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## ORIGINAL

### INFLUENCE OF COACHES TRAINING ON ATHLETES MOTIVATION

### INFLUENCIA DE LA FORMACIÓN DE LOS ENTRENADORES SOBRE LA MOTIVACIÓN DE LOS DEPORTISTAS

**Pulido, J.J.<sup>1</sup>; Sánchez-Oliva, D.<sup>2</sup>; Sánchez-Miguel, P.A.<sup>3</sup>; Leo, F.M.<sup>4</sup>; García-Calvo, T.<sup>5</sup>**

<sup>1</sup> Licenciado en Ciencias de la Actividad Física y el Deporte. Becario FPI en el Departamento de Didáctica de la Expresión Musical, Plástica y Corporal de la Universidad de Extremadura. Cáceres (España). [jjpulido@unex.es](mailto:jjpulido@unex.es)

<sup>2</sup> Doctor en Ciencias de la Actividad Física y el Deporte. Contratado Post-doctoral en el Departamento de Didáctica de la Expresión Musical, Plástica y Corporal de la Universidad de Extremadura. Cáceres (España). [davidsanchez@unex.es](mailto:davidsanchez@unex.es)

<sup>3</sup> Doctor en Ciencias de la Actividad Física y el Deporte. Profesor en la Facultad de Formación del Profesorado. Cáceres (España). Universidad de Extremadura. [pesanchezm@unex.es](mailto:pesanchezm@unex.es)

<sup>4</sup> Doctor en Ciencias de la Actividad Física y el Deporte. Profesor en la Facultad de Formación del Profesorado. Cáceres (España). Universidad de Extremadura. [franmilema@unex.es](mailto:franmilema@unex.es)

<sup>5</sup> Doctor en Ciencias de la Actividad Física y el Deporte. Profesor en la Facultad de Ciencias del Deporte. Cáceres (España). Universidad de Extremadura. [tgarcia@unex.es](mailto:tgarcia@unex.es)

**Spanish-English translators:** Pedro Antonio Sánchez-Miguel  
[pesanchezm@unex.es](mailto:pesanchezm@unex.es)

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## ABSTRACT

The aim of the study was to examine the influence of the coaches' academic and federative training on motivation, enjoyment, boredom and intention to persist levels in youth athletes. Participants were 432 youth athletes (male = 245, female = 187) ranged from 10 to 16 years old ( $M = 13.44$ ;  $SD = 2.92$ ) who participated in individual ( $n = 163$ ) and collective sports ( $n = 270$ ) selected by cluster sampling. Moreover, 88 sport coaches, ranged from 20 to 56 years old ( $M = 35.79$ ;  $SD = 9.58$ ), participated in the study. An analysis of differences with regard to academic and federative coaches' qualification was conducted. Results revealed that athletes trained by coaches without federative training showed greater amotivation levels. Moreover, individuals trained by coaches without academic qualification had higher scores in extrinsic regulation (identified and external). Therefore, findings partially supported the relevance of coaches' qualification levels, due to the differences found in some extrinsic regulations (external), amotivation and boredom.

**KEYWORDS:** Self-determination Theory, coaches, training, sport.

## RESUMEN

El objetivo del estudio era conocer la influencia de las formaciones académica y federativa de los entrenadores sobre los niveles de motivación, diversión, aburrimiento e intención de persistencia en jóvenes deportistas. Para ello, participaron 432 jóvenes con edades entre 10 y 16 años ( $M = 13,44$ ;  $DT = 2,92$ ), pertenecientes a disciplinas deportivas individuales ( $n = 162$ ) y colectivas ( $n = 270$ ), de género masculino ( $n = 245$ ) y femenino ( $n = 187$ ), seleccionados mediante un muestreo por conglomerados. También, participaron 88 entrenadores deportivos, con edades entre los 20 y 56 años ( $M = 35,79$ ;  $DT = 9,58$ ). Se llevó a cabo un análisis de diferencias en función de la cualificación académica y federativa de los entrenadores. Los resultados señalaron que los deportistas dirigidos por entrenadores sin formación federativa presentaban mayores niveles de desmotivación. Asimismo, los deportistas entrenados por técnicos sin titulación académica obtuvieron mayores puntuaciones en las regulaciones extrínsecas (identificada y externa). Por tanto, los hallazgos respaldan parcialmente la relevancia de la formación de los entrenadores, obteniéndose diferencias en regulaciones alejadas del máximo nivel de autodeterminación (externa), desmotivación y aburrimiento.

**PALABRAS CLAVE:** Teoría de la Autodeterminación, entrenadores, formación, deporte.

## INTRODUCTION

It is demonstrated that socializing influences on the development of adolescents during the sport practice in scholar age (Ramis, Torregrosa, Viladrich, and Cruz, 2013). This environment might create an ideal place for athlete integral training (Smoll, Cumming, and Smith, 2011), not only in the perspective orientated to performance, but it also promoting the development of social and personal adolescents' values (Taylor, Ntoumanis, Standage, and Spray, 2010). Thus, it is necessary to consider coaches' qualification with the aim to achieve a greater efficacy during their performance with adolescents (Feu, Ibáñez, and Gozalo, 2010), as well as assess the incidence that this fact might have on athletes' involvement and commitment.

In this regard, one of the most developed theories to explain a person motivation towards the development of an activity, is the Self-Determination Theory (SDT: Deci and Ryan, 2000; Ryan and Deci, 2000). SDT assumes that people are active organism with innate tendencies to the growth and psychological welfare, and they make effort to struggle with aims and integrate their experiences (Deci and Ryan, 2000). Nevertheless, this human natural tendency is not automatically operated, but it requires continues nutrients and supports of the social environment to efficacy perform. In accordance to this internalize process, SDT attempts to explain human behavior through motives that lead to participate in a certain activity, taking into account the differences in the motivational orientations, contextual influences in motivation and interpersonal orientations, interpersonal perceptions, and examining the degree when the conducts are self-determined, that is to say, the degree that people perform their actions voluntary and autonomous.

Thus, intrinsic motivation which refers to the engagement of activities for the feelings of enjoyment, pleasure, interest, and satisfaction as a result of the participation itself. In a second level, appears extrinsic motivation, defined as behaviors controlled by external contingencies. In this type of motivation there are different regulations, which interact from higher to lower self-determination level. Firstly, integrated regulation turned up, which refers to the activity developed in a person style of life. Hence, this regulation has not been investigated in this research, because some authors defend that it is not a regulation characteristic in adolescents, because in this stages the individual does not achieve to integrate different aspects that fully complete he/she personality (Vallerand and Rosseau, 2001). Following, identified regulation refers to the understanding and putting value on an activity, and the outcomes associated with the activity. Next, introjected regulation is defined by the engagement in an activity to avoid feelings of guilt and shame, or to achieve feelings related with personal ego, such as pride. Lastly, external regulation is defined as behaviors controlled by contingencies external to the individual, such as obtain rewards, avoid punishments, or meet external expectations (Deci and Ryan, 2000). Finally, amotivation represents absence of motivation, intrinsic or extrinsic, engaging in an activity without intention and volition (Deci and Ryan, 1985).

Central to SDT is the concept that self-determined motivation is determined by the satisfaction of three basic psychological needs (BPN): autonomy, competence and relatedness. Autonomy satisfaction is a need for feelings of volition and free will; the sense that the individual has personal control of his or her own life. Competence satisfaction refers to the need to effectively carry out behaviour to achieve desired outcome and the ability to handle situational demand. Lastly, relatedness satisfaction refers to the need to interact, feel connected to, and accepted by significant others (Ryan and Deci, 2002). In accordance to this, different authors consider that interpersonal coach style should be orientated to the support of the BPN (Castillo, González, Fabra, Balaguer, and Mercé, 2012; Pelletier, Fortier, Vallerand, and Brière, 2001), helping that these BPN are satisfied, and therefore, self-determination level through the sport practice (Ryan and Deci, 2000). This behavior is characterized because the coach adopts a conduct that help the need for autonomy, promoting take decisions of his/her athletes, support the need of competence, with training tasks that lead to a balance between goal/difficulty and support the need for relatedness, helping an integrate environment among all the sport team members, thanks to confidence and knowledge exercises, group dynamics, role games, confidence activities, etc.

In this regard, numerous works have included parents (O'Rourke, Smith, Smoll, and Cumming, 2012), peers (Vazou, Ntoumanis, and Duda, 2005) and coaches (Adie, Duda, and Ntoumanis, 2012; Álvarez, Balaguer, Castillo, and Duda, 2009; 2012; Balaguer, Castillo, and Duda, 2008; Sánchez-Oliva, Leo, Sánchez-Miguel, Amado, and García-Calvo, 2012; Torregrosa, Sousa, Villadrich, Villamarín, and Cruz, 2008) in their investigations. These studies have attempted to explain the importance of those socializing agents on adolescents motivation and positive or negative consequences (Adie et al., 2012; Álvarez, et al., 2009; 2012; Boixadós, Cruz, Torregrosa, and Valiente, 2004; Núñez and Martín-Albo, 2004), demonstrating the importance that coach generates for the development of adolescents' cognitive and emotional consequences.

Specifically, taking into account coaches' training, the study by Sánchez-Oliva, Sánchez-Miguel, Amado, Leo and García-Calvo (2010) is highlighted, where authors examined the difference in the speech conduct regarding aspects such as feedback, content, quantity and destination of the football coaches information with federative certification and training periods, finding that coaches with higher university degree in Physical Activity and Sport Sciences, during the initial information and in the break games, they emphasized because of his/her greater clarity, greater structure and higher optimize of the quantity of the speech used. Moreover, a relevant study was conducted by Feu et al. (2010) who assessed coaches training in tactical, technical, physical, as well as program and plan from training categories in handball, concluding that coaches from higher levels with federative certifications had significant differences respecting those coaches with lower certifications, that is to say, coaches with training had greater knowledge in tactical, technical, physical and program and planning of the training than non qualified coaches.

Nevertheless, there are just a few works that are examined the analysis of the importance of coaches' academic and federative training, and their influence on athletes motivational variables. Therefore, the current study aims to achieve an interesting scientific contribution, demonstrating the differences regarding coaches training and the motivational processes developed by their athletes. Thus, the aim of this study was focused on test the possible differences promoted by the type of coaches' federative and academic training in variables such as perception of their coaches' support to the BPN, satisfaction of their BPN, type of motivation, enjoyment and boredom. Hence, taking into account the main aim of the study, the hypotheses suggested were that athletes trained by a coach with greater academic training and higher federative degree had greater scores than athletes trained by coaches with lower training, in variables such as perception of their coaches' support to the BPN, satisfaction of the BPN, more self-determined motives of practice and enjoyment, being inverse with low self-determination levels and boredom.

## METHOD

### *Participants*

A total of 432 athletes from training categories formed the sample, ranging in age from 10 to 16 years old ( $M = 13,44$ ;  $SD = 2,92$ ). Overall participants, 245 were male and 187 were female, from 19 different federative modalities, both individuals ( $n = 162$ ), and team sports ( $n = 270$ ). Moreover, 88 sport coaches, ranging in age from 20 to 56 years old ( $M = 35,79$ ;  $SD = 9,58$ ) participated in the study. Overall athletes, taking into account coaches academic training, 64 were coaches without any training, 124 were trained by coaches with intermediate training and 244 athletes were trained by coaches with upper degree. Furthermore, taking into account federative training, 181 individuals were trained by a coaches without any certification, 137 individuals were supervised by coaches with intermediate certification and 114 were trained by coaches with upper certification. All of them were randomly selected by conglomerate, taking into account the whole population of Extremadura (Spain). Cities and clubs were chosen regarding their participation and commitment to collaborate in the study, their geographical situation in the region (with the aim to be representative), and bear in mind the possibility that the main investigator could travel to that city.

### *Instruments*

*Perception of Support to the BPN.* To assess coaches' perception of support to the needs of autonomy, competence and relatedness, an adaptation to the sport context of the Questionnaire of the Support to the Basic Psychological Needs (Sánchez-Oliva, Leo, Amado, Cuevas, and García-Calvo, 2013), modifying the academic issues for sport concepts. Thus, the introductory sentence of the original instrument "During my Physical Education classes, my teacher..." was changed by "During my trainings, mi coach..." followed by 12 items that

assessed perception of support to the autonomy (4 items; i.e. “He/she tries that we are free to perform the exercises”), perception of support to the competence (4 items; i.e.: “He/she always attempts that we achieve the aims indicated in the tasks”), and perception to support to the relatedness (4 items; i.e.: “He/she encourages that we all feel integrated”). Due to the measurement instrument was an adaptation to the sport context, a confirmatory factorial analysis through the bootstrapping method was conducted. To achieve this purpose, 12 items were included as reactive which composed the scale, grouping in three factors that formed the instrument as latent variables of primary order correlated among them, obtaining a scores between ,69 to ,90. The range of items saturations on primary order varied between, 60 to, 80. Adjusted index of the factorial model showed acceptable values (Hu and Bentler, 1995):  $\chi^2/df = 4, 33$ ; CFI=, 93; TLI =, 91; GFI =, 93; SRMR =, 05 and RMSEA = ,08. Internal consistency was measured through Cronbach Alpha, obtaining adequate scores of .78 for support to autonomy, .79 for support to competence and, .82 for support to relatedness.

*Satisfaction of the BPN.* To measure satisfaction of the basic psychological needs, an adaptation into sport of the Spanish version (Moreno-Murcia, González-Cutre, Chillón, and Parra, 2008) of the Basic Psychological Needs Scale of Measurement (BPNES: Vlachopoulos and Michailidou, 2006), used and validated in the scholar domain, changing in each subscale the concepts referred to the academic context for the sport domain (i.e. “I think that I can fulfill classes’ requests” for “I think I can fulfill trainings demands”). The original scale had an introductory sentence: “In Physical Education classes”, adapted into sport context: “In the sport practice...”, composed of 12 items that measured satisfaction of the need for autonomy (4 items, i.e.: “Tasks I perform are adapted to my interests”), satisfaction of the need for competence (4 items, i.e.: “Tasks are things that I do very well”), and satisfaction of the need for relatedness (4 items, i.e.: “I do friendly relationships with my teammates”). A similar adaptation to the former instrument explication was developed, obtaining values in the correlations of the primary order latent variables between, 56 to, 82. The range of items saturations was between, 52 to, 89. Moreover, a confirmatory factorial analysis to verify the validity was conducted, showing the following adjusted index:  $\chi^2/df = 2,62$ ; CFI= ,97; TLI = ,95; GFI = ,97; SRMR = ,04 and RMSEA = ,06. Factors’ reliability was .77 for satisfaction of the need for autonomy, .78 for the need for competence, and .86 for the need for relatedness.

*Type of motivation.* To test the type of motivational regulation, an adaptation to the sport context of the Questionnaire of Motivation in Physical Education (CMEF: Sánchez-Oliva, Amado, Leo, González-Ponce, and García-Calvo, 2012), originally made and developed for the academic context, adapting the concepts to the sport domain, was used. The original instrument started with the sentence: “I participate in Physical Education classes...”, modified for the sentence: “I play this sport for...”, followed by 20 items that assessed intrinsic motivation (4 items, i.e.: “Because it is funny”), extrinsic motivation; identified regulation (4 items, i.e.: “Because for me it is one of the best ways to achieve

useful capabilities for my future”), introjected (4 items, i.e.: “Because I feel guilty if I do not participate in the exercises”) and external (4 items, i.e.: “Because I want my teammates appreciate what I do”), and amotivation (4 items, i.e.: “I do not know why I practice this sport”). However, the fact that the scale in an adaptation to the sport context, a similar process to the instruments previously indicated, was conducted. Hence, 20 items were selected as reactive, grouped in five primary order factors, obtaining correlations values from  $-,21$  to  $,74$ . The saturations range of the indicators were between  $,52$  to  $,82$ . Adjusted index showed acceptable scores (Hu and Bentler, 1995):  $\chi^2/df = 2,80$ ; CFI =  $,92$ ; TLI =  $,91$ ; GFI =  $,92$ ; SRMR =  $,05$  and RMSEA =  $,06$ . Internal consistency was  $,70$  for intrinsic motivation,  $,79$  for integrated motivation,  $,81$  for introjected,  $,83$  for external and  $,85$  for amotivation.

*Enjoyment and boredom.* To examine athletes’ enjoyment and boredom, the Spanish version (Balaguer, Atienza, Castillo, Moreno, and Duda, 1997) of the sport satisfaction scale (Duda and Nicholls, 1992), was used. The scale was composed of 6 items, which evaluate enjoyment (3 items, i.e.: “I usually enjoy practicing sport”), and boredom (3 items, i.e.: “When I play sport, I usually get bored”). A confirmatory factorial analysis, when the following adjusted index were found:  $\chi^2/df = 6,30$ ; CFI =  $,97$ ; TLI =  $,95$ ; GFI =  $,97$ ; SRMR =  $,04$  and RMSEA =  $,11$ , was conducted. Internal consistency was  $,86$  for enjoyment and  $,88$  for boredom.

Responses of the instruments previously explained were rated on a Likert scale, which ranged from 1 (totally disagree) to 5 (totally agree).

*Coaches’ training levels.* To test the different coaches’ training levels, two scales indicating their qualification levels, were created. According to the federative level, three possibilities at sport level were created: “Without training” (without any type of training or sport instructor), “Intermediate Training” (Level I and II coaching, obtaining both for federations and homologate schools), and “Upper Training” (National Coach Level III, obtaining for federations and/or homologate schools). Following, general academic training (including specific training) was evaluated taking into account professional qualifications indicated by the Government (BOE: Spanish Royal Order 1913/1997): “Without training” (none or Scholar Degree), “Intermediate Training” (High School of Professional Training), and “Upper Training” (Bachelor and General Undergraduate).

### *Procedure*

The present study was supported by the Ethic Committee of the University of Extremadura, according to the rules indicated in the Helsinki Declaration in 1964. Moreover, different federations to explain the study proposal and asking for permission were contacted. Following, parental consent was also obtained for all participants prior to starting the study. Once the consents from parents, clubs and coaches were collected, and before data collection, coaches were explained about the items nature, with the aim that they explain later to athletes. All questionnaires were completed online, via Google Doc Application, which

participants could access via a link provided by the researchers. It was emphasized to the participants that the completion of the questionnaires was voluntary, that their responses would remain anonymous, according to the ethics guide of the American Psychological Association (APA, 2009), and that they should answer honestly regarding their feelings. The questionnaires took approximately 15-20 minutes to complete.

### *Data Analysis*

The statistics programs SPSS 19.0 and AMOS 18.0 were used for the data analysis. Firstly, the questionnaires validity (through Confirmatory Factorial Analysis), and internal consistency (Cronbach Alpha coefficient) were tested. Later, a descriptive analysis and bivariate correlations through Pearson coefficient correlation were conducted. Lastly, an analysis of variance with two randomly factors, with the aim to examine the individual and whole effect of the independent variables (trainings) on dependents.

## **RESULTS**

### *Descriptive Analysis*

Table 1 shows the descriptive scores of the variables included in the study, as well as the mean values of the variables differing coaches training levels, both academic and federative. Descriptive values showed that perception of support to the need for relatedness was slightly higher than perception of support to the need for competence and autonomy, respectively. Satisfaction of the need for relatedness had a greatest score of the athletes' BPN, all of them very close to the maximum values. All motivational regulations emphasized by their high self-determination levels, progressively decreasing in the motivational continuum, with the exception of the external regulation. Amotivation showed the lowest value of every motive of practice. Finally, high score was found in the enjoyment factor, and normal values in boredom. Regarding reliability instruments, acceptable Cronbach Alpha index were found in every factors, over .70 (Nunnally, 1979), ranging from .71 to .88.

According to coaches trainings, if we take athletes' academic qualification trained by coaches with high trainings into account, the values found in the three perception of support to the BPN, satisfaction of the needs for autonomy and competence, intrinsic motivation and external regulation were highlighted, over athletes trained by coaches with lower academic training. Furthermore, in accordance with the coaches' federative training, athletes' scores supervised by a instructor with greater federative qualification in the perception of support to the needs for competence and relatedness, and satisfaction of the need for relatedness, respecting those individuals trained by coaches with lower training, were emphasized. Moreover, means in the variable of the athletes' external regulation supervised by coaches without training were highlighted.



**Table 1.** Descriptive analysis of all variables included in the study and the different training levels.

Variables	Total M(SD)	General Academic Training			Federative Training		
		1 M(SD)	2 M(SD)	3 M(SD)	1 M(SD)	2 M(SD)	3 M(SD)
Autonomy Sup.	3,82(.09)	3,89(.13)	3,67(.08)	3,89(.05)	3,79(.09)	3,78(.07)	3,88(.12)
Competence Sup.	4,56(.61)	4,43(.09)	4,58(.05)	4,59(.04)	4,51(.05)	4,51(.06)	4,57(.08)
Relatedness Sup.	4,57(.63)	4,43(.09)	4,53(.06)	4,65(.04)	4,52(.05)	4,52(.06)	4,57(.09)
Autonomy Sat.	3,96(.79)	4,08(.12)	3,82(.07)	3,99(.05)	3,90(.07)	3,89(.08)	4,10(.11)
Competence Sat..	4,36(.62)	4,31(.10)	4,29(.06)	4,37(.04)	4,35(.05)	4,32(.07)	4,31(.09)
Relatedness Sat.	4,62(.59)	4,76(.09)	4,58(.05)	4,62(.04)	4,61(.05)	4,63(.06)	4,72(.08)
Intrinsic	4,53(.59)	4,44(.09)	4,50(.05)	4,57(.03)	4,58(.05)	4,43(.06)	4,50(.08)
Identified	4,31(.74)	4,37(.11)	4,29(.06)	4,29(.04)	4,43(.06)	4,17(.07)	4,35(.10)
Introjected	2,94(1,24)	3,12(.19)	2,87(.11)	2,96(.08)	3,08(.10)	2,72(.12)	3,14(.17)
External	3,21(1,22)	3,16(.18)	3,10(.11)	3,23(.08)	3,44(.10)	2,86(.12)	3,19(.16)
Amotivation	1,41(.87)	1,69(.13)	1,31(.08)	1,47(.06)	1,37(.07)	1,46(.09)	1,65(.11)
Enjoyment	4,74(.58)	4,68(.09)	4,78(.05)	4,71(.04)	4,80(.05)	4,73(.06)	4,65(.08)
Boredom	1,34(.81)	1,51(.12)	1,30(.07)	1,40(.05)	1,28(.07)	1,34(.08)	1,57(.11)

Note. Sup. = Support; Sat. = Satisfaction

### Bivariate Correlations Analysis

With the aim to know the relationships between the variables included in the study, a bivariate correlation analysis with each variable was conducted. Firstly, table 2 shows that perception of support to the BPN was positively related with athletes' satisfaction of the BPN. Moreover, the three satisfaction of the BPN were associated with intrinsic and identified regulation, whereas satisfaction of the needs for competence and relatedness were related with introjected and external regulation. On the other side, amotivation was negatively related with enjoyment and positively related with boredom. Lastly, enjoyment was positively associated with the three perceptions of support, satisfactions of the BPN and more self-determined motivations, whereas was negatively related with amotivation.

**Table 2.** Correlations and descriptive statistics of the study.

Variables	1	2	3	4	5	6	7	8	9	10	11	12
Autonomy Sup.	-											
Competence Sup.	,48**	-										
Relatedness Sup.	,46**	,72**	-									
Autonomy Sat.	,61**	,52**	,51**	-								
Competence Sat..	,39**	,54**	,51**	,64**	-							
Relatedness Sat.	,31**	,49**	,62**	,47**	,59**	-						
Intrinsic	,22**	,34**	,33**	,35**	,44**	,40**	-					
Identified	,23**	,32**	,27**	,30**	,36**	,24**	,49**	-				
Introjected	,15**	,05	,05	,16**	,15**	,06	,30**	,31**	-			
External	,16**	,14**	,13**	,17**	,27**	,10*	,36**	,35**	,63**	-		
Amotivation	,14**	-,05	-,07	,06	-,04	-,11*	-,06	-,00	,32**	,27**	-	
Enjoyment	,21**	,42**	,42**	,38**	,56**	,50**	,54**	,33**	,13**	,16**	-,23**	-
Boredom	,09	-,08	-,11*	,00	-,11*	-,16**	-,15**	-,03	,19**	,15**	,74**	-,31**

\*\* $p < .01$ ; \* $p < .05$ . Note. Sup. = Support; Sat. = Satisfaction

### *Inferential Analysis*

With the aim to test the differences between the types of training and the variables included in the study, a Multivariate Analysis of Variance (MANOVA) of two randomly factors, was conducted. Firstly, the principal effect of each training was tested. Following, a comparison by pairs with the purpose to know the possible differences regarding training levels of each qualification, both academic and federative, was conducted. Lastly, with the aim to assess the effect of the interaction of training on the other, a mixed model analysis was developed.

According to coaches' general academic training, table 3 shows significant differences in amotivation. Specifically, according to pairs comparison, significant differences in the amotivation variable emerged, emphasizing higher scores in athletes trained by coaches without training, regarding those coaches with intermediate training ( $p = .04$ ). Moreover, any significant differences emerged in the rest of variables.

Taking into account coaches' federative training, table 3 shows that there are significant differences in identified and external regulation, whereas there are not significant differences in the rest of variables included in the study. Specifically, according to the different levels indicated in the research to test federative training, positive differences in individuals supervised by coaches without training respecting athletes trained by coaches with intermediate training in identified regulation ( $p = .02$ ). Furthermore, positive significant differences emerged in the external regulation in athletes supervised by coaches without training regarding those instructors with intermediate trainings ( $p = .00$ ).

Lastly, if we focus on the interactions between both trainings, significant differences in identified regulation, amotivation and boredom emerged.

**Table 3.** Analysis of the differences regarding general academic and federative training, and the interaction between them.

Variables	Academic Training			Federative Training			Academic Training *Federative		
	F	p	η <sup>2</sup>	F	p	η <sup>2</sup>	F	p	η <sup>2</sup>
Autonomy Sup.	2,26	,10	,01	,27	,76	,00	,47	,75	,00
Competence Sup.	1,37	,25	,00	,24	,78	,00	1,10	,35	,01
Relatedness Sup.	2,84	,06	,01	,12	,88	,00	,67	,61	,00
Autonomy Sat.	2,31	,10	,01	1,48	,22	,00	1,66	,15	,01
Competence Sat.	,71	,49	,00	,11	,89	,00	1,42	,22	,01
Relatedness Sat.	1,32	,26	,00	,63	,53	,00	,38	,82	,00
Intrinsic	1,09	,33	,00	1,87	,15	,00	,98	,41	,00
Identified	,21	,81	,00	3,53	,03**	,01	2,79	,02**	,02
Introjected	,66	,51	,00	2,97	,05	,01	1,73	,14	,01
External	,48	,61	,00	6,82	,00**	,03	,85	,49	,00
Amotivation	3,23	,04**	,01	1,99	,13	,00	3,34	,01**	,03
Enjoyment	,68	,50	,00	1,40	,24	,00	1,58	,17	,01
Boredom	1,11	,33	,00	2,43	,08	,01	2,49	,04**	,02

\*\**p* < .01; \**p* < .05. Note. Sup. = Support; Sat. = Satisfaction

## DISCUSSION

The current study aims to test the incidence of coaches' levels trainings (general academic and federative training) on athletes' motivational variables. Results showed that coaches' training influenced on athletes' motivational variables, leading to significant differences in youth self-determination levels towards their practice.

Thus, according to the outcomes and based on the coaches' general academic training, data revealed that more amotivated athletes were those individuals supervised by coaches without any type of training. Nevertheless, athletes who showed low levels of amotivation, and therefore, with significant differences with the others, are those athletes supervised by coaches with intermediate training. An explanation to the former indication might be that coaches with intermediate trainings have a perspective focused on the sport instructor, adjusting to the work developed in this stage where the athletes included in the study are. Moreover, another suggestion can be that coaches without any type of training do not consider those periods as a training stage of adolescents' integral development, where motivation levels, grounded on a SDT perspective, are relevant to have a greater intention to persist or lower risk of dropout behavior (Jöesaar, Hein, and Hagger, 2011).

In this regard, according to Allen and Hodge (2006), in a qualitative research that examined coaches' motivational climate, they concluded that the environment might be influenced by the type of coaches' training, and it is an important antecedent to bear in mind for satisfaction of the needs of autonomy

and relatedness in athletes. In accordance to this, Olmedilla, Ortiz, Andreu and Lozano, (2004) showed the relevance to optimize coaches training, mainly respecting to psychological issues, with the intention to increase reinforcements, strategies and possibilities of intervention with their athletes. In this regard, when coach efficacy is increased, motivational antecedents (social factors) might be improved, and therefore, help more self-determined motives in adolescents, followed Jowett and Nezelek (2011) suggestions, who demonstrated the coach as a fundamental social agent in these development stages.

On the other side, if we take federative training into account, children and adolescents supervised by coaches without any training, had the greatest scores in identified, introjected and external motivational regulation, regarding coaches with third and second level, respectively. However, if we parcel each regulation, and starting with the identified regulation, which is considered an autonomous regulation and close to the self-determined maximum of the motivational continuum, the obtained results are surprised. The reason of this finding might be that coaches with second and third level trainings are not satisfied with their role, because their training should be orientated to an older and more professional sample. Contrariwise, if we assess external regulation, we can show that athletes trained by coaches with lower formation, are those who had higher values in this motive of practice. Another reason, it might be justified by the temporality of the federative courses, which are taught by different federations and private homologate institutions, and short-term nature. This fact leads that coaches' training with federative qualification is not the most appropriate, and so, contents referred to promotion and optimization of psychosocial issues, which give to coaches some strategies to promote motivational variables leading to the durability of adolescents in the sport practice, are null in these types of trainings.

According to these results, coaches with lower federative training focused on the competitive issues and rewards, such as victories, gifts, or scores, etc. than coaches with higher degree. These findings are in consonance with those that revealed that coaches with lower training observe in teaching categories that a more qualified coach perceives in high performance sport, that is to say, they see in adolescents the development of maximum competitiveness in the sport, where victory is emphasized over any other aspect, and overall, the socializing and educative role that sport plays in these stages (Weiss and Smith, 2002).

Therefore, the main conclusion of the study is that it is important to consider coaches training in teaching categories, because the significant in motivational variables results, such as identified and external regulation, amotivation, and consequences such as boredom, key constructs for persistence or sport dropout in many adolescents. Therefore, it is important to highlight that a training of any individual is a wide process that include a whole of learning taught in administrations or federative institutions (Colom, 2005), and so, the importance that these knowledge acquire, with the aim to efficacy promote a complex and full function, such as train to athletes in teaching categories.

On the other side, it is important to note some limitations of the study. Regarding some of the instruments used for the development of the research, some adapted instrument to the sport context, previously validated in the academic domain, were used. Despite the adaptation was explained in a simple modification of the concept referred to the context, the original scales belonged to other domains. Thus, a Confirmatory Factorial Analysis, with the aim to verify the appropriateness of the instruments to this research. Another limitation is that federative courses have not a study program defined, and so it is impossible to assess the characteristics of the federative training received by coaches.

Furthermore, according to the results found, as a perspective of future it might be interesting to promote training programs with coaches in teaching categories, focused on the promotion of psychosocial aspects. To achieve this purpose, it is necessary intervention programs not only focused on the sport domain, but even in those focused on other contexts such as the educative domain. Moreover, it might be also adequate to develop funding programs by public or private institutions, with the aim to make aware to agents involved in the teaching sport of the importance of motivational variables to enhance the adherence in the sport practice, where competition is necessary as a learning tool, but not an end in itself.

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