

## THE ABANDONMENT OF AN ACTIVE LIFESTYLE WITHIN UNIVERSITY STUDENTS: REASONS FOR ABANDONMENT AND EXPECTATIONS OF RE-ENGAGEMENT

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The objective of this research is to analyse in detail the barriers that make university students abandon the practice of physical activity and adopt a sedentary lifestyle. In order to do so, a questionnaire on the analysis of sports habits and lifestyles was administered to 795 students who stated not having done any physical and/or sports activity for at least one year at the moment of the field-work. A factorial, descriptive and correlation analysis was carried out. The results reveal that university students abandon a healthy lifestyle mainly due to external barriers particularly because of lack of time. On the one hand, women appear to be the ones who, to a great extent, adopt a sedentary lifestyle. On the other hand, men are the ones who refer more to abandoning the practice of physical activity due to internal barriers. The majority of the university students gave up practicing sport before entering university alluding to external barriers as their reason for the abandonment. A greater part of the sedentary university students expressing that they will be active in the future, left the practice of sport due to internal barriers.

### Introduction

At present there are many investigations pointing out the high prevalence of sedentary habits in the population (Ku, Fox, McKenna, & Peng, 2006; Sallis & McKenzie, 1991). This behaviour has become one of the main reasons of mortality and morbidity in the world and it is one of the main problems for worldwide health (World Health Organization, 2002). The results reveal that approximately half of the adult populations of industrialised nations are insufficiently active in their spare time (U.S. Department of Health and Human Services, 1996).

The promotion of physical activity on a regular basis has become one of the Government's main objectives with respect to public health. This is because it not only brings physical, psychological and physiological benefits both to the individual (Dishman, 1995; Molina-García, Castillo, & Pablos,

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2007; Pate, Pratt, Blair, Haskell, Macera, & Bouchard, 1995), and to the prevention of illnesses caused by sedentarism (Patrick, Spear, Holt, & Sofka, 2001; Troiano, Flegal, Kuczmarski, Campbell, & Johnson, 1995), that can become a serious health problem (Irwin, 2007; Trost & Loprinzi, 2008). As an example, studies such as the one by Warburton, Nicol, and Bredin (2006) highlight that the mortality caused by cardiovascular diseases has decreased a 20-35% in physically active adults.

Despite the social, personal and health benefits of physical activity, the results of different studies have shown that many people still opt out (U.S. Department of Health and Human Services, 1996). As an example, 30% of Spanish people who stated being interested in sport and having done it before, had abandoned the practice of it (García, 2006).

The following needs to be highlighted; first of all, as we get older, the index of practitioners as well as the level of intensity and the frequency of sports practice decreases. Secondly, male practitioners are more active than female ones (Gordon-Larsen, McMurray, & Popkin, 2000; Plotnikoff, Mayhew, Birkett, Loucaides, & Fodor, 2004; Statistics Canada, 2001; U.S. Department of Health and Human Services, 2000).

Sports abandonment is a social and dynamic phenomenon, which affects people of different socio-demographic features in a similar way. It is best explained by relating it to personal and family circumstances rather than it belonging to a particular group or social class (García, 2006). This generalised lack of adherence to physical activity is one of the main barriers when promoting a healthy lifestyle. García (2001) explains that this phenomenon is a consequence of the complexity of modern social life and personal development. García also attributes this to the relegation of physical activity to leisure time, thus having to compete with a wider range of offers and volunteering options that sometimes are more appealing.

From a public health perspective, university students have become an important object of study (Gyuresik, Bray, & Brittain, 2004). The entrance and the period of time they stay at university represents a critical moment in the promotion of an active lifestyle and adherence to the practice of physical and/or sports activities (Bray & Born, 2004; Bray & Kwan, 2006; Daskapan, Tuzun, & Eker, 2006; Gyuresik et al., 2004; Irwin, 2007; Leslie, Sparling, & Owen, 2001).

Even though university is regarded as a transition period offering many and excellent conditions for the adoption of healthy lifestyles (Leslie et al., 2001; Wang, Ou, Chen, & Duan, 2009), unfortunately physical and sports programs do not show a solid representation in the student programming (Gómez, 2005; Rona & Gokmen, 2005).

During this stage, important changes in students' life take place; the increase of stress, threats to self-esteem, lack of social support and a rise in

health-risk factors (Baranowski, Cullen, Basen-Engquist, Wetter, Cummings, Martineau et al., 1997; Leslie et al., 2001; Pennebaker, Colder, & Sharp, 1990). Likewise, a rise in abandonment and a decrease in practice of moderate and vigorous physical activities happen (Bray & Born, 2004; Han, Dinger, Hull, Randall, Heesch, & Fields, 2008; Sinclair, Hamlin, & Steel, 2005), above all in women (Han et al., 2008; Pintanel & Capdevila, 1999). Bray and Born (2004) affirm that approximately 56% of first year university students were not sufficiently active and about 30% became inactive during their transition into university, even though they were active during their last year of secondary education. This is why we feel the need to adopt measures in order to deal with this issue, such as implementing policies and guidelines that help with the structuring of a healthier university environment (Cheng, Cheng, Mak, Wong, Wong, & Yeung, 2003).

Generally, people who abandon the physical and/or sports practice state that their main reasons for this sedentarism is the lack of time, lack of energy and lack of motivation (Gómez, 2005).

The participation in a physical activity is influenced by multiple factors: demographic, biological, psychological, cognitive-emotional, behavioural attributes and skills, socio-cultural and physical environment (Dishman & Sallis, 1994; Sallis, Prochaska, & Taylor, 2000). Within the personal factors, included in the determinants of physical activity maintenance, we find the perceived barriers towards physical activity as psychological, cognitive and personality variables. These variables are regarded as negative for the maintenance of sport (Bauman, Sallis, Dzewaltowski, & Owen, 2002; Sallis, Hovell, & Hofstetter, 1992; Sallis et al., 2000).

Even though many investigations have focused on the study of the barriers perceived towards physical activity in university students (Daskapan et al., 2006), we find that there is not a common pattern when trying to classify them. In recent years, different studies have classified the perceived barriers as internal and external (Allison, Adlaf, Dwyer, Lysy, & Irving, 2007; Allison, Dwyer, Goldenberg, Fein, Yoshida, & Boutilier, 2005; Allison, Dwyer, & Makin, 1999; Chinn, White, Harland, Drinkwater, & Raybould, 1999; Daskapan et al., 2006; Gómez-López, Granero, & Baena, 2010; Grubbs & Carter, 2002; Sallis et al., 1992; Ziebland, Thorogood, Yudkin, Jones, & Coulter, 1998). It needs to be highlighted that the majority of the barriers faced by individuals preventing them from continuing with the practice of physical activity are internal barriers that can be personally controlled and more feasible to change (McAuley, Poag, & Gleason, 1990).

According to the HBM: Health Belief Model, the presence of perceived barriers decreases the probability of practicing activities oriented towards the prevention of health problems, mainly if these perceived barriers surpass the perceived benefits in the practice (Becker, Haefner, Kasl, Kirscht, Maiman,

& Rosenstock, 1977). The results have also shown that those individuals perceiving more barriers have less probabilities of being active (Pate, Freedson, Sallis, Taylor, Sirard, Trost et al., 2002; Sallis et al., 2000) and that these can vary depending on age and gender (Allison et al., 1999; Brown, 2005). Nevertheless, it should be pointed out that Tergerson and King (2002) identified similar perceived barriers between men and women in secondary education. The results from different investigations show that the perceived barriers are an important determinant in the future level of activity of individuals (Nahas, Goldfine, & Collins, 2003), a strong predictor of vigorous physical activity (Sallis et al., 1989) and the key in the prediction of healthy behaviour (Janz & Becker, 1984).

Taking everything so far into account, we can say that the perceived barriers are important factors related to a healthy behaviour and, in particular to the practice of physical activity. That is the reason why throughout this paper we analyse in detail the reasons that have provoked the physical activity and sports abandonment within sedentary university students. This information could be very valuable for both the design of intervention policies and strategies and for the promotion of a healthy and active lifestyle in students. Hence, it is necessary to know about the factors and reasons related with the physical and sports practice (Capdevila, Niñerola, Cruz, Losilla, Parrado, Pintanel et al., 2007; Chinn et al., 1999; Gómez-López et al., 2010; Zunft, Friebe, Sepelt, Widhalm, Remaut de Winter et al., 1999).

Therefore, three objectives have been defined: a) to establish the moment in which the abandonment of an active lifestyle within university students took place and its relation with the perceived barriers, b) to state the perceived barriers determining that university students abandon the practice of physical and/or sports activities according to gender and year in which they are studying and c) to find out the expectations of these inactive students in relation to the perceived barriers of re-engaging with the practice of physical and/or sports activities in the future.

## Method

### *Sample*

The representative sample was composed of 1834 students from the University of Almeria (Spain), of whom 773 were male and 1061 female (Table 1). A  $\pm 3\%$  margin of error and a 95% confidence level were assumed to demonstrate validity of the results.

In order to carry out the sample selection, a stratified multistage sampling was developed. This consisted of 4 clearly differentiated stages. The polypotypic stratified multistage sampling with proportional allocation was used in

the two cycles of studies (1<sup>st</sup> and 2<sup>nd</sup> cycle). This procedure enabled university students to have the same probability of being selected for the gathering of information since all the strata established in the study are represented within the sample.

In the first stage, the sampling size was determined and the proportional affixation by faculties was carried out. In a second stage, the latter was carried out taking into account the different studies within each faculty (Diplomas and Engineering technologists for the first cycle and Bachelor degrees and Bachelor in engineering for the second cycle). In a third stage, the proportional affixation was done taking into consideration the years or levels of the different studies in which the students were enrolled (first, second and third year for the first cycle, and fourth and fifth for the second cycle). Finally, the variable gender was considered, proceeding to the proportional affixation of all the strata arranged until now.

**Table 1**  
*Population and sample of university students of Almería*

	Population			Sample		
	Male	Female	Total	Male	Female	Total
First Cycle	4.257	5.345	9.602	439	552	991
Second Cycle	1.411	2.145	3.556	334	509	843

Due to the fact that the objective of our study focuses on finding out the perceived barriers that make university students abandon an active lifestyle, we will only concentrate on those students who, at the moment of the fieldwork, were inactive for more than a year. Hence, from the 100% of the sample, the students with active habits and those who have abandoned the practice during the last year have been removed. This left our study sample with 794 participants (43.35%). Table 2 shows the number of university students who stated having abandoned the active lifestyle that they used to have. It can be observed that the abandonment within the female participants is almost double than of the male ones.

**Table 2**  
*Frequency and percentages, by gender, of students practicing physical and sports activity in their spare time, students who have abandoned it and students who have never practiced it*

Gender	Practice		Has abandoned		Has never practiced	
	N	%	N	%	N	%
Males	385	55.08	271	34.09	117	34.41
Females	314	44.92	524	65.91	223	65.59
Total	699	100	795	100	340	100

### ***Instrument***

The gathering of data was carried out by means of the CHDEV standardised questionnaire (Questionnaire for the Analysis of Sports Habits and Lifestyles), consisting of 51 questions included in different thematic blocks. To analyse the barriers that prevent university students from doing any physical and sports activity during their spare time, we have used the question with the heading “*Please point out if the following reasons had an influence on your decision of abandoning the practice of physical and sports activity*”. The students were presented with various reasons for abandoning the practice of physical activities and sport. They were then asked to indicate to what extent their abandonment had been influenced by each reason. The scale consists of 20 items to be answered on a 4-point Likert scale, ranging from “not at all (1)” to “a lot (4)”. The content validity of the instrument was ensured by means of an exhaustive and systematic examination of it, taking into consideration the suggestions given by Buendía (1998), García (2000), Latiesa (2000), and Martínez (1995). The reliability has been verified by conducting three pilot studies in real conditions.

Likewise, in order to prove the interaction of the variables with the perceived barriers, other identification variables were used: gender (males = 1; females = 2); the year in which the student is enrolled at the moment of the investigation (first year = 1; second or subsequent years = 2) and the period of abandonment of the physical and sports practice (before starting university = 1; during university = 2).

All these questions have been dealt with in a similar way by other studies focused on university population (Hernández, 2001; Ruiz, 2001); and lastly, the expectations asserted by the population under investigation to reengage with the practice of a physical and/or sports activity during their free time, with three answer options, 1 (*no*), 2 (*I don't know*) and 3 (*I'm sure I will*). This variable has been based on previous published studies with the aim of measuring this question within the Spanish population (García, 2006; Hernández, 2001; Ruiz, 2001).

### ***Procedure***

The questionnaire was administered during the usual class time, away from the period of exams in order to avoid an influence on the emotional state of the participants.

The information was collected in an anonymous and volunteering way. It was gathered by means of a self-administered approach designed for a massive classroom impact and in the presence of an administrator at all times.

The participants did not receive either financial or academic compensation for their collaboration in the study.

### ***Statistical analysis***

The SPSS program (Statistical Package for Social Sciences) 15.0 was used for the statistical treatment of the information gathered. This has enabled the implementation of the statistical techniques of descriptive and inferential analysis.

We carried out a factor analysis (analysis of the main components with Kaiser's Varimax rotation) of the question concerning the reasons for university students from Almería for abandoning the physical and sport practice in their spare time. The data have been analysed obtaining the mean ( $M$ ) and the standard deviation ( $SD$ ) for each one of the items.

The KMO (Kaiser-Meyer-Olkin) coefficient has been taken as an index to analyse the suitability of the factor analysis applied to the group of variables examined. Bartlett's test of sphericity was also considered for positive correlations between variables. For the analysis of the gender differences, the year studied at the moment of the investigation and period of abandonment of the physical and sport practice, the Student's T-test for the independent samples was used in order to calculate the difference between means.

It should be highlighted that in order to ensure homogeneity of the variance, the relevant test for normality and test of homoscedasticity have been carried out. The analysis of the differences according to the expectations of re-engaging with the physical and sport practice has been done by means of ANOVA of a single factor ( $F$ -*Snedecor*) or the Welch statistics ( $A_{\text{Asymptotic}} F$ ) (when Levene's test of homogeneity of variances was significant, indicating that the variances of the groups are not equal). Likewise, a contrast of *post hoc* multiple comparisons of Scheffé or Games-Howell (when equal variances have not been assumed) was performed.

## **Results**

### ***Factor structure of perceived barriers***

In order to explore the factor structure of the reasons given by university students from Almería to abandon the practice and become inactive during their spare time, an analysis of the main components (PCA) with oblique Varimax rotation has been carried out. Initially, the applied criterion to decide the number of factors to rotate has been based on those factors with an Eigenvalue greater than 1, requiring, in addition, a minimum correlation of .35 in order for a variable to be considered important within a factor. The initial analysis with PCA identified five factors with values greater than 1.0

However, this extraction technique very often generates too many factors; hence, the *scree test* is also used to determine the number of factors to consider in the factor analysis. By means of using the *scree test* and basing our-

selves on theoretical and interpretability fields as well as on the treatment made by other authors in a similar situation in relation with the perceived barriers (Allison et al., 1999), a solution of the two factors was chosen as the most suitable.

This matrix of the two factors can be observed in Table 3. To designate these two subscales we have considered international literature that refers to the different perceived barriers causing the abandonment of both the physical and/or sports practice and of a healthy and active lifestyle (Allison et al., 1999, see also Allison et al., 2005, 2007; Chinn et al., 1999; Daskapan et al., 2006; Gómez-López et al., 2010; Grubbs & Carter, 2002; Sallis et al., 1992; Ziebland et al., 1998): *external barriers* (factor 1) and *internal barriers* (factor 2)

Factor 1 includes eight items relating to external questions that affect the social life of the individual: “*lack of time (because of studies or work)*”, “*because the timetable was incompatible with my duties*”, “*because of the distance between the sporting facilities and my residence*” and “*difficulties to practice them at university*” “*lack of time (because of family obligations)*” “*the university does not offer them*”, “*injuries*” and “*lack of friends’ support*”. Factor 2 refers to the perception of the barriers based on personal and individual questions and is composed of four items: “*I don’t enjoy it anymore*”, “*I liked other things more*”, “*laziness and reluctance*” and “*I don’t see the practical usefulness of the physical activity*”.

The KMO coefficient that has been obtained is .736. This suggests a high degree of sampling adequacy, since the degree of total simple variability is 73.6%. Likewise, the critical level (unilateral sig.: 0.000) of the Bartlett’s test of sphericity illustrates the high degree of the positive correlations between variables.

The internal consistency of the dimensions has been measured by means of Cronbach’s Alpha, obtaining .73 for external barriers and .64 for the internal ones. Even though factor 2 showed a reliability or alpha value smaller than the recommended .70 (Nunnally, 1978; Peterson, 1994), due to the small number of items (four) that composes them, the observed internal validity can be marginally accepted (Hair, Anderson, Tatham, & Black, 1999; Nunnally & Bernstein, 1994).

It should be highlighted that due to the fact that the visualisation coefficient is 0.35, there are eight reasons that do not surpass it and that, as a consequence, the correlation between these variables are not considered important within any factor. These eight reasons are: “*the facilities are not the appropriate ones*”, “*due to an illness*”, “*because I left the centre where I studied*”, “*because they stopped offering them*”, “*lack of parents’ support*”, “*because of the change of timetables of the physical and sports activity*”, “*disagreement with the coach*” and “*disagreement with the managing team*”.



**Table 3**

*Factor analysis. Matrix of the rotated components. Extraction method. Analysis of the main components. Rotation method: Varimax with Kaiser; coefficient of visualisation 0.35*

	Factor 1	Factor 2
Due to lack of time (studies or work)	.67	
Because the timetable was incompatible with my duties	.61	
Due to the distance between the sports centre and my domicile	.54	
Difficulty to practice at university	.52	
Because of lack of time (family obligations)	.43	
The university does not offer them	.37	
Injuries	.35	
Lack of friends' support	.35	
I don't enjoy it anymore		.74
I liked other things more		.72
Because of laziness and reluctance		.62
I don't see the usefulness of the physical and sports practice		.60
Eigenvalue	3.31	1.75
Percentage of the explained variance (Percentage of variance)	30.36	8.08

### ***Descriptive and correlation analysis***

In the first place, the statistics of the variables from which we can find correlations between the external and internal barriers needs to be pointed out. Concerning *gender differences*, it should be highlighted that two thirds of the people who have abandoned the active practice in their spare time correspond to the female population (65.91%) and a third to the male one (34.09%). In relation to the year they are studying, 18.11% of the participants are in the first year whereas 81.89% study second or a superior year. More than half of the participants (55.4%) abandoned the active practice during their spare time before enrolling in university and 44.6% did it during the university period. Finally, it is important to mention that 7.87% of the participants assured that they would not re-engage with an active hobby, a fourth (24.65%) expressed that they were not sure whether they would re-engage with it, whereas two thirds (67.48%) were of the opinion that they would do it.

Table 4 shows the descriptive statistics of external barriers ( $M = -.79$ ;  $SD = 1.06$ ) and internal barriers ( $M = -.49$ ;  $SD = 1.34$ ), as well as the correlation between these two dimensions with the rest of the variables. The external barriers are negatively correlated with all the variables. These differences are significant with respect to the *internal barriers* ( $r = -.49$ ), the *expectations for the practice in the near future* ( $r = -.23$ ) and with the *period of abandonment* of the physical and sports practice ( $r = -.16$ ). In contrast, the *internal barriers* show a positive and significant correlation with the *expectation of*

**Table 4**

Mean (*M*) and standard deviation (*SD*) of the barriers subscales. Bivariate correlation between the dimensions of the perceived barriers and the variables of the year they are at, period of abandonment, expectations of re-engagement and gender

	<b>M</b>	<b>SD</b>	<b>Internal barriers</b>	<b>Year</b>	<b>Period of abandonment of the practice</b>	<b>Expectations of future practice</b>	<b>Gender</b>
1. External Barriers	-.79	1.06	-.49**	-.07	-.16**	-.23**	-.02
2. Internal Barriers	-.49	1.34	-	.03	.22**	.30**	-.09*

Note. \*  $p < 0.05$ ; \*\*  $p < 0.01$

re-engaging with the practice ( $r = .30$ ) and with the period of abandonment of the physical and sports practice ( $r = .22$ ); on the other hand, even though the correlation with gender is smaller, it is negative and significant ( $r = -.09$ ).

### **Differences based on gender**

For the T-test for the equality of the means according to gender, we need to take into account the value of Levene's test, of homogeneity of variances, since they are independent samples. With respect to the *external barriers*, it has to be pointed out that  $F = .20$ ;  $p \leq .656$ . Therefore, it is assumed that the variances are equal:  $t(793) = .71$ ;  $p \leq .480$  and that there is no difference between means between males and females. The factor that refers to the *internal barriers*,  $F = 2.67$ ;  $p \leq .151$ , so it is also assumed that the variances are equal  $t(793) = 2.67$ ;  $p \leq .008$ . In this case, males and females show differences between means. Female participants are the ones with more negative mean values ( $M = -.58$ ) (Table 5).

**Table 5**

Student T-Test for independent samples; T-Test for independent samples based on gender

<b>Gender</b>	<b>Males</b>		<b>Females</b>		<b>Levene's test</b>		<b>T-test for the equality of means<sup>a</sup></b>			
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>F</i>	<i>Sig.</i>	<i>t</i>	<i>df</i>	<i>p</i>	<b>Difference between means</b>
External barriers	-.75	1.05	-.80	1.07	.20	.656	.71	793	.480	.06
Internal barriers	-.32	1.28	-.58	1.36	2.67	.151	.15	793	.008	.27

a. The difference between means is significant to level  $p < .05$

**Differences based on the period of abandonment**

In the first place, it should be pointed out that there are no significant differences based on the year the participants are studying. However, according to the period of abandonment of the physical and sport practice, the T-test shows significant differences both in external and internal barriers (Table 6). With respect to the *external barriers*,  $F = 4.40$ ;  $p \leq .036$ , so it is assumed that the variances are not equal:  $t(758.292) = 4.49$ ;  $p \leq .000$ ; the difference between means is .37. The values are higher in the participants who abandoned the practice of sport before university ( $M = -.65$ ). In contrast, in the *internal barriers*,  $F = 59.19$ ;  $p \leq .000$ , so it is assumed that the variances are not equal:  $t(701.773) = -6.74$ ;  $p \leq .000$ ; the difference between means is  $-.61$ . In this case the higher values correspond to the participants who abandoned the active practice before university ( $M = -.17$ ).

**Table 6**

*Student T-Test for independent samples; T-Test for independent samples based on the period of abandonment of the physical and /or sport practice*

Period of abandonment	Before university		During university		Levene's test		T-test for the equality of means <sup>a</sup>			
	M	SD	M	SD	F	Sig.	t	df	p	Difference between means
External barriers	-.65	1.09	-.99	.98	4.40	.036	4.49	758.292	.000	.37
Internal barriers	-.780	1.57	-.17	.91	59.19	.000	-6.74	701.773	.000	-.61

a. The difference between means is significant to level  $p < .05$

*Differences based on the expectations of re-engaging with an active lifestyle*

Both in the external barriers and in the internal ones there were significant differences depending on the intention of re-engaging with the physical and sports practice in the spare time (Table 7). In the *external barriers*,  $F = 21.31$ ;  $p \leq .000$ , with values higher than the mean on those participants who answered no ( $M = -.26$ ) or don't know ( $M = -.53$ ). In the *internal barriers* Welch statistics, *Asymptotic*  $F = 31.54$ ;  $p \leq .000$  was calculated, with statistics much lower than the mean on those who stated no ( $M = -1.24$ ) and those who answered don't know ( $M = -1.02$ ), whereas the participants who asserted that they would re-engage with an active lifestyle, show values greater than the mean ( $-.20$ ). The *post hoc* contrasts (Table 8) indicated significant differences between the participants who were certain they would re-engage with the practice (*yes*) and the ones who don't know (*I don't know*) or affirmed they would not re-engage with an active lifestyle (*no*).

**Table 7**

*ANOVA in relation with the expectations of re-engaging with the practice of physical and sport activity in the spare time*

Expectations of re-engaging	No		I don't know		Yes		ANOVA		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	Quadratic mean	<i>F</i>	<i>p</i>
External barriers	-26	1.13	-.53	1.08	-.96	1.01	22.78	21.31 <sup>a</sup>	.000
Internal barriers	-1.24	2.45	-1.02	1.40	-.20	.97	65.07	31.54 <sup>b</sup>	.000

a. ANOVA of a factor.

b. Welch statistics.

**Table 8**

Dependent variables	Expectations of re-engaging		Difference between means (I-J) <sup>a</sup>	<i>p</i>
	(I)	(J)		
External barriers	Yes	No	-.705	.000
	Yes	Don't know	-.431	.000
	No	Don't know	.273	.199
Internal barriers	Yes	No	1.033	.000
	Yes	Don't know	.814	.000
	No	Don't know	-.218	.785

a. The difference between the means is significant to level  $p < .05$ .

## Discussion

When analysing and discussing the results of this investigation, we have to be aware of the wide concept of sports abandonment. The contemporary approach to this phenomenon highlights a continuum that goes from those active people who decide to change the type of sport or the physical activity they practice, or even those who modify the intensity with which they practice it, to those people who decide to abandon it temporarily or permanently (Weiss & Chaumeton, 1992). The approach to this concept of abandonment leads us to look at the sporting behaviour as a dynamic process. Within this process, the occupational and family-related circumstances of each person, determine physical and/or sports practices with different intensities. They can also determine the dropouts that are not always definitive but temporal. Once these personal or social barriers that caused the reduction or even abandonment of the sports practice have been overcome, the individual re-engages with the practice of it; hence, authors like García (2006) and Puig (1996) refer to abandonment as a sort of sporting itinerary. The results of the investigation illustrate that the number of inactive university students almost doubles the number of the active ones at the moment of the fieldwork, and even the percentage of dropouts is superior to the number of practitioners of physical and sports activities. These findings are in consonance with the results obtained in a study carried out in 23 countries with university students (Haase, Steptoe,

Sallis, & Wardle, 2004) since the levels of physical activity done in their spare time was below the recommended ones in a significant number of students. Bray and Born (2004) proved that the levels of physical activity are significantly reduced in first year university students, when we compare them with the previous levels of activity that they had during secondary education. As a consequence of this, health and well-being decreases. In comparison with the students who were sufficiently active, the insufficiently active ones obtained a lower psychological well-being and double the probabilities of having consulted a doctor regarding an illness (Bray & Kwan, 2006).

This experience of inactivity within first year university students can become a pattern of inactivity that will last throughout university and even longer (Bray & Born, 2004).

Taking the international literature as a point of reference, the results of our study demonstrate that for the majority of the university students' external barriers are more important than internal ones when justifying their sports abandonment. This coincides with the contributions given by Daskapan et al. (2006) where the perceived external barriers were more important than the internal ones for Turkish university students. We can confirm that the results of our research are not very reassuring since, coinciding with the contributions by McAuley et al. (1990), internal barriers are more controllable by the person and more feasible to change. In contrast, Ziebland et al. (1998) stated that those students, who only alluded to internal barriers as the reasons for their inactivity, were less prone to do physical activities than the ones who referred to external barriers as the main reasons for their sedentarism. The results of his study carried out with a sample of adults with ages between 35 and 64 years old, demonstrated that the internal reasons were the most referred ones when explaining their physical inactivity.

As a general rule, within the reasons grouped as external barriers, the ones that have been mentioned the most have been lack of time and two reasons related to sporting equipment and facilities, on the one hand the incompatibility between the timetable and personal obligations and, on the other, the distance between the sporting facilities and the domicile. With respect to the first most mentioned reason, the results coincide with the ones found in similar studies. They show that this temporal limitation is mainly provoked by the increase of responsibilities because of academic tasks, lack of social support and the family (Allison et al., 1999; Daskapan et al., 2006; Gyurcsik et al., 2004; Leslie et al., 2001; Steptoe, Wardle, Cui, Bellisle, Zotti, Baranyai et al., 2002; Wang et al., 2009). Likewise and as indicated by Allison et al. (1999), this is a reason that has been mentioned by adolescents before starting university.

The results found in another investigation carried out with adults in fifteen European countries demonstrated that the main barriers for them were due to

burdens of work or study, not having the sport they demanded or having to look after relatives (Zunft et al., 1999).

Concerning the second and third of the most mentioned reasons within the external barriers by university students from Almería, they agree with the findings by Reed (2007), Reed and Phillips (2005), Lovell, Ansari, and Parker (2010) and Wang et al. (2009), who established that both the characteristics of the facilities and their proximity or distance to the place of residence, are important factors to take into account when promoting the physical and/or sports practice.

On the other hand, Gyurcsik, Spink, Bray, Chad, and Kwan (2006) demonstrated that within the most mentioned barriers by university students were health related problems, social invitations during the spare time devoted for training and the large burden of work that impeded the practice of physical and/or sports activities. These results are similar to the ones found by Gyurcsik et al. (2004) who, in addition to these motives, highlight the lack of time and climatology.

Continuing with the internal barriers found by university students from Almería, the lack of entertainment and the preference of doing activities other than sport were most frequently singled out. This coincides with the findings by Allison et al. (1999) and Robbins, Pender, and Kazanis (2003) where the lack of interest or simply the wish to do other type of activities were the most mentioned barriers.

Concerning gender differences, the results show that the majority of the students who have abandoned the practice are the female ones, with almost double the percentage than the male ones. This agrees with other studies made on adolescents (Allison et al., 1999; Sallis et al., 2000; Trost, Pate, Sallis, Freedson, Taylor, Dowda et al., 2002).

Even though no significant differences with respect to the perception of external barriers have been found, when we analyse the internal barriers according to this socio-demographic variable we have come across that the male gender is the one who mentions this type of barriers the most.

Allison et al. (1999) discovered that although there were similarities between males and females in the hierarchic order of the perceived barriers, there were differences in the degree of importance given to these barriers. This different perception of the barriers towards physical activity displayed by both genders was also revealed previously by studies such as the one carried out by Allison et al. (1999) and Tappe, Duda, and Ehrwald (1989).

Another important aspect of the investigation has been the analysis of the perceived barriers in relation to the university year the participants were studying at the moment of the fieldwork and the period in which they abandoned the practice of physical and/or sports activities. The results do not show significant differences according to this variable. This is probably due to the

slight age difference between the university students. However, significant differences are shown in both types of barriers when analysing the period in which they stated having abandoned the practice. More than half of the university students from Almería confirmed having abandoned the active lifestyle before enrolling in university during compulsory and post-compulsory secondary education. In addition, the results clearly demonstrate that these students abandoned the practice mainly triggered by external barriers, quite the opposite of the ones who affirmed having abandoned it while they were studying at university.

The results agree with the ones found by Allison et al. (1999), who stated that adolescent students alluded to lack of time and due to academic tasks and looking after family members as their main barriers. The results also coincide with the ones by Hohepa, Schofield, and Kolt (2006), who highlighted the inaccessibility of the school sporting facilities and the distance between them and students' houses. Likewise, other studies carried out with adolescents strengthen the results that we have found since they point out other external reasons such as low family incomes or not having free access to the sports activities (Gordon-Larsen et al., 2000).

Finally, we will move to analyse one of the most interesting points of this investigation; the intention of re-engaging with the practice of physical and/or sports activities. With respect to this, it should be stressed that it is a significant predictor in physical activity (Cheng et al., 2003). Our findings contribute by emphasising that the majority of university students express having the intention of re-engaging with an active lifestyle during their spare time. This is quite a reassuring fact. Those students who expressed that they would not be active again or the ones, who were not sure, were those students who had abandoned the practice mainly due to external barriers. On the contrary, those who were more optimistic with their future stated that they would practice sport again, being the latter the ones who abandoned the practice mainly due to an internal barrier. Furthermore, Yoshida, Allison, and Osborn (1988), did not observe substantial differences between the perception of barriers towards physical activity between sedentary women who had the intention of engaging with the practice of a physical activity and active women who wanted to increase their level of activity.

## **Conclusions**

It has been demonstrated that sports abandonment is a dynamic process that is not caused by just one type of barrier or barriers, since it is a decision that in many occasions is determined by personal and family-related factors. Concerning university students, the abandonment of an active lifestyle is provoked mainly due to external barriers and mostly because of lack of time. On

the one hand, women continue to be the ones with the highest percentages of abandonment with no significant differences with respect to the perception of external barriers and, on the other hand, men are the ones who allude the most to internal barriers in order to explain the cause of the dropout. The majority of the university students affirmed having adopted a sedentary lifestyle before university, during their previous education stages. This was mainly due to the perception of external barriers. Even so, the results are reassuring since most of university students stated having the intentions of re-engaging with an active lifestyle during their spare time. These students were the ones who abandoned the practice mainly due to internal barriers.

The information obtained in studies such as ours can be used as a guide in order to improve the sporting offer within universities. This would be of a great help because the knowledge of the barriers that provokes the adoption of a sedentary lifestyle within students will help us keep in mind the aspects that need to be reinforced so as to promote a healthy lifestyle.

As a limitation of the study, it is important to stress that we have to be prudent and take into consideration that the questionnaires technique depends on the veracity of the responses given by the subjects. However, it is also true that the measures with the possibility of the verification of reality confirm the results of the studies where this questionnaire has been used (Piéron, Ruiz, García, & Díaz, 2008).

Finally, for future investigation, we believe we should consider the level of physical activity of the participants in the study since the perceptions towards the physical activity can be different (Tappe et al., 1989).

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