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## ORIGINAL

### MOTIVATIONAL ANALYSIS COMPARING THREE CONTEXTS OF PHYSICAL ACTIVITY

### ANÁLISIS MOTIVACIONAL COMPARATIVO EN TRES CONTEXTOS DE ACTIVIDAD FÍSICA

Moreno-Murcia, J. A.<sup>1</sup>; Sicilia, A.<sup>2</sup>; Sáenz-López, P.<sup>3</sup>; González-Cutre, D.<sup>4</sup>;  
Almagro, B. J.<sup>5</sup> & Conde, C.<sup>6</sup>

<sup>1</sup> PhD. Faculty of Health and Social Sciences, Miguel Hernández University of Elche, Spain ([j.moreno@umh.es](mailto:j.moreno@umh.es)).

<sup>2</sup> PhD. Department of Education, University of Almería, Spain ([asicilia@ual.es](mailto:asicilia@ual.es)).

<sup>3</sup> PhD. Faculty of Education Sciences, University of Huelva, Spain ([psaenz@uhu.es](mailto:psaenz@uhu.es)).

<sup>4</sup> PhD. Faculty of Health and Social Sciences, Miguel Hernández University of Elche, Spain ([dgonzalez-cutre@umh.es](mailto:dgonzalez-cutre@umh.es)).

<sup>5</sup> PhD. CEU Cardenal Spínola (affiliated with the University of Seville) ([balmagro@ceuandalucia.com](mailto:balmagro@ceuandalucia.com)).

<sup>6</sup> Professor in the Faculty of Education Sciences, University of Huelva ([cristina.conde@dempc.uhu.es](mailto:cristina.conde@dempc.uhu.es)).

**Spanish-English translator:** Jillian E. Frideres ([jefrideres@gmail.com](mailto:jefrideres@gmail.com))

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#### ABSTRACT

This study analysed the motivational differences between physical education students, athletes, and non-competitive exercisers. Furthermore, the predictive power of perceived motivational climate and types of motivation regarding the

autotelic experience propensity in the three contexts was examined. Three different samples were used: 895 physical education students, 413 athletes, and 727 non-competitive exercisers. Regression analysis showed that task-involving climate and intrinsic motivation positively and significantly predicted the autotelic experience in the three contexts, hence, the importance of promoting this type of motivational climate. However, the results revealed that there were motivational differences between the contexts of physical education, competitive sports, and non-competitive exercise. The results are discussed in relation to the different features (e.g. competitive, recreational, voluntary or obligatory) of the physical activity in each of the contexts in this study.

**KEY WORDS:** Motivational climate; Motivation; Autotelic experience; Self-determination theory; Adherence to physical activity.

## RESUMEN

El estudio analizó las diferencias motivacionales entre estudiantes de educación física, deportistas y practicantes de ejercicio físico no competitivo. Además, examinó el poder de predicción del clima motivacional percibido y de los tipos de motivación sobre la propensión a la experiencia autotélica en los tres contextos. Se utilizaron tres muestras diferentes: 895 estudiantes de educación física, 413 deportistas y 727 practicantes de ejercicio físico no competitivo. El análisis de regresión mostró que el clima tarea y la motivación intrínseca predijeron positivamente y de forma significativa la experiencia autotélica en los tres contextos, de ahí la importancia de fomentar este tipo de clima motivacional. No obstante, los resultados han mostrado diferencias motivacionales entre los contextos de educación física, deporte competitivo y ejercicio físico no competitivo. Los resultados son discutidos en relación al diferente carácter competitivo/lúdico y voluntariedad/obligatoriedad que rodea a la práctica física en cada uno de los contextos comparados en este estudio.

**PALABRAS CLAVES:** Clima motivacional; Motivación; Experiencia autotélica; Teoría de la autodeterminación; Adherencia a la práctica.

## INTRODUCTION

Studies that assess motivation in physical activity and sport activities have had much importance in the last few decades. As Iso-Ahola and St. Clair (2000) affirm, motivation is the most important determinant in human behaviour, and it decisively influences the selection and maintenance of any activity. Therefore, it is a key element in the adherence to the practice of physical activity and sport. There are numerous studies about the importance of motivation when experienced in physical activity and sport (e.g., Conde, Sáenz-López, & Moreno, 2013; Lim & Wang, 2009; Marrero, Martín-Albo, & Núñez, 1998; Sarrazin, Vallerand, Guillet, Pelletier, & Cury, 2002; Ulrich-French & Smith, 2009). These studies have been carried out within the various contexts of

physical activity and exercise: educational, competitive, and recreational. However, there is a need for published studies that analyse the motivational differences between these three physical activity and sport contexts. Thus, the aim of this study was to analyse these differences from a model that took into consideration the perceived motivational climate, the self-determined motivation, and the propensity toward autotelic experiences (a characteristic of the state of flow or optimal psychological state that represents enjoyment) during physical activity, within each context.

Physical education classes, training sessions, or sessions of physical exercise can be an ideal context for fostering adherence to this practice, as long as the students, athletes, or exercisers are motivated (Boiché & Sarrazin, 2009; Ferrer-Caja & Weiss, 2000; Moreno, Conte, Borges, & González-Cutre, 2008). Each interaction between the professor/coach/trainer and the student/athlete/exerciser can be an ideal moment to transmit healthy values and habits; therefore, it is important for these interactions to be positive, creating an adequate motivational climate for the physical activity or sport activity to be enjoyable and motivating.

Motivational climate was defined by Ames (1992) as a group of implicit and/or explicit signs that are perceived in the environment, through which the keys of success and failure are defined. This climate is created by the professors of physical education, coaches, parents, teammates, friends, etc., and it can be one of two types: a motivational climate that involves task and a motivational climate that involves ego, and they are differentiated with regard to the criteria for success that is established. Along these lines, a person transmits an ego climate when he or she is focused on the result (not on the learning process), puts comparisons between teammates first, and believes that beating others is the most important thing. On the other hand, people that transmit a task climate are focused more on the process, on aspects of self-improvement, and on effort. For them, what is important is that each person improves by working hard, collaborating with others, and being persistent. Along these lines, various studies have focused on studying the effect of the motivational climate, as perceived by the student (Barkoukis, Tsorbatzoudis, & Grouios, 2008; Moreno & Llamas, 2007; Sicilia, Moreno, & Rojas, 2008), athlete (Le Bars, Gernigon, & Ninot, 2009; Torregrosa, Sousa, Viladrich, Villamarín, & Cruz, 2008), or exerciser (Moreno, González-Cutre, Sicilia, & Spray, 2010; Quested & Duda, 2009; Sicilia, Aguila, Muyor, Orta, & Moreno, 2009), on his or her motivation, and the studies obtained results that demonstrate that a task motivational climate can have positive consequences on motivation, the intent to keep practicing, dedication, wellbeing, and enjoyment, among others. Previous studies have demonstrated the importance of perceived motivational climate and its relationship with various positive consequences in the athletic context, in the area of physical education, and in non-competitive exercise.

From the viewpoint of self-determination theory (Deci & Ryan, 1985, 1991, 2000; Ryan & Deci, 2000), motivational climate could be considered a social factor that influences human motivation. This theory establishes different types

of motivation throughout a continuum, with regard to the level of self-determination. Thus, from lesser to greater self-determination, there is amotivation, extrinsic motivation, and intrinsic motivation. Amotivation refers to the lack of intention or absence of motivation. Extrinsic motivation is that in which the activity that is carried out is considered to be a means to achieve something. This type of motivation presents ways that have little self-determination such as external regulation, which defines a behaviour that is carried out to satisfy others, to obtain a reward, or to avoid punishment, and introjected regulation, in which the activity is carried out to achieve self-approval or to prevent one from feeling guilty or bad with one's self. Extrinsic motivation also presents more self-determined ways of motivation, such as identified regulation, in which the activity is assessed and considered important, and integrated regulation, which reflects an integration of the activity into the person's way of being. Finally, intrinsic motivation entails participation in an activity for the pleasure and enjoyment that are obtained from it. Task climate has been positively associated with self-determined motivation in various studies of physical activity and sport, while ego climate was negatively associated with it (Cox & Williams, 2008; Ntoumanis & Biddle, 1999; Weiss, Amorose, & Wilko, 2009).

Further, numerous studies demonstrate that experiencing intrinsic motivation or types of self-determined motivation during physical activity or sport practice in the three contexts favours the appearance of positive consequences, such as wellbeing (Gagné, Ryan, & Bargmann, 2003; Balaguer, Castillo, & Duda, 2008), the intent to continue practicing (Almagro, Sáenz-López, & Moreno, 2010; Lim & Wang, 2009), and the state of flow (Moreno, Cervelló, & González-Cutre, 2010; Moreno et al., 2008).

In spite of the many studies regarding motivation in the different physical activity and sport contexts, to our knowledge, there are no published studies that have tried to compare these contexts which provide a clear theoretical interpretation of the reasons for which there are certain differentiations in the variables and motivational relationships. Motivational differences between the contexts should be expected, given their distinctive characteristics. In fact, sport and exercise are voluntary activities, while childhood physical education is a mandatory activity. On the other hand, recreational physical activity and sport is very common and completely voluntary, while continuity of competitive sport practice is more affected by variables such as social class, the media, and the effect of cohorts or parents (Latorre et al., 2009). Finally, the age variable affects all three contexts, given that not only childhood physical education is found at a young age, but, in accordance with García Ferrando (2001), the competitive character of physical practice is generally concentrated at earlier ages (15-34 years) than a fun, non-competitive physical activity (35-64 years).

Thus, the objective of this study was to analyse the motivational differences between physical activity and sport participants in three different contexts (physical education, competitive sport, and non-competitive exercisers). First, the mean scores obtained for the perception of motivational climate, the

motivational methods, and the autotelic experience according to the context were compared. Secondly, the predictive power of the motivational climate and the motivation regarding the propensity toward the autotelic experience in the three contexts was analysed.

Although there are no previous studies, by taking into account the differentiating characteristics of the three contexts, it was theorised that in a less competitive and more voluntary context such as that of exercise, the perception of the ego climate and non-self-determined motivation would be less than in physical education and sport. Along these lines, it was expected that the frequency of the autotelic experiences would be higher in exercise (recreational context) and sport (voluntary) than in physical education (mandatory). Further, with regard to the reviewed studies within each context, it was theorised that the perceived motivational climate that involves task and the self-determined motivation would positively predict propensity toward the autotelic experience in the three contexts.

## **METHOD**

### **Participants**

Three independent samples that were collected at different times were utilised. The first sample was composed of 895 students (419 males and 476 females) from physical education classes, who were between 12 and 16 years of age ( $M = 13.91$ ;  $SD = 1.42$ ). They came from various public school settings in an urban setting. The students were from the four courses of compulsory secondary education. In physical education classes, content was mainly focused on sport learning. From the total sample, 591 students (66%) practiced sport outside of the school day, while 304 (34%) did not.

For the second sample, 413 athletes (322 males and 91 females) between the ages of 12 and 16 years ( $M = 13.74$ ;  $SD = 1.34$ ), both from individual sports (track and field, rhythmic gymnastics, wrestling, swimming, canoeing, taekwondo, tennis, and table tennis) and team sports (basketball, team handball, football, indoor football, and volleyball) who belonged to sport academies that participated in a competition were utilised. Forty-nine percent of the athletes participated in individual sports ( $n = 206$ ), while 50.1% practiced team sports ( $n = 207$ ). Seventy-two percent of the athletes practiced between two and three days per week, and 27.8% practiced more than three days per week.

The third sample was composed of 727 non-competitive exercisers (who practiced weight lifting, fitness classes, aerobics, spinning, Body Pump, Pilates, etc.) from various fitness centres. Four hundred and two exercisers were men and 325 exercisers were women, and they were between 16 and 78 years of age ( $M = 32.57$ ;  $SD = 11.39$ ). From the total sample, 26 exercised occasionally

(less than once per week, an occasional weekend, or on vacation), 50 exercised twice per week, and 651 exercised three times or more per week.

## Measures

*Perceived motivational climate.* To measure the perceived motivational climate in physical education classes and the sport context, the Spanish version (Cecchini, González, López Prado, & Brustad, 2005) of the Perceived Motivational Climate in Sport Questionnaire-2 (PMCSQ-2, Newton, Duda, & Yin, 2000) was utilised. Small modifications were needed for its use in physical education classes (e.g. the word coach was changed to teacher, athlete was changed to student, and practice was changed to class). This version that was adapted to the physical education context has been demonstrated to have suitable psychometric properties in Spain (González-Cutre, Sicilia, & Moreno, 2008). The instrument was composed of 33 items grouped into two factors: task climate (17 items, e.g., “The teacher/coach wants us to try new skills”) and ego climate (16 items, e.g. “The teacher/coach dedicates more time to the more skilful”). The instrument began with the phrase “During physical education classes/During the practice of your sport...” and utilised a Likert-type scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

To measure the perceived motivational climate in the context of exercise, the Cuestionario de Medida de las Estrategias Motivacionales [Measurement of Motivational Strategies Questionnaire] (Cervelló, Moreno, Del Villar, & Reina, 2007) was used. This questionnaire began with the phrase “In the fitness centre...” and was composed of 24 items: 12 items for the task climate factor (e.g., “They encourage us to help each other out during the exercises”) and 12 items for the ego climate factor (e.g., “Only the final result is assessed, and it does not matter if I progress or not”). The questionnaire utilised a Likert scale from 1 (*completely disagree*) to 7 (*completely agree*).

*Motivation.* To assess the forms of motivation established by the theory of self-determination, the various instruments that are available in Spanish for each context were utilised. Thus, for the physical education classes, the version of the Perceived Locus of Causality measure (Goudas, Biddle, & Fox, 1994) that was validated in Spanish (Moreno, González-Cutre, & Chillón, 2009) was employed. This scale was composed of 20 items (four per factor) that measured the intrinsic motivation (e.g. “Because physical education is fun”), identified regulation (e.g., “Because I can learn skills that I could use in other areas of my life”), introjected regulation (e.g., “Because I wouldn’t be happy with myself if I didn’t do it”), external regulation (e.g., “Because I will have problems if I don’t do it”), and amotivation (e.g., “But I really feel that I am wasting time in physical education”). The scale began with “I participate in this physical education class...” and responses were given on a Likert-type scale from 1 (*completely disagree*) to 7 (*completely agree*).

In the sport context, the Spanish version (Núñez, Martín-Albo, Navarro, & González, 2006) of the Sport Motivation Scale (Pelletier et al., 1995) was utilised. The scale began with “Why do you practice your sport?” and included 28 items distributed in seven factors (four per factor): intrinsic motivation to know (e.g., “For the pleasure that I feel while learning training techniques that I have never tried before”), to accomplish (e.g., “For the pleasure I feel while improving some of my weak points.”), and to experience stimulation (e.g., “Because I like the feeling of being totally immersed in the activity”); identified regulation (e.g., “Because it is a good way of learning lots of things which could be useful to me in other areas of my life”); introjected regulation (e.g., “Because I must do sports to feel good about myself”); external regulation (e.g., “Because it allows me to be well regarded by the people that I know”); and amotivation (e.g., “It is not clear to me anymore; I don’t really think my place is in sport”). For this study, the three factors of intrinsic motivation were grouped together to facilitate the comparative analysis with the other two contexts, given that the scales utilised did not differentiate between different types of intrinsic motivation. The responses were scored on a Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*).

To measure motivation in the context of exercise, the Spanish version (Moreno, Cervelló, & Martínez Camacho, 2007) of the Behavioural Regulation in Exercise Questionnaire – 2 (BREQ-2; Markland & Tobin, 2004) was utilised. It began with the phrase “I do exercise...” and was composed of 19 items, grouped into five factors: intrinsic regulation (e.g., “Because I think exercise is fun”), identified regulation (e.g., “Because I value the benefits of exercise”), introjected regulation (e.g., “Because I feel guilty when I don’t exercise”), external regulation (e.g., “Because others say I should”), and amotivation (e.g. “I don’t see why I should have to exercise”). Responses were given on a Likert scale from 0 (*not at all true for me*) to 4 (*very true for me*).

*Autotelic experience.* To measure the frequency of autotelic experiences in the three contexts, this dimension of the Spanish version (González-Cutre, Sicilia, Moreno, & Fernández-Balboa, 2009) of the Dispositional Flow Scale-2 (DFS-2; Jackson & Eklund, 2002) was utilised, and the opening phrase varied in accordance with the context: “In physical education classes/During the practice of my sport/When I do exercise...”. The autotelic experience variable was measured with four items (e.g., “The experience is really fun”), which were responded to on a Likert-type scale from 1 (*never*) to 5 (*always*).

## **Procedure**

The school administrators, the coordinators of the sport academies, and the managers of the fitness centres were contacted to inform them of the goals of the research project and to ask for their collaboration. The group of directors facilitated access to the various study samples. The participants were informed that it was a study about the motivations related to physical activity and sport and that their voluntary collaboration was needed to respond to a questionnaire with various questions about this subject, which would take approximately 20

minutes to complete. Informed consent was requested from the participants and authorisation was requested when the participants were minors. The administration of the questionnaires was carried out before practices or classes started, in an area that guaranteed good lighting and comfort for the participants. One of the researchers was present when the participants completed the questionnaires in order to briefly explain the aim of the study, instruct them how to complete the instruments, and resolve any doubts that arose. Anonymity of responses was promised, and participants were asked to respond sincerely after carefully reading all the items. Confidentiality of all the collected data was also guaranteed. The results were available to participants at the end of the study.

### **Data analysis**

The following analyses were carried out: internal consistency of the scales, descriptive analysis, and linear regression. Firstly, the reliability of the scales was tested with Cronbach's alpha. Secondly, a descriptive analysis of the various motivational variables comparing the scores in the three contexts of physical activity was included. Thirdly, a stepwise linear regression analysis was carried out to assess the predicting variables of the autotelic experience in each of the contexts: physical education, sport, and exercise. For that, the motivational climates were introduced as social factors as a first step, and secondly, the different types of motivation as individual variables were introduced. In this analysis, the effect of mediation of the motivation between the perceived motivational climates and the autotelic experience was tested. The analyses were carried out with the statistical package SPSS 18.0.

## **RESULTS**

### **Descriptive statistics**

In table 1, the reliability, mean scores, standard deviation, asymmetry, and kurtosis of the motivational climates, the types of motivation, and the autotelic experience in physical education, sport, and exercise is observed. With regard to the internal consistency of the scales, although some values were lower than recommended (0.70), they can be considered marginally acceptable ( $\alpha \geq 0.60$ ) (Hair, Anderson, Tatham, & Black, 1998; Nunnally & Bernstein, 1994).

For the three contexts, a higher mean score was obtained in the perception of a task climate when compared to the perception of an ego climate. Taking the range of the scales as a reference, the mean task climate was moderately high for the three contexts, while the mean ego climate was moderately low. Although an exact comparison between the contexts cannot be established due to the differences in the ranges for the scales, the results suggest that the mean score for the ego climate was lower for the exercise context than for the other two contexts, as the range of the scale for the exercise context was 1-7. With regard to the different types of motivation, the results demonstrate that the



highest mean for the physical education context was obtained for identified regulation, while for the other two contexts it was intrinsic motivation. Nonetheless, for the three contexts, similar mean scores were obtained for these two variables. For physical education, the mean scores for introjected regulation and external regulation were moderate, for sport, they were moderately high, and for exercise, they were low. Amotivation had mean scores that were moderately low for physical education and sport and very low for exercise. The highest mean for autotelic experience was obtained for non-competitive exercise, followed by sport and physical education.

**Table 1** Descriptive statistics of the Different Variables for the Three Contexts.

Variables	Physical education						Sport						Exercise					
	R	M	SD	$\alpha$	Asym.	Kurt.	R	M	SD	$\alpha$	Asym.	Kurt.	R	M	SD	$\alpha$	Asym.	Kurt.
Task climate	1-5	3.81	0.62	0.85	-0.42	0.10	1-5	3.89	0.66	0.85	-0.73	0.82	1-7	4.81	0.85	0.77	-0.27	0.49
Ego climate	1-5	2.30	0.84	0.91	0.41	-0.70	1-5	2.16	1.16	0.91	0.22	-0.78	1-7	2.59	0.87	0.78	0.28	-0.28
Intrinsic motivation	1-7	5.24	1.20	0.78	-0.85	0.87	1-7	5.55	1.07	0.89	-0.98	1.19	0-4	3.15	0.75	0.77	-0.98	0.89
Identified regulation	1-7	5.44	1.25	0.77	-0.93	0.96	1-7	5.13	1.34	0.71	-0.81	0.59	0-4	2.85	0.57	0.60	-0.38	0.24
Introjected regulation	1-7	3.87	1.30	0.61	-0.13	-0.28	1-7	5.30	1.26	0.64	-0.91	1.12	0-4	1.03	0.94	0.64	0.72	-0.21
External regulation	1-7	3.82	1.41	0.67	0.06	-0.66	1-7	4.38	1.57	0.68	-0.51	-0.14	0-4	0.41	0.67	0.76	1.98	3.85
Amotivation	1-7	2.63	1.39	0.73	0.79	0.01	1-7	2.40	1.89	0.75	0.52	-0.81	0-4	0.36	0.60	0.60	1.92	3.59
Autotelic experience	1-5	3.63	0.82	0.72	-0.37	-0.04	1-5	4.00	0.78	0.67	-0.90	1.01	1-5	4.24	0.61	0.80	-0.76	0.89

Note. R = Range; M = Mean; SD = Standard deviation;  $\alpha$  = Cronbach's alpha; Asym. = Asymmetry; Kurt. = Kurtosis.

## Linear regression analysis

The analysis of the predictor variables revealed that for the classes of physical education (Table 2), the task motivational climate, intrinsic motivation, identified regulation, and introjected regulation positively predicted the autotelic experience, while external regulation and amotivation negatively predicted it. For the sport context (Table 3), and for exercise (Table 4), only task climate and intrinsic motivation positively predicted the autotelic experience in the last step.

**Table 2** *Linear Regression Analysis of the Autotelic Experience in Physical Education*

	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	<i>Corrected R<sup>2</sup></i>
Step 1					0.16**
Task climate	0.51	0.04	0.39**	12.27	
Ego climate	-0.05	0.03	-0.05	-1.68	
Step 2					0.35**
Task climate	0.24	0.04	0.19**	5.93	
Ego climate	-0.01	0.03	-0.01	-0.49	
Intrinsic motivation	0.20	0.02	0.30**	6.99	
Identified regulation	0.08	0.03	0.12**	2.86	
Introjected regulation	0.06	0.02	0.10**	2.76	
External regulation	-0.08	0.01	-0.14**	-4.28	
Amotivation	-0.04	0.02	-0.08*	-2.35	

*Note.* \* $p < 0.05$ ; \*\* $p < 0.01$ ; *SE* = Standard error;  $\beta$  = Regression weight.

**Table 3** Linear Regression Analysis of the Autotelic Experience in Sport

	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	<i>Corrected R</i> <sup>2</sup>
Step 1					0.20**
Task climate	0.51	0.05	0.45**	10.09	
Ego climate	-0.03	0.03	-0.05	-1.05	
Step 2					0.32**
Task climate	0.26	0.05	0.23**	4.69	
Ego climate	-0.30	0.03	-0.04	-0.94	
Intrinsic motivation	0.44	0.06	0.44**	7.18	
Identified regulation	-0.03	0.04	-0.05	-0.78	
Introjected regulation	0.01	0.04	0.01	0.17	
External regulation	0.01	0.03	0.01	-0.01	
Amotivation	-0.01	0.02	-0.01	-0.05	

Note. \*\* $p < 0.01$ ; *SE* = Standard error;  $\beta$  = Regression weight.

**Table 4** Linear Regression Analysis of the Autotelic Experience in Exercise

	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	<i>Corrected R</i> <sup>2</sup>
Step 1					0.15**
Task climate	0.26	0.02	0.37**	10.32	
Ego climate	-0.05	0.02	-0.07*	-2.04	
Step 2					0.34**
Task climate	0.17	0.02	0.25**	7.59	
Ego climate	-0.02	0.02	-0.03	-1.04	
Intrinsic motivation	0.33	0.02	0.41**	11.32	
Identified regulation	0.06	0.04	0.06	1.67	
Introjected regulation	0.01	0.02	0.02	0.46	
External regulation	-0.05	0.03	-0.06	-1.52	
Amotivation	0.02	0.03	0.02	0.58	

Note. \* $p < 0.05$ ; \*\* $p < 0.01$ ; *SE* = Standard error;  $\beta$  = Regression weight.

To analyse the effects of mediation of the motivation between perceived climate and autotelic experience, the subsequent steps were followed, as proposed by Baron and Kenny (1986). According to these authors, so that a variable is mediating the relationship between two variables, the following requisites have to be fulfilled: a) the

independent variable predicts the mediator, b) the mediator predicts the dependent variable, and c) the previous significant relationship between the independent variable and the dependent variable is no longer significant when the relationships between the independent variable and the mediator and between the mediator and the dependent variable are controlled.

Various regression analyses in the three contexts were carried out, taking into account these criteria. For physical education, given that the task climate positively predicted the intrinsic motivation ( $\beta = 0.40$ ,  $p < 0.01$ , corrected  $R^2 = 0.16$ ), identified regulation ( $\beta = 0.45$ ,  $p < 0.01$ , corrected  $R^2 = 0.19$ ), and introjected regulation ( $\beta = 0.28$ ,  $p < 0.01$ , corrected  $R^2 = 0.12$ ), and negatively predicted amotivation ( $\beta = -0.10$ ,  $p < 0.01$ , corrected  $R^2 = 0.20$ ), it can be affirmed that the relationship between task climate and autotelic experience was partially mediated through those variables (given that in the second step, the relationship between task climate and autotelic experience was still significant, although with a smaller regression weight). For sport, the task climate positively predicted the intrinsic motivation ( $\beta = 0.53$ ,  $p < 0.01$ , corrected  $R^2 = 0.28$ ), which allows us to affirm that the relationship between task climate and autotelic experience was partially mediated by intrinsic motivation. In the context of non-competitive exercise, the task climate positively predicted intrinsic motivation ( $\beta = 0.25$ ,  $p < 0.01$ , corrected  $R^2 = 0.08$ ), while the ego climate negatively predicted it ( $\beta = -0.09$ ,  $p < 0.05$ ). These results demonstrate that the relationship between task climate and autotelic experience was partially mediated, while the relationship between ego climate and autotelic experience was completely mediated by intrinsic motivation.

## DISCUSSION

This study examined the motivational differences between physical education students, athletes, and non-competitive exercisers, through the analysis of perceived motivational climate, types of motivation, and the propensity toward autotelic experience in the three contexts. This research represents the first approximation to the comparative study of these variables in the primary contexts of physical activity (physical education, sport, and non-competitive exercise). However, there are numerous research studies that analyse the variables studied in the present study in one of these contexts, which are utilised to discuss the results of the present study. In general, the results demonstrate that, just as there are differences in the general characteristics of the three contexts, there are also differences in the motivational variables that were studied.

First of all, it should be highlighted that the task climate received higher scores than the ego climate for all contexts. Along these lines, in the physical education environment (Cervelló, Moreno, Alonso, & Iglesias, 2006; Moreno, Zomeño, Marín, Cervelló, & Ruiz, 2009; Sicilia et al., 2008), in the sport context (Almagro, Sáenz-López, González-Cutre, & Moreno-Murcia, 2011; Le Bars et al., 2009; Torregrosa et al., 2008), and in non-competitive exercise (Quested & Duda, 2009; Sicilia et al., 2009) there are recent studies that have also found this tendency. This is promising, as the various studies have demonstrated the positive effect of this type of climate on people's motivations. It is likely that professionals in the area of physical activity and sport are beginning to apply the scientific knowledge to their daily functions.

The difference between the average values of the perception of task and ego motivational climates for the three contexts is most pronounced in the non-competitive exercisers, as demonstrated in the results of the present study. The lower value achieved for the perception of ego climate in the exercise context, compared to the contexts of sport and physical education, could be explained by the fact that it is a non-competitive context, where the participant is voluntarily involved. In fact, the competitive character is a defining characteristic of physical practice in a sport context. On the other hand, physical education, apart from being able to provide competitive environments, is defined by its mandatory nature, where the practice of a normative evaluation that provides comparisons between students has been verified as somewhat predominant (López, 1999, 2006).

The type of motivation that obtains the highest value in physical education is identified regulation, which coincides with results from other studies (Standage, Duda, & Ntoumanis, 2005, 2006), while in the other two contexts, it is intrinsic motivation that has the highest mean score. Likely, this is due to the fact that sport and non-competitive exercise are voluntary activities, and, therefore, it seems logical that the primary motive that people have in these contexts is the activity in and of itself. There are studies in the competitive sport context where the strongest motivation is intrinsic motivation (Balaguer et al., 2008; García Calvo, Cervelló, Jiménez, Iglesias, & Moreno, 2010), which also occurs in the non-competitive exercise context (Moreno, Cervelló, y Martínez Camacho, 2007; Moreno, Sicilia, y Muyor, 2008). However, in physical education, although intrinsic motivation also obtains a high score, it seems that the involvement is higher because they believe that the class or what they learn can serve them in some way; thus, they have higher scoring for identified regulation. Nonetheless, the score for identified regulation (although lower than for intrinsic motivation) is also high in sport and in exercise in this study. These values would indicate that the people, in addition to participating for fun, participate in these activities motivated by the importance that they may have to develop other aspects or facets of life. In fact, there are studies in the exercise context where identified regulation has obtained higher scores than intrinsic motivation (e.g., Wilson, Rodgers, Blanchard, & Gessell, 2003).

It is interesting to find that the scores in introjected regulation and external regulation in sport were moderately high, which coincides with results by other studies (Almagro, Conde, Moreno, & Sáenz-López, 2009; Núñez et al., 2006). This could be due to the fact that, on occasion, in this context what athletes seek is to be someone (elite athlete) and to demonstrate to others how good they are (external regulation), in addition to feeling good about themselves (introjected regulation). For physical education, however, the scores are more moderate, but they are not low. This may be due to student's mandatory participation, since, in part, students get involved because the teacher could punish, fail, or pass (external regulation) them or because they believe it is what is correct or what they should do; therefore, they may participate to avoid feelings of guilt and anxiety (introjected regulation). However, for non-competitive exercisers, the scores for external and introjected regulation are low. This is similar to other studies' findings that have analysed this context (Moreno, Sicilia, & Muyor, 2008; Wilson & Rodgers, 2004), which is to an extent reflected in the voluntary nature of exercise, where practice is carried out willingly, for fun, and

because it is important for health, and not so much because one feels bad or to demonstrate something to someone else.

With regard to the autotelic experience, the mean score in the context of non-competitive exercise is higher than in the other contexts. This may seem logical, given that people general exercise because they want to. As Moreno, Conte et al. (2008) affirm, exercise is a comforting, valuable, fun experience that leaves a good impression and that the participant wants to repeat. The mean value of the autotelic experience for the competitive athletes is also moderately high, which seems to be coherent as it is a voluntary activity and is often carried out for fun, although sometimes participation may be affected by parents (Keegan, Harwood, Spray, & Lavalley, 2009; Latorre et al., 2009). However, the score for autotelic experience in the context of physical education was less than in the other two contexts, which would indicate that the students' enjoyment could be negatively affected by the obligation of doing something they do not want to do.

The results of the regression analysis demonstrate that the task climate positively and significantly predicts the autotelic experience in the three contexts, revealing the importance of fostering this type of motivational climate. Further, the motivational climate does not only directly affect the autotelic experience but it is also affected through motivation; in other words, there is a relationship that is partially mediated as demonstrated in the results. This relationship between the task climate and motivation has already been demonstrated in other studies (Baric & Bucik, 2009; Cecchini, González, Carmona, & Contreras, 2004; Cox & Williams, 2008), as well as the direct relationship of the task climate with different positive consequences, such as for example athletic commitment (García Calvo, Leo, Martín, & Sánchez, 2008; Torregrosa et al., 2008) or flow (Moreno, Cano, González-Cutre, Cervelló, & Ruiz, 2009).

It is necessary to highlight that the exercise context is the only context in which the ego climate predicts the autotelic experience, and this relationship is negative and is mediated by intrinsic motivation. This result can be explained by the fact that the people that are involved in this type of activity were not looking to compete or compare themselves with others; therefore, perceiving an ego climate could be associated with decreased intrinsic motivation and enjoyment.

As expected, in accordance with previous studies about motivation and flow carried out in competitive sport (Kowal & Fortier, 2000) and exercise (Moreno, Conte et al., 2008; Sicilia, Águila, González-Cutre, & Moreno-Murcia, 2011), intrinsic motivation is positively related with the propensity toward autotelic experience in the three contexts. Along these lines, it can be observed that in the sport context and in the non-competitive exercise context, the only type of motivation that predicts the autotelic experience is intrinsic motivation, while for physical education, the autotelic experience is predicted by all types of motivation, whether positively (intrinsic motivation, identified regulation, and introjected regulation) or negatively (external regulation and amotivation). This could be due to the fact that in physical education, as it is mandatory, a heterogeneous group of students comes together, some of whom enjoy physical education, others who are indifferent, and finally, some who do not like it. Thus, as there are all types of motivation, and varied scores, it is logical

that the enjoyment (autotelic experience) is related to all of them, whether positively, in the case of the more self-determined motivations, or negatively, in the case of external regulation and amotivation.

Regardless, this study supports the need to foster a task motivational climate in all the physical activity and sport contexts and to develop intrinsic motivation to achieve more chances for the participants to have fun. Further, having participants that tend to achieve autotelic experiences during the practice of physical activity will increase the probability that they will be committed to regular practice (Kimiecik, 2000), since they will want to practice again to relive this experience that was so gratifying (Jackson, 1996). Along these lines, García Ferrando (2006) found that two of the most important motives for sport practice among youth were having fun and enjoying the sport.

The primary limitation of the present study was the use of different measurement instruments, with different ranges of response in each context, which makes the comparison between them more difficult. Nonetheless, a general tendency and some clearly interpretable differences, from a theoretical viewpoint, were observed. Further studies should continue working on the development of instruments that measure motivational variables similarly in various physical activity and sport environments, allowing for more precise and easier comparisons than in this study.

Moreover, in the present study, not all variables that are established by self-determination theory were considered; thus, it would be interesting for future studies to assess the differentiated effect of each of the basic psychological needs on the motivation and different positive consequences, and compare the three physical activity and sport contexts. Further, new studies should carry out a comparative analysis between contexts of different social factors such as autonomy support, session structure, and the relationship of the physical activity or sport professional with the student, athlete, or exerciser. Finally, it is suggested that a deeper analysis of the motivational processes that are present in the non-competitive exercise context be carried out, given that to date, it is less studied.

In conclusion, the results of the study have demonstrated that there are motivational differences between the contexts of physical education, competitive sport, and non-competitive exercise. This is primarily due to the competitive/fun or the voluntary/mandatory nature of each environment. Thus, the relevance and predictive power that the perception of a task motivational climate and the intrinsic motivation has on the autotelic experience in the three contexts is seen. Therefore, the transmission of a task motivational climate by the teacher/coach has positive motivational consequences in the three contexts.

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