous system as well as certain aspects of the motor system that usually imply some insufficiently adjusted and scarcely adaptive behaviors. Anxiety response may be elicited by external and situational stimuli along with internal stimuli such as thoughts, ideas and/or images which are perceived as dangerous or threatening by the subject (Sandín, 1997). A certain degree of Anxiety is desirable though since it helps improve achievement; however, when Anxiety exceeds certain limits, achievement decreases due to activity impairment (Cano-Vindel, 2011; Cano-Vindel and Miguel-Tobal, 2001).

International prevalence of anxiety disorders among people in general is quite variable according to epidemiological reports published to date. Outcomes obtained in different countries vary. Somers, Goldner, Waraich and Hsu, (2006) suggest that data range from 10.6 % to 16 % taking into consideration several factors related to the heterogeneous nature of the different types of anxiety, including diagnostic criteria, diagnostic tools, sample size, countries researched, and the response rate.

However, these emotional disorders are quite common and have the highest prevalence at primary care practices (Cano-Vindel, 2011). In Spain, an 18.5 % of primary care patients have an anxiety disorder of some sort, and a 13.4 % have a depressive disorder according to diagnostic interviews carried out for that purpose. Nevertheless, the use of a screening test based on the self-report method shows different data: 25.6 % and 35.8 % respectively (Cano-Vindel, Salguero, Wood, Dongil and Latorre, 2012). Prevalence is higher among women than men in both Mexican and Spanish population (Candel, Olmedilla and Blas, 2008; Haro *et al.* and Grupo ESEMeD-España, 2006; Virgen, Lara, Morales and Villaseñor, 2011). Most of the people develop such disorders during childhood or at the beginning of adulthood although that might happen at any point in life. Therefore, an early intervention using effective techniques, such as the practice of physical activity, would greatly reduce the negative impact on quality of life (Cano-Vindel, 2011).

Death is an anxiety inductor factor that appears during adolescence as an everyday life experience. Death anxiety can be defined as an emotional reaction to some perceptions of real or unreal danger or threat signals when it comes to the own or the other's existence (Limonero, 1997). Some authors like López- Castedo, Sueiro and López-García (2004) point out that young people, as opposed to adults, experience death anxiety to a greater extent. In fact, fear of death is considered as the most common fear among young people (Bhatti, Khalid, Zakaria and Afridi, 2011; Burkhardt, Loxton, Kagee and Ollendick, 2012; Caballo *et al.*, 2006; Valiente, Sandin, Chorot and Tabar, 2003). In particular, death anxiety together with risk factors related to Anxiety in general, has been related to the idea of suicide that is frequently present among adolescents and young people which is a major public health concern these days (Au, Lau, and Lee, 2009). According to many studies, people with a low Self-concept, and especially with a low self-esteem, have a tendency to develop behaviors of fear, hesitation and defense mechanisms (Beltrán Martínez, 2014). Many studies

also show that a low Self-concept is related to various psychosocial disorders such as depression (Dave and Rashad, 2009), stress (Madge *et al.*, 2011), and psychopathological symptoms (Garaigordobil, Pérez, and Mozaz, 2008).

Generally speaking, Anxiety is perceived as one of the most important factors that affect a negative perception of quality of life; self-image and self-esteem are also important for the perception of psychological wellbeing (Candel, Olmedilla, and Blas, 2008). Anxiety seems to directly affect mental health at certain stages of life such as adolescence (Axelsson and Ejlertsson, 2002; Bagley and Mallick, 2001); a high level of anxiety might anticipate emotional issues related to some pathology associated with pathogenic elements, suggesting a pattern known as negative emotion (Candel, Olmedilla, and Blas, 2008; Sánchez, Aparicio and Dresch, 2006). The development of self-esteem is normally related to the individual's inner own acceptance as well as physical wellbeing aspects and the perceived competence (Fox, 2000).

Obesity is another factor that is usually related to Anxiety and Self-concept. Obesity is defined as the interaction of a series of genetic, environmental and lifestyle factors. It can also be defined by the percentage of body fat, body mass index (BMI) or defined accordingly to social standards. Obesity is often associated with psychological and social disorders such as low self-esteem and low Self-concept, feeling of inferiority, no ability to control impulses, depression, antisocial behaviors or inactivity (Mata *et al.*, 2011; Silva *et al.*, 2008). Many studies have shown that people with a high BMI or obese people show a low Self-concept (Adams and Bukowski, 2008; Cilliers, Senekal, and Kunneke, 2006; Jelalian, Sato, and Hart, 2011; Wallander *et al.*, 2009). Individuals with a low physical condition and high BMI, waist circumference, and a fat percentage show a low Self-concept, in particular on physical self-perception (Du Toit, Venter and Potgieter, 2005; Mitchell, Moore, Bibeau and Rudasill, 2012) and emotional self-perception (Eddy *et al.*, 2013).

Some authors point out that anxiety symptoms and eating disorders increase to the extent that BMI increases too (Collipal, Silva, Vargas, and Martínez, 2006). Obese adolescents are supposedly at greater risk for developing eating disorders (Doyle, Grande, Golschmidt, and Wilfley, 2007; Goldschmidt, Passi, Sinton, Tanofsky-Kraff and Wilfley, 2008) and emotional disorders such as depression (Reilly *et al.*, 2003); Anxiety (Eremis *et al.*, 2004; Scott, 2008); and teasing among peers (Neumark-Sztainer *et al.*, 2002). Obese adolescents who develop eating disorders present specific factors such as weight concern and body image potentially higher than normal weight controls (Tanofsky-Kraff *et al.*, 2006).

Díaz Castillo (2013) states that women with eating disorders significantly show higher levels of death fear than those who do not have an eating disorder. Similarly, they also tried to avoid that fear. Also, they also showed an escape mechanism of acceptance toward death, i.e., death is seen as an easing the burden of life. Therefore, death will complete life and release them; it will provide an escape from this world of misery. Consequently, the suicidal behavior appears. Despite the fact that women with eating disorders have death fear and try to avoid it, they may also wish to die.

Anxiety symptoms among young obese people are related to a decreasing of physical activity and an increasing of eating as a response to stress. Weight and body image concern, low self-esteem and Anxiety are supposedly perpetuating obesity and act as a barrier to achieve losing weight (Calderón, Forns and Varea, 2009; Tapia, 2006).

The aspects related to PSC regarding Anxiety, obesity and death have not been sufficiently studied according to our research. Therefore, this research will focus on the purpose of knowing and relating the different types of Anxiety and BMI among nursing and physical education students of the UNACAR (Mexico).

OBJETIVES

The objectives are as follows:

- Determining and comparing PSC and levels of Anxiety among nursing and physical education UNACAR students.
- Determining and comparing PSC and levels of Anxiety among UNACAR students according to their university course.
- Determining and comparing PSC and levels of Anxiety among UNACAR physical education students according to their gender.
- Relating factors as PSC, anxiety, and body mass index among UNACAR nursing and physical education students.

MATERIAL AND METHODOLOGY

Participants

The sample was selected on the basis of the following criteria: a) age over 17 and lower than 25 years old, b) native, and third generation at least, native from the Yucatan peninsula in Mexico including the states of Campeche, Quintana Roo, Yucatan and Chiapas which have a strong Mayan identity.

Taking account of the unalike number of students registered at the UNACAR School of Physical Education and Nursing School, and with the purpose of comparing homogeneous groups in number of participants, a decision was made for the sample to be as follows: 1) the Physical Education sample will be made up by the 130 students pursuing the Physical Education degree and who comply with the requirements of age and origin; 2) the Nursing sample will be made up by only 57 % of a total of 235 students pursuing the Nursing degree and complying with the same requirements of age and origin. The nursing participants were randomly selected by clusters from each of the four cycles during that specific semester (Table 1).

Table 1. Sample distributed by gender, degree and course.

Degree	Course 2		Course 4		Course 6		Course 8		Total	%
	♂	♀	♂	♀	♂	♀	♂	♀		
Physical Ed.	21	14	15	18	16	15	15	16	130	100%
Nursing	4	33	5	28	7	25	8	24	134	57%
Total (♂-♀)	25	47	20	46	23	40	23	40	264	72.3%
Total Course	72		66		63		63		264	

Women made up a 65.5 % of the sample while men made up a 34.5 %; these figures are proportional to the number of students enrolled for each degree. The number of female and male physical education students is quite similar: 51.5 % are men and 48.5 % are women. On the other hand, the number of men and women enrolled at the Nursing School is quite different: 82.1 % are women, and only a 17.9 % are men.

Procedure

UNACAR and every participant were previously given an informed consent to their participation on this research. Data was collected in several days but on the same environment, same time. It was coordinated by the same researchers who carefully facilitated the questionnaire instructions. Participants answered the questions anonymously and voluntarily afterwards.

Tools

An individual and semi-structured **ad hoc questionnaire** was made (Annex 1) including questions on socio demographical, personal, education and physical activity aspects comprising the following data: sex, age, course enrolled, semester, daily physical activity as well as the place of birth of the participants, and their parents' and grandparents' place of birth too. The participants were all weighted and measured in order to obtain their BMI.

Self-concept was evaluated by using the **Physical Self-concept Questionnaire (PSQ)** developed by Goñi, Ruiz de Azúa and Rodríguez, (2006). It is made up of 36 items comprising six sub scales or dimensions, and four main sub scales: Physical Skills (PS); Physical Condition (PC); Physical Appeal (PA); and Strength (S) besides two more sub scales: General Physical Self-concept (GPSC) and General Self-concept (GSC), both considered so far as the average of the total score of the first four sub scales above mentioned. The questionnaire is based on the five levels Likert-type scale: False = 0; Almost never true = 1, Occasionally true= 2; Almost always true = 3, True = 4.

Anxiety was evaluated by using the **State-Trait Anxiety Questionnaire (STAI)** developed by Spielberger, Gorsuch and Lushene (1982); it is the most used and accepted questionnaire on Anxiety despite the fact that it is becoming old (Muñiz and Fernández-Hermida (2010); Guillén and Buela (2011)). It is made up of two sub scales which measure two different anxiety concepts: state and trait. Each of one is comprised of a four levels Likert-type scale. The trait sub scale has responses as follows: Rarely = 0; Occasionally = 1; Frequently = 2 and

Very frequently = 3. The state sub scale has responses as follows: Nothing = 0; Something = 1; Sufficient = 2; and, A lot = 3.

Death Anxiety Scale developed by Templer (1970) has been adapted by Rivera and Montero in Mexico in 2010, and comprised 15 items based on a Likert-type scale with answers that go from 1 to 4, being 15 the lowest value and 60 the maximum value.

Data Analysis

Cronbach's alpha coefficient was used to analyze the internal consistency of the tools used. We used a descriptive analysis on all variables used in carrying out this research.

The Wilcoxon signed-rank test was used to determine the existence or non existence of significant differences among variables due to the lack of a normal distribution among them. The fact that there were more women than men among nursing students led to establish a comparison by sex in relation to other variables used for the physical education students.

Existing relations among variables were obtained by the Spearman's rank correlation coefficient.

We used the SPSS 20.0 for the analysis of data.

RESULTS

All tools were subjected to a reliability analysis by using Cronbach's alpha coefficient. The PSQ's reliability is 0,935; STAI's reliability for TA is 0,856, and for SA is 0,871; for Templer's scale is 0,888.

The participant's BMI is shown in Table 2. There are significant statistical differences depending on their degree. This is because such differences are due to the extreme values of BMI. None of the physical education students is obese.

Table 2. Absolute and relative frequencies of BMI according to gender and degree in accordance with the WHO.

CLASIFICACION	BMI	NURSING				PHYSICAL EDUCATION			
		♂		♀		♂		♀	
		N=24	%	N=110	%	N=67	%	N=63	%
<i>Low weight</i>	<18.50	-		2	1,8	4	6	2	3.2
<i>Normal weight</i>	18.50 – 24.99	18	75	64	58.2	49	73.1	57	90.5
<i>Overweight</i>	25 – 29.99	5	20.8	26	23,6	14	20.9	4	6.3
<i>Obesity</i>	≥30	1	4,2	18	16.4	-		-	

Similarly, there are significant statistical differences ($p = 0,000$) with respect to the daily physical activity of the participants according to their degree. Physical

education students spend an average of 175.2 ± 45.6 minutes a day as opposed to nursing students who spend a daily average of 46.8 ± 38.4 minutes as part of their degree curriculum.

Physical self-concept and Anxiety. Physical Education vs Nursing

There are significant statistical differences between PSC and Anxiety comparing both groups of students for all PSQ dimensions ($p = 0,000$) but for the GSC ($p = 0,083$) in which there is no difference between nursing and physical education students.

We find significant statistical differences for the TA ($p=0,000$) by contrasting both groups considering all anxiety dimensions. Nursing students are those who show higher absolute scores. No statistical differences for the TA were found, not even for Anxiety coping with Terminal Illness (Table 3).

Table 3. Physical Self-concept and Anxiety Assessment for the various dimensions according to the degree. Comparison by degrees.

		Total N=264	Trait	Nursing N=134	Trait	Ph .Ed. N=130	Trait	Z	P	SS
Physical Skills	Avge	16.05	0	13.72	0	18.45	6	-6.96	0,000	***
	SD	5.54	24	5.10	24	4.94	24			
Physical Condition	Avge	14.37	0	12.22	0	16.58	4	-6.22	0,000	***
	SD	5.72	24	5.55	24	5.02	24			
Strength	Avge	13.58	0	11.97	0	15.24	5	-5.39	0,000	***
	SD	4.88	24	5.34	24	3.71	24			
Physical ApPeal	Avge	16.16	0	14.17	0	18.20	8	-5.57	0.000	***
	SD	5.67	24	5.97	24	4.54	24			
Gen. Ph. Self-consciousness	Avge	16.61	0	15.02	0	18.24	10	-4.27	0.000	***
	SD	5.52	24	6.09	24	4.32	24			
Self-consciousness	Avge	16.37	5	15.91	5	16.84	6	-1.73	0,083	NSS
	SD	4.64	24	4.75	24	4.50	24			
Anxiety State	Avge	19.02	1	20.57	3	17.43	1	-2.60	0,009	**
	SD	8.86	46	9.35	46	8.05	35			
Anxiety Trait	Avge	21.36	3	21.25	3	21.47	6	-0.28	0,777	NSS
	SD	9.25	49	9.47	49	9.07	44			
Anxiety coping with Term. Illness	Avge	27.89	15	27.59	15	28.20	15	-0.08	0,934	NSS
	SD	9.47	57	8.58	53	10.34	57			

(n/s) $p > 0,05$; (*) $0,05 > p > 0,01$ (**) $0,01 > p > 0,001$ (***) $0,001 > p$

Physical Self-concept and Anxiety. University First Two Years vs Last Two Years

Tabla 4. Physical Self-concept and Anxiety Assessment for the various dimensions according to the cycle. Comparison between higher and lower cycles.

<i>Factor</i>		<i>Total N=264</i>	<i>Cycles 2-4 N=138</i>	<i>Trait</i>	<i>Cycles 6-8 N=126</i>	<i>Trait</i>	<i>Z</i>	<i>P</i>	<i>SS</i>
Physical Skills	Avge	16.05	14.70	0	17.52	6	-3,868	0,000	***
	SD	5.54	5.60	24	5.10	24			
Ph. Condition	Avge	14.37	13.25	0	15.60	4	-3,111	0,002	**
	SD	5.72	5.63	24	5.59	24			
Streghth	Avge	13.58	12.93	0	14.29	3	-2,002	0,045	*
	SD	4.88	5.12	24	4.51	23			
Ph. Appeal	Avge	16.16	15.78	0	16.56	3	-1,097	0,273	NSS
	SD	5.67	5.62	24	5.72	24			
Gen. Ph. Self-consciousness	Avge	16.61	15.77	0	17.52	3	-2,561	0,010	**
	SD	5.52	5.62	24	5.29	24			
Self-consciousness	Avge	16.37	16.18	5	16.57	6	-0,608	0,543	NSS
	SD	4.64	4.64	24	4.66	24			
Anxiety State	Avge	19.02	20.33	1	17.60	1	-2,690	0,007	**
	SD	8.86	8.77	46	8.77	40			
Anxiety Trait	Avge	21.36	22.28	6	20.35	3	-1,834	0,067	NSS
	SD	9.25	9.60	49	8.79	44			
Anxiety coping with Term. Illness	Avge	27.89	30.25	15	25.30	15	-3,502	0,000	***
	SD	9.47	10.69	57	7.11	47			

(n/s) $p > 0,05$; (*) $0,05 > p > 0,01$ (**) $0,01 > p > 0,001$ (***) $0,001 > p$

We have always obtained higher absolute values (6-8) for junior and senior students after studying the results of each of the dimensions of PSQ according to their degree taking into consideration that participants were grouped into two categories: freshmen and sophomore students (2-4); and junior and senior students (6-8). Nevertheless, there are no significant differences for two dimensions: General Self-consciousness and Physical Appeal. On the contrary, we do find significant statistical differences regarding the SA and Anxiety coping with Terminal Illness in relation to Anxiety; but absolute values are higher in all of them, including the TA, for freshmen and sophomore students than for junior and senior students which mean that those students at their first two years at university experience SA, TA and Anxiety coping with Terminal Illness to a greater extent (Table 4).

Physical Self-concept and Anxiety. Comparison by Gender among Physical Education Students

Male students present higher absolute values for all PSQ dimensions. There are significant statistical differences in three of them: their perception of their own Strength and Physical Condition and their General Self-consciousness (Table 5).

On the other hand, women present higher levels of Anxiety. There are significant statistical differences regarding the SA, and also for the TA ($p=0,051$)

to a lesser extent as shown in Table 5. No statistical differences were found for Anxiety coping with Terminal Illness.

Table 5. Physical Self-concept and Anxiety Assessment. Comparison by gender among Physical Education students.

Factor		Total N=130	♂ N=67	♀ N=63	Z	P	SS
Ph. Skills	Avge	18.45	18.66	18.22	-0,63	0,532	NSS
	SD	4.94	4.98	4.92			
Ph. Condition	Avge	16.58	18.28	14.76	-3,14	0,002	**
	SD	5.02	3.99	5.39			
Streghth	Avge	15.24	16.15	14.27	-2,88	0,004	**
	SD	3.71	3.40	3.79			
Ph. Appeal	Avge	18.20	18.91	17.44	-1,40	0,162	NSS
	SD	4.54	3.78	5.15			
Gen. Ph. Self-consciousness	Avge	18.24	19.07	17.35	-0,25	0,802	NSS
	SD	4.32	4.23	4.28			
Self-consciousness	Avge	16.84	16.67	17.02	-2,36	0,018	*
	SD	4.50	4.70	4.30			
Anxiety State	Avge	17.43	14.88	20.14	-3,69	0'000	***
	SD	8.05	8.17	7.02			
Anxiety Trait	Avge	21.47	19.67	23.38	-1,95	0,051	NSS
	SD	9.07	9.76	7.89			
Anxiety coping with Term. Illness	Avge	28.20	28.03	28.38	-0,57	0,568	NSS
	SD	10.34	11.01	9.66			

(n/s) $p > 0,05$; (*) $0,05 > p > 0,01$ (**) $0,01 > p > 0,001$ (***) $0,001 > p$

Physical Self-concept, Anxiety and Body Mass Index among UNACAR students

Table 6. Correlation Matrix among Factors of Anxiety, Physical Self-concept and BMI

	BMI	Templ	State	Trait	Skills	Ph. Cond.	Strength	Appeal	GSC	GPhS
BMI	1									
Templer	-0,076 0,220	1								
State	0,086 0,166	0,230 0,000	1							
Trait	0,042 0,494	0,445 0,000	0,585 0,000	1						
Skills	-0,406 0,000	-0,212 0,001	-0,248 0,000	-0,255 0,000	1					
Ph. Condition	-0,409 0,000	-0,169 0,006	-0,238 0,000	-0,195 0,001	0,694 0,000	1				
Strength	-0,312 0,000	-0,031 0,616	-0,095 0,125	-0,146 0,017	0,655 0,000	0,679 0,000	1			
Appeal	-0,429 0,000	-0,027 0,657	-0,385 0,000	-0,435 0,000	0,443 0,000	0,465 0,000	0,520 0,000	1		
GSC	-0,240 0,000	-0,286 0,000	-0,414 0,000	-0,606 0,000	0,455 0,000	0,392 0,000	0,276 0,000	0,544 0,000	1	
GPhS	-0,406 0,000	-0,178 0,004	-0,482 0,000	-0,497 0,000	0,526 0,000	0,576 0,000	0,494 0,000	0,842 0,000	0,592 0,000	1

(n/s) $p > 0,05$; (*) $0,05 > p > 0,01$ (**) $0,01 > p > 0,001$ (***) $0,001 > p$

The correlation among BMI, PSC dimension and the three types of Anxiety can be found in Table 6.

There is no correlation among BMI, SA, TA and Anxiety coping with Terminal Illness. However, BMI has a negative correlation with all PSQ dimensions; the higher the BMI is the worse result we get for all dimensions.

DISCUSION

Physical Self-concept and Anxiety. Physical Education vs. Nursing

With regard to the first objective, data collected significantly show higher values in physical education students compared to nursing students regarding almost all specific dimensions. However, PSC does not virtually vary. This research results regarding General Self-concept coincide with those found by Contreras, Fernández, García, Palou, and Ponseti (2010); and also with those of Goñi, Ruiz de Azúa, and Rodríguez (2004) and those of Moreno and Cervelló (2005).

The results also show that nursing students present higher levels of Anxiety compared to physical education students. On the contrary, TA and Anxiety coping with Terminal Illness is lower in nursing students, though there are no significant differences. We suggest that SA might be related to the specific course contents of the Nursing degree and the inherent responsibility of their practical courses during their training. Many studies have shown that health science students and, in particular, nursing students are subjected to many stressing factors during their training than other students (Benbunan, Cruz-Quintana, Roa, Villaverde and Benbunan, 2007).

Moreover, the fact that there are no differences regarding Anxiety coping with Terminal Illness reflects that there are no concerns about death among participants who see death as an inevitable, universal and irreversible fact, something far distant and that it does not apply to them. The bibliography shows that young people have death anxiety but it decreases during adulthood (López Castedo *et al.*, 2004; Schmidt Rio-Valle, 2007).

Physical Self-concept and Anxiety. University First Two Years vs. Last Two Years

With regard to the second objective, the older the participants are the higher the perception of dimensions is. This perception is significant or highly significant for all dimensions: Strength, Physical Condition and General Physical Self-concept and Skills. No differences were found for the Physical Appeal nor the GSC. Goñi, Ruiz de Azúa, and Rodríguez (2004) did not find differences in preadolescents nor tendencies that follow a specific pattern. Moreno, Cervelló and Moreno (2008) found no differences between groups of young people, age 18-20, with those older, age 20-23, but do find compared to other younger groups. Soriano, Navas and Holgado (2011) agreed with previous researchers (Esnaola, 2008; Moreno *et al.*, 2008; Novo and Silva, 2003) on the fact that scores regarding PSC, Physical Condition, Strength and Physical Appeal statistically decrease as age increases. This is the reason why other factors will have to be taken into consideration based on the bibliography.

Given the above, our results suggest that training may be a modulating variable for the PSC and Anxiety. Considering PSQ, all dimensions are lower and improve along with their training. We suggest that the more training means a significant increase in the development of Physical Skills, Physical Condition, Strength and PSC. The implementation of experiential programs helps to increase personal Self-consciousness and the perceived competence (Schmidt-RioValle *et al.*, 2012).

According to the bibliography, training helps coping with terminal illness with regard to anxiety; this variable regulates SA in such a way that considerably improves coping with death among future health care professionals. Training also helps these professionals coping with their duties and with stressing clinical problems and improves the quality of health care regarding coping with terminal illness. Therefore, these professionals will feel capable of working with terminal patients in the future (Benbunan *et al.*, 2007; Marti-Garcia *et al.* 2014; Schmid-RioValle *et al.*, 2012).

Physical Self-concept and Anxiety. Comparison by Gender among Physical Education Students

With regard to the third objective, very significant differences have been found between men and women. Men place importance on Physical Skills, Strength, Physical Condition and PSC as opposed to women; though men's General Self-concept is lower compared to women. Bibliography agreed with our results on these two dimensions while differing with the bibliography in the fact that results are significantly higher among men regarding Skills, Physical Appeal and General Physical Self-concept as opposed to women (Crocker, Eklund and Kowalski, 2000; Moreno *et al.*, 2008). Self-concept plays a determining role in the individual's own psycho-social process development, i.e., how individuals conduct their behavior in different contexts such as family, society, university and also the physical and emotional contexts. Not only Physical Condition but other variables are involved in the Self-concept according to researches. Regarding the notion of General Self-concept, emotional dimension is also considered, especially among women (González and Landero, 2008; Fariña, Arce, Novo, Seijo, Vásquez, 2005).

Data collected among physical education students mastering skills is not aligned with data collected by Moreno, Cervelló, Vera and Ruiz Pérez (2007); in their research women obtained a lower score concerning Self-concept than men and also, values regarding this dimension are considerably higher than those related to the practice of physical activity (Contreras *et al.*, 2010). However, no significant differences were found in our participants; the absolute values of this dimension are virtually similar.

Men feel more comfortable with their own body and greatly accept their appearance compared to women (Dieppa *et al.*, 2008; Ruiz de Azúa, Rodríguez and Goñi, 2005). New beauty standards have an effect on both groups though women are rather self-critical regarding their own image (Dieppa *et al.*, 2008)

Women show significant higher levels regarding SA, and also a tendency to achieve significance regarding TA. The appreciation of physical appearance is one of the most common attributes of Self-concept and self-esteem in western societies; it has a great impact on most people's self-appreciation. There is considerable social pressure towards Physical Appeal especially on adolescents and young people (Gervilla, 2002; McCabe and Ricciardelli, 2004). Studies have shown that women are more concern about their own body and image than men, are rather self-critical and develop Anxiety to a greater extent due to this social pressure. Also, social standards based on women's body image stereotypes (Raich, 2004) and the effect of emphasizing beauty and thinness on women's body image (Pastor and Bonilla, 2000) are found on many studies. Women seem to be more aware of their bodies than men (Maganto and Cruz, 2000; Sampedro, Tornero, Carnero and Sierra, 2012). Lawrie, Sullivan, Davies, and Hill (2006) point out the effect of media on the fact that women start being concerned about their own body at an earlier stage than men.

No differences were found between men and women regarding Anxiety coping with Terminal Illness. We suggest that physical education students are not concerned about death and also, this topic is not part of their curriculum.

Physical Self-concept, Anxiety and Body Mass Index among UNACAR Students

With regard to the last objective, we have found no association between BMI and the different types of anxiety though recent researches show that there is such association (Jorm *et al.*, 2003; Tapia, 2006). The results must be approached with due caution because there is no proportionality between the number of obese/overweight and normal weight participants regarding our target population. The higher the BMI is the more prone to have anxiety and psychological problems (Collipal *et al.*, 2006)

Our results show the direct effect between the BMI and the PSQ dimensions. There is a negative correlation: the higher the BMI is the lower the score for the PSQ dimensions. Despite the fact that the results are not based on a clinical sample nor even based on people with high levels of obesity, they agreed with other studies in this regard on the fact that a high BMI is related to a negative Self-concept (Adams and Bukowski, 2008; Jelalian *et al.*, 2011; Wallander *et al.*, 2009), and a higher risk of having Anxiety and /or emotional disturbance (Eremis *et al.*, 2004; Scott *et al.*, 2008).

CONCLUSIONS

Our results clearly show that physical education students have higher values of the PSQ dimensions than nursing students except for the General Self-concept.

Our results also show that nursing students show higher levels of SA than physical education students; this might be explained by the fact that nursing students have a great responsibility for performing their practical courses and also due to the Nursing curriculum contents. Therefore, training, and not age, is the modulating variable for the PSC and Anxiety.

Women show higher General Self-concept and higher levels of SA than men among physical education students. However, no differences were found for both groups regarding Anxiety coping with Terminal Illness. Our results suggest that physical education male and female students are not concern about death. Also, they do not have such contents in their curriculum. No association between BMI and the different types of Anxiety were found though there is a direct effect between BMI and the dimensions of PSQ; the higher the BMI is the lower score for the dimensions of PSQ.

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Referencias totales / Total references: 93 (100 %)

Referencias propias de la revista / Journal's own references: 1 (1,08 %)

Annex 1

“Ad Hoc Questionnaire”

MOTHER'S Initials	FATHER'S Initials	Your initials

Age	Sex	Education	Academic year	GROUP

Please, tell us about the time you spend on practicing any physical activity on a daily basis, including you Physical Education course, not counting course breaks. However, you might include those in case you spend 15 minutes or more switching classes.

0.5 h	1 h	1.5 h	2 h	2.5 h	3 h	3.5 h	4 h	4.5 h	5 or more (tell us the exact time)

Your State of birth	FATHER'S State of birth	MOTHER'S State of birth

MATERNAL GRANDFATHER State of birth	MATERNAL GRANDMOTHER State of birth	PATERNAL GRANDFATHER State of birth	PATERNAL GRANDMOTHER State of birth

Write down your size and weight as it was written on your letter of acceptance	
SIZE	WEIGHT