

Research article

Motivational Profiles in Physical Education and Their Relation to the Theory of Planned Behavior

Juan Antonio Moreno-Murcia, Eduardo Cervelló Cervello Gimeno, Elisa Huéscar Hernández ✉, Noelia Belan-do Pedreño and Jesús Jesus Rodríguez Marín

Faculty of Social and Juridical Sciences, Miguel Hernández University of Elche, Spain

Abstract

The aim of this study was to establish motivational profiles for doing physical activity according to the variables from the theory of planned action in a sample of 698 students aged 14 to 16. The instruments used were the Questionnaire of Behavioral Regulation in Sport (BRQ-R) and the Questionnaire of the Theory of Planned Behavior (TCP). Cluster analysis revealed two motivational profiles: a "self-determined" profile with high scores in intrinsic motivation and low scores in extrinsic motivation and amotivation, and a "non self-determined" profile with low scores in intrinsic motivation and high scores in extrinsic motivation and amotivation. Positive significant differences in attitudes, norms, and intent to control were found for the self-determined profile related to "non self-determined" profile.

Key words: Adolescents, self-determination, planned behavior, physical education, motivation.

Introduction

Recent findings about the numerous physical and psychological benefits from participating in any type of physical activity (American College of Sports Medicine, 2000) have led to a new line of research which focuses on the search for behavioral patterns that define the main types of attitude that adolescents have towards sports activities (McNeill and Wang, 2005; Moreno et al., 2008; Ntoumanis, 2002). These patterns, known as motivational profiles, are generated from motivation due to its important role in commitment to sports (Iso-Ahola and St. Clair, 2000). This approach allows students to be assigned to determined groups with similar motivational characteristics that are distinct from the others, enabling the proposed objectives to be achieved. In the area of physical education, the analysis of motivational profiles will make it possible to intervene to help those who most avoid participating in sports and physical activity in the hope of encouraging a more positive motivation, and consequently, a greater adherence to activity among adolescents. In establishing these profiles, there is a need to consider social factors, which not only determine their nature but also their consequences (Vallerand, 2001).

To date, the majority of studies about motivational profiles in sports have used the Self-determination theory (Deci and Ryan, 1985; 1991) as a theoretical basis and have been focused primarily on competitive and recreational contexts (Moreno et al., 2007; 2008; Vlachopoulos

et al., 2000), but few studies have addressed the area of physical education (Moreno et al., 2010).

Self-determination theory has proven to be particularly useful enabling us to explain the why and wherefore of people's behavior, and in the physical activity context it has been used for understanding the (intrinsic or extrinsic) reasons people are committed to sports and physical activity (Vallerand et al., 1987). Over the last few decades research has demonstrated that people's behavior can be partly explained by these types of motivation (Deci and Ryan, 1985; Moreno et al., 2005; Vallerand et al., 1997). This being the case, several types of motivation could lead to different results, therefore reflecting on the multi-dimensional nature of this construct.

In Self-determination theory, the different types of motivation range along a continuum that proposes three fundamental forms of behavior regulation: "self-determined", "non self-determined" or "demotivated". Intrinsic motivation would be the one which produces the most self-determined behaviors and amotivation the one which would produce the least self-determined behaviors. Within the continuum of self-determination, identified regulation (e.g. doing a physical activity for the benefit it provides a person) and intrinsic motivation (e.g. doing a physical activity for the enjoyment of the activity itself) are forms of motivation which are progressively more self-determined, since they represent behaviors based on one's own decision. At the other end of the continuum, in introjected regulation (e.g. doing an activity to avoid feeling guilty) and external regulation (e.g. doing an activity under obligation or punishment) doing sports will still be instrumental as in identified regulation (Deci and Ryan, 2000). Finally, amotivation is characterized because the subject *has no intention* of doing something (e.g. not knowing why it is necessary to do physical activity) and is the least self-determined motivational form. Until recently one of the limitations in the approach to the study of motivation as a fundamental element for understanding behavior towards physical activity was its study as an isolated construct, without considering the possible antecedents or consequences (Vallerand, 1997; 2001). In order to avoid this obstacle and considering that all types of motivation are present to a different degree in the same person (Deci and Ryan, 1991; Vallerand and Fortier, 1998), Vallerand (1997) suggested that research should contemplate how different types of motivation can be combined into different motivational profiles so that it may be possible to discover which patterns

relate to more positive results. In the context of sports and physical activity, studies have demonstrated that a self-determined profile with high scores in intrinsic motivation and identified regulation and low scores in external regulation and amotivation, is related with more positive results, such as establishing physical activity as an integral element of life style.

On the other hand, viewing the Vallerand (2001) suggestion about the usefulness of taking into account the antecedents and consequences of motivation, one fundamental aspect is the concept of the intention to carry out the physical activity. This antecedent contributes to conditioning the final behavior of a person with respect to sports and physical activity. In this sense, the Theory of Planned Behavior (Ajzen, 1985; 1991; 2011) which has its roots in the Theory of Reasoned Action (Fishbein and Ajzen, 1975), hypothesizes that the main precursor of behavior is the intention of carrying it out, but only in conditions where a person believes that behavior is under their voluntary control. Intention is defined as the conscious decision to carry out a certain behavior (Ajzen and Madden, 1986). The relationship between this theory and motivation is determined by the assertion that behavioral intention encompasses the motivational factors which influence behavior (Ajzen, 1991; Sheeran, 2002; Sniehotta et al., 2005). Furthermore, this intention is determined through the positive or negative evaluation that each person makes with respect to this behavior. This is what is known as (positive or negative) *attitude*, which consists of two components: one is cognitive, which reflects knowledge of the effects of the behavior in question and the other is affective (or evaluative) which reflects the positive evaluation of such effects and is associated with the degree of pleasure or enjoyment linked to doing this activity (Ajzen, 1996, 2001; Chan and Fishbein, 1993). Another of the elements that this theory postulates is *subjective norms*, which also consists of two elements: the person's perception of the extent to which significant others would want him or her to perform the behavior in question (e.g., most people who are important to me would want him or her to perform physical activity in the next month); and a person's motivation to comply with its "referents" (people who are important to he/she). Finally, the person's perception of the extent to which the internal and external factors may facilitate or hold up behavioral performance, i.e. *perceived behavioral control* (e.g. I have complete control over whether or not I perform physical activity in the next month). The three components that make up the Theory of Planned Behavior (attitude, subjective norm and perceived behavioral control) have proven to be useful in the last few years for understanding health behaviors (Conner and Sparks, 2005; Carpi et al., 2007; Rodríguez-Marín and Neipp, 2008), and consequently their contribution could be useful to help understand behavior towards sports and physical activity. Although some studies have recently applied the Theory of Planned Behavior to the area of sport (Armitage, 2005; De la Vega et al., 2010; Jackson et al., 2003; Kwan et al., 2009; Skar et al., 2008), to date there is no study within the specialized bibliography that has analysed the role of intention, norm, attitude and control in the different moti-

vational profiles applied to the educational context. Furthermore, the results in relation to the role that these variables play in the intention of participating in sport and physical activity are on occasion contradictory. Therefore, whilst behavioral control seemed to be the component with the greatest capacity to predict behavioral intention and behavior itself (Ajzen, 1991), in the context of physical activity some later studies have indicated attitude as the best predictor of intention towards participating in sport, while subjective norm rarely seems to contribute to the decision of carrying out a behavior (Blue, 1997; Godin and Kok, 1996; Hausenblas et al., 1997). Recently, however, De la Vega et al. (2010) found a positive relation between subjective norm and behavior carried out by professional footballers.

In the face of this controversy, the first objective of this study was to analyze the motivational profiles for participating in sport and physical activity among physical education students and to look at whether these patterns were similar to those found in other samples of sportspeople. The first hypothesis was that two fundamental motivational profiles would be found among physical education students: the first profile would be the most self-determined, with high scores in both intrinsic motivation and the forms closest to self-regulation, and low scores in undesirable behaviors such as sports dropout; the second profile would be non self-determined, with low scores in intrinsic motivation and high scores in amotivation. Given the strong relationship between physical activity and the Theory of Planned Behavior variables (Blue, 1995; Godin, 1993; Hagger et al., 2002), as well as the controversies found in studies regarding this, the second objective of this study aimed to show how the components of this theory related to the hypothesized motivational profiles. The variables that make up the Theory of Planned Behavior and which determine the intention to participate in sport and physical activity (attitude, norm, control) were expected to relate positively to the profile of students with a more self-determined motivation.

Methods

Participants

Data were collected from a sample of 698 physical education students from secondary education schools (331 males and 367 females), aged between 12 and 16 ($M = 14.15$, $DT = 1.44$), from twelve state schools in Spain. The sample was divided into two sub-samples for the cluster analysis, with 349 students for sample 1 (168 males and 181 females) aged between 12 and 16 ($M = 13.64$, $DT = 1.21$) and 349 students for sample 2 (164 males and 185 females) aged between 12 and 16 ($M = 14.61$, $DT = 1.43$).

Instruments

Behavioral Regulation in Sport Questionnaire (BRSQ):

The translated version of this questionnaire by Lonsdale, Hodge, and Rose (2008) was used, validated in Spanish by Viladrich et al. (2011). This scale consists of 36 items, divided into 9 factors with four items each: (1) general

intrinsic motivation (e.g., “because I enjoy it”), (2) intrinsic motivation for knowledge (e.g., “for the pleasure it gives me to know more about these activities), (3) intrinsic motivation for stimulation (e.g., “for the enthusiasm I feel when I am involved in the activity”), (4) intrinsic motivation for achievement (e.g., “because I enjoy trying to accomplish long term goals), (5) integrated regulation (e.g., “because it is a part of what I am”), (6) identified regulation (e.g., “because the benefits of physical education are important for me”), (7) introjected regulation (e.g., “because I would feel embarrassed if I gave up”), (8) external regulation (e.g., “because if I don’t do it others wouldn’t be pleased with me”) and (9) amotivation (e.g., “however, I don’t know why I do it”). The introductory sentence was “I do physical exercise in my classes because...”. The answers were given on a Likert scale from 1 “very untrue” to 7 “very true”. The values obtained were 0.93, 0.85, 0.83, 0.84, 0.85, 0.76, 0.79, 0.82, and 0.78 respectively.

Theory of Planned Behavior Questionnaire (TCP):

The Theory of Planned Behavior Questionnaire by Tirado et al. (2012) was used. It consists of 20 items grouped into four factors: (1) subjective norm (4 items) (e.g., “the majority of people who are important to me think that I should do exercise at least 6 times in the next two weeks”); (2) intention (4 items) (e.g., “I have thought about doing exercise at least 6 times in the next two weeks”); (3) control (5 items) (e.g., “if I wanted, I could do exercise at least 6 times in the next two weeks”); (4) attitude (7 items), beginning with an introductory sentence “Doing exercise at least six times in the next two weeks would be ... for me”, each item is given a pair of opposite adjectives (e.g., “very bad - very good”, “not important at all - very important”, etc.), which were answered on a Likert scale ranging from 1 for the most negative attitude to 7 for the most positive attitude. The eigen (α) values obtained were 0.85, 0.87, 0.76 and 0.86, respectively. For the rest of the factors, all the questions were answered on a Likert scale ranging from 1 (totally disagree) to 7 (totally agree), except for one item from the subjective norm factor which ranged from 1 (no control at all) to 7 (a lot of control).

Procedure

In order to gather the information, we contacted the head principals and physical education teachers of the different

schools to inform them about the aim of the research and ask for their collaboration. Because the students were minors, their parents were informed and asked to give written authorization. Once the norms were made clear for filling them in, the questionnaires were administered under the supervision of the principal researcher, who insisted on the anonymity and the honesty of their answers. While completing the questionnaires, the principal researcher clarified any doubts that arose. The questionnaires were answered individually and in a calm and peaceful environment which helped students to feel relaxed and able to concentrate. The approximate time for completing the questionnaires was 20-25 minutes. They were collected individually to check that no item was left unanswered. All the centers, teachers and students participated in the research voluntarily.

Data analysis

Firstly, we calculated the descriptive statistics, averages, typical deviations, alpha Cronbach and correlation coefficients between all the variables investigated in the study. Secondly, the motivational profiles for the physical education students were identified. To do so, a hierarchical cluster analysis using the Ward method was made, using all the motivational variables from the BSRQ. Followed by confirming the solution of the profiles found using a K means conglomerates analysis with sample 2. In order to examine the characteristics of each motivational profile according to motivation type, a multivariate analysis of variance (MANOVA) was conducted. Finally, a MANOVA was carried out with the whole sample to analyze the differences for each profile per variable of the Theory of Planned Action. The SPSS program version 18.0 was used for all the analyses.

Results

Descriptive statistics and correlation analysis

Descriptive statistics were calculated for the whole sample. As shown in Table 1, the results indicated that the students were generally in a position close to self-determination. In this sense, the highest average scores for physical education students were found in the four types of intrinsic motivation (general, knowledge, stimulation and achievement) as well as in integrated, identified and introjected extrinsic motivation, in contrast to external

Table 1. Media, Standard Deviations and Correlations among all Variables.

Variable	M	DT	1	2	3	4	5	6	7	8	9	10	11	12	13
1. IM general	5.48	1.33	-	.75**	.73**	.75**	.65**	.66**	.25**	.09*	-.03	.46**	.41**	.29**	.42**
2. IM knowledge	5.30	1.40	-	-	.81**	.77**	.72**	.74**	.39**	.22**	.04	.43**	.35**	.37**	.44**
3. IM stimulation	5.21	1.35	-	-	-	.80**	.78**	.74**	.45**	.27**	.11*	.43**	.39**	.38**	.46**
4. IM achievement	5.47	1.30	-	-	-	-	.75**	.78**	.37**	.19**	.00	.45**	.39**	.34**	.45**
5. EM integrated	5.11	1.45	-	-	-	-	-	.76**	.48**	.30**	.15**	.45**	.36**	.38**	.42**
6. EM identified	5.33	1.24	-	-	-	-	-	-	.46**	.27**	.06	.49**	.40**	.39**	.43**
7. EM introjected	4.31	1.65	-	-	-	-	-	-	-	.69**	.50**	.20**	.19**	.28**	.27**
8. EM external	3.80	1.71	-	-	-	-	-	-	-	-	.67**	.10*	.06	.26**	.17**
9. Amotivation	3.82	1.67	-	-	-	-	-	-	-	-	-	.00	-.01	.12*	.03
10. Attitude	5.63	1.10	-	-	-	-	-	-	-	-	-	-	.37**	.27**	.40**
11. Norm	5.53	1.16	-	-	-	-	-	-	-	-	-	-	-	.44**	.60**
12. Control	4.27	1.57	-	-	-	-	-	-	-	-	-	-	-	-	.64**
13. Intention	4.91	1.51	-	-	-	-	-	-	-	-	-	-	-	-	-

IM = Intrinsic Motivation, EM = Extrinsic Motivation. ** $p < 0.01$; * $p < 0.05$

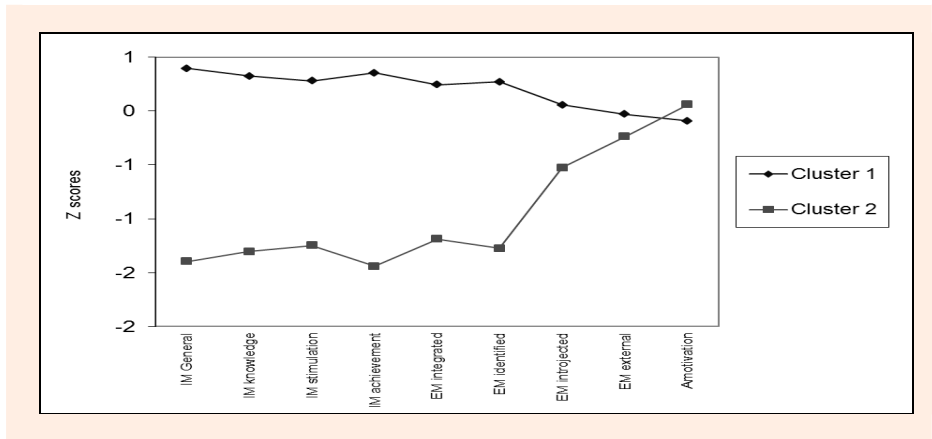


Figure 1. Motivational profiles in Sample 1. IM = Intrinsic Motivation, EM = Extrinsic Motivation.

motivation and amotivation. Furthermore, students showed average scores in attitude (5.63), norm (5.53), control (4.27) and intention (4.91), respectively.

The correlation coefficients showed that the four types of intrinsic motivation were positively related, and also maintained positive relations with all the extrinsic motivation variables with the weakest correlation being between general intrinsic motivation and external motivation. Amotivation was related positively with integrated, introjected and external extrinsic motivation. Attitude, norm, control and intention variables were positively associated to each other and also to intrinsic motivation and the most self-determined forms of extrinsic motivation.

Cluster analysis

The phases proposed by Hair, Anderson, Tatham, and Black (1998) were followed to carry out the cluster analysis. Firstly, the lost cases observed in some of the variables were excluded from the study sample. Secondly, all the variables were standardized using Z scores and no score above 3 was found, which implied that there were no “outlier” classifications or cases lost from the whole sample. The next step involved examining the univariate distribution of all the grouped variables for their normality.

In order to determine the motivational groups in sample 1, a hierarchical conglomerate analysis was conducted using the Ward method. The dendrogram obtained suggested the existence of two groups. The fit of the

groups was decided on the basis of the increase of agglomerate coefficients when going from two groups to one group. In accordance with Norusis (1992), the small coefficients indicated a high degree of homogeneity between the cluster members, while the large coefficients show big differences between their members. Therefore it was concluded that there are two different motivational profiles for the physical education students from sample 1 of the study (Figure 1): a “self-determined” profile (cluster 1), with higher scores for intrinsic motivation and identified regulation than for introjected, external motivation and amotivation; and another profile with forms from “non self-determined” motivation (cluster 2). The K-average test was used to determine the existing motivational groups in sample 2, and two motivational profiles were also found (Figure 2): a “self-determined” profile (cluster 1) with higher scores for intrinsic motivation and identified regulation than for introjected, external motivation and amotivation; and another profile with high scores for forms of “non self-determined” motivation” (cluster 2). The patterns of the two clusters in both the separate samples and the whole sample (Figure 3) were notably similar, although the differences between the forms of intrinsic, extrinsic motivation and amotivation were more moderate between the clusters from the whole sample (Table 2).

Differential analysis of the motivation types according to motivational profile

In order to examine the characteristics of each

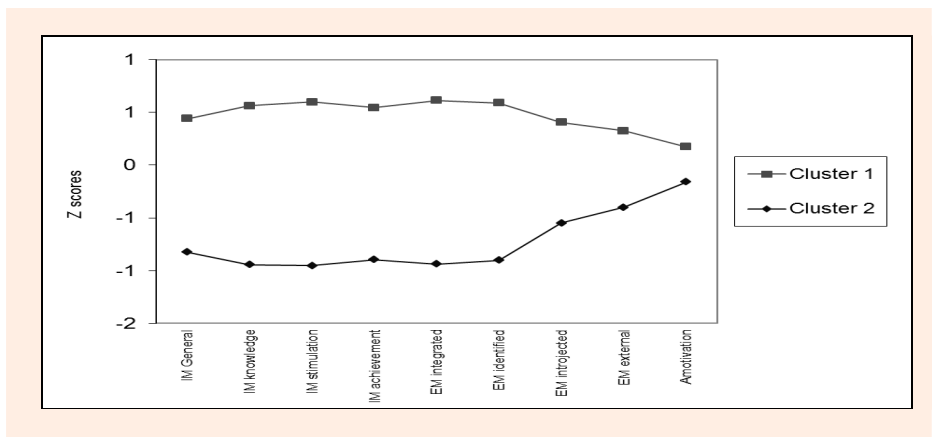


Figure 2. Motivational profiles in Sample 2. IM = Intrinsic Motivation, EM = Extrinsic Motivation.

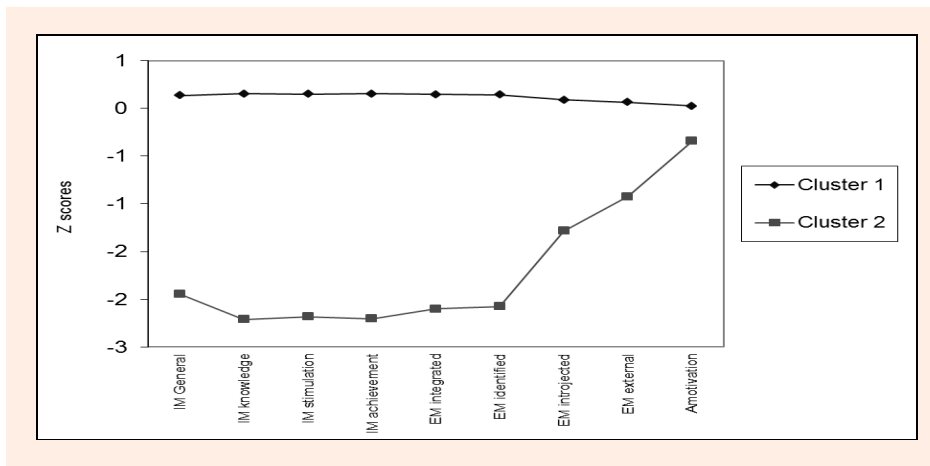


Figure 3. Motivational profiles in Total Sample 2. IM = Intrinsic Motivation, EM = Extrinsic Motivation.

motivational profile with the whole sample according to the attitude, norm, control and intention variables, a differential analysis was conducted with the clusters as independent variables and the four variables of the Theory of Planned Action as dependent variables (Table 3). The results obtained showed significant differences (Wilk’s $\Lambda = 0.07$, $F(12, 685) = 662.27$, $p < 0.01$) in attitude ($F(1, 698) = 51.72$, $p < 0.01$), norm ($F(1, 698) = 20.70$, $p < 0.01$), control ($F(1, 698) = 27.24$, $p < 0.01$) and intention ($F(1, 698) = 48.13$, $p < 0.01$), supporting the profile with high scores in self-determined motivation.

Discussion

As mentioned above, the objectives of this study were to examine how the different types of motivation from the self-determination theory combined into motivational profiles in adolescent physical education students, and the relationship of these profiles with the variables of the Theory of Planned Behavior. The need to study motivational variables in a combined way has been particularly highlighted over the last few years so as to encourage the promotion of pedagogical programs and interventions which would optimize the adherence of participating in physical activity among the adolescent population (Fairchild et al., 2005). In this context, the Theory of Planned Behavior has also proved to be useful in understanding behaviors related to participating in sports and physical activity (Hagger et al., 2002; Norman and Corner, 2005).

To accomplish the first objective, the different motivational variables were analyzed as a whole following the indications by Vallerand (2001) and profiles were established, enabling information to be provided for planning strategies for the groups which most need intervention. The results of the conglomerate analyses revealed the existence of two motivational profiles among physical education students. First was a “self-determined” profile with higher scores for the four types of intrinsic motivations (general, knowledge, stimulation and achievement) and identified regulation than for introjected and external regulation. And second was a “non self-determined” profile with higher scores for external, introjected regulation and amotivation than for the four types of intrinsic motivation (general, knowledge, stimulation and achievement). Similar results were found in other recent studies (Navarro et al., 2008; Sicilia, Águila et al., 2009), although in the context of healthy physical exercise.

The second objective tried to determine the relationships of each profile with the Theory of Planned Behavior variables (intention, norm, attitude and control). The results showed that the “self-determined profile” was related positively to attitude, subjective norm, perceived control and intention. In spite of the fact that to date no studies have been found that relate motivational profiles to the Theory of Planned Behavior, these results can be interpreted as being in line with the contributions of Self-determination theory. In this sense, it is logical to think that a student who comes within the “self-determined

Table 2. Standardized Values, Means and Standard Deviations of the variables in each cluster for simple 1, 2 and Total.

	Muestra 1			Muestra 2				Muestra Total										
	Cluster 1 (n = 273)			Cluster 2 (n = 76)			Cluster 1 (n = 225)		Cluster 2 (n = 123)		Cluster 1 (n = 553)			Cluster 2 (n = 145)				
	Motivated			Unmotivated			Motivated		Unmotivated		Motivated			Unmotivated				
	Z	M	DT	Z	M	DT	Z	M	DT	Z	M	DT	Z	M	DT	Z	M	DT
1. IM general	.39	6.01	.93	-1.39	3.62	1.15	.43	6.07	.80	-.82	4.38	1.23	.13	5.66	1.10	-1.94	2.89	1.60
2. IM knowledge	.32	5.75	1.01	-1.30	3.47	1.16	.56	6.09	.78	-.94	3.97	1.22	.15	5.51	1.15	-2.21	2.20	.95
3. IM stimulation	.27	5.59	1.04	-1.24	3.52	1.17	.59	6.03	.71	-.95	3.92	1.13	.15	5.42	1.12	-2.18	2.25	.98
4. IM achievement	.35	5.93	.88	-1.44	3.59	.94	.54	6.18	.61	-.89	4.30	1.32	.15	5.67	1.06	-2.20	2.59	1.11
5. EM integrated	.24	5.47	1.20	-1.18	3.39	1.14	.61	6.01	.74	-.93	3.75	1.21	.14	5.32	1.23	-2.10	2.06	.85
6. EM identified	.27	5.67	.91	-1.27	3.75	1.05	.58	6.06	.71	-.90	4.21	1.09	.14	5.51	1.03	-2.07	2.76	1.13
7. EM introjected	.05	4.40	1.71	-.52	3.44	1.33	.40	4.98	1.51	-.54	3.40	1.27	.08	4.46	1.57	-1.28	2.18	1.28
8. EM external	-.02	3.75	1.78	-.23	3.39	1.29	.32	4.35	1.68	-.39	3.11	1.45	.06	3.91	1.68	-.92	2.22	1.25
9. Amotivation	-.09	3.67	1.80	.05	3.92	1.25	.17	4.11	1.73	-.15	3.56	1.35	.02	3.86	1.66	-.34	3.25	1.70

IM = Intrinsic Motivation, EM = Extrinsic Motivation.

Table 3. Multivariate analysis of attitudes, norm, control and intention according to the profile.

Variables	Total Sample				F
	Cluster 1 (n = 553)		Cluster 2 (n = 145)		
	M	DT	M	DT	
Attitude	5.71	1.05	4.52	1.24	51.72**
Norm	5.58	1.11	4.77	1.60	20.70**
Control	4.35	1.53	3.11	1.61	27.24**
Intention	5.01	1.45	3.44	1.70	48.13**
Wilks Λ					.07
F Multivariate					662.27**

* $p < 0.05$; ** $p < 0.01$

profile”, and therefore, participates in some sports and physical activity from the perspective of enjoyment and health - both self-determined reasons - will also show a positive attitude towards doing it. Furthermore, according to the principles of the Theory of Planned Behavior, attitude is influenced by experience (Ajzen, 1991; Chatzasarantis et al., 2006), and the positive feedback generated from the physical and psychological benefits of doing any physical activity kept up over time could help encourage people to assimilate positive values and attitudes towards sport. As well as attitude, the “self-determined profile” of motivation also related positively to subjective norm and to perception of control. In fact, and also in line with the Self-determination theory, high levels of intrinsic motivation and low levels of amotivation constitute a binomial optimum for stimulating the normative belief in people that participating in some type of sports and physical activity is a desirable way of behaving in society and therefore pleasing to others. This factor in turn would give feedback for an adequate perception of control in situations where decisions have to be made with regards to participating in sports. Finally, intention also related positively to the “self-determined profile” and, in line with other studies (Fonseca and Paula-Brito, 2000), intrinsic motivation represents a good predictor of intention towards participating in sports and physical activity. It is also associated with perceived competence, task orientation and the concept that sports competence gained from learning can be improved and is specific. However, according to this theoretical model, although a person may have a positive attitude towards participating in sports and physical activity, other factors, for example perception of control over one’s behavior (*perceived behavioral control*), perception of whether significant others approve or disapprove of the behavior in question (*subjective norm*), and intention, will affect the probability of carrying out a behavior in such a way that it will finally be influenced by all these factors, which could result in participating in or not participating in sport (for further details see Fishbein and Ajzen, 1975). Based on this reasoning and on the recommendation to contemplate the role of motivation in combination with the components from the Theory of Planned Behavior for predicting or understanding a behavioral result (Fishbein and Ajzen, 1980), this study has determined that the pattern of positive thought towards doing sport, that we have obtained, (characterized by a positive attitude, good perception of behavioral control, assimilation of subjective norm and intention with respect to the behavior of doing sport)

relates positively to a self-determined motivation profile. These results in turn suggests that with respect to the already proven positive relationship between intrinsic motivation and people’s commitment (Ryan et al., 1997), future studies should also test whether positive thought towards physical activity obtained here also relates positively to keeping it up and to commitment to doing it. To promote programs that encourage positive attitudes towards sports and self-control strategies such as planning or provisions, could possibly improve the present levels of doing physical activity.

On the other hand, another interesting result was that the four variables of the Theory of Planned Behavior related positively, that in the context of the “non self-determined profile” means that we could encourage programs that adapt to these needs in such a way that they contribute to increasing the rates of doing physical activity in the population. In this sense, it is possible to think that besides intention, which can be a good predictor of behavior since there are no excessive control problems (Ajzen, 1988; Shepard et al., 1988), optimism, which can encourage a positive attitude towards doing physical activity, could help people perceive themselves as having greater control over situations. This confidence would in turn be useful to confront the normative belief which subjective norm entails and to finally opt for the most adequate behavior. In fact, according to the Theory of Planned Behavior, this influence occurs because subjective norms exist according to a person’s beliefs about what others think he or she should do (*normative belief*) and the degree of motivation for adapting to such expectations. In fact, a positive relationship was also found between variables from the Theory of Planned Behavior in previous studies (Ajzen and Madden, 1986; Hausenblas et al., 1997). The consideration of other factors, such as social class, considered as *external variables* in the Theory of Planned Behavior, could contribute positively to the limitations of this study.

Conclusion

Besides offering support for the Theory of Planned Behavior and highlighting the effect that intentions have on behavior towards doing physical exercise, the results suggest that more studies in this line are needed to look into how the different types of motivation from the Self-determination theory combine and interact with other variables producing different behavioral results.

References

- Ajzen, I. (1985) From intentions to actions: A theory of planned behavior. In: *Action control from cognition to behavior*. Eds: Khul, J. and Beckmann, J. Berlin: Verlag. 10-39.
- Ajzen, I. (1988) *Attitudes, personality and behavior*. Chicago: Dorsey Press.
- Ajzen, I. (1991) The theory of planned behavior. *Organizational Behavior and Human Decision Processes* **50**, 179-211.
- Ajzen, I. (1996) The directive influence of attitudes on behavior. In: *The psychology of action. Linking cognition and motivation to behavior*. Eds: Gollwitzer, P. M. and Bargh, J. A. New York: Guilford Press. 385-454.
- Ajzen, I. (2001) Perceived behavioral control, self-Efficacy, locus of control, and the Theory of Planned Behavior. *Journal of Applied Social Psychology* **32**, 11-20.
- Ajzen, I. (2011) The theory of planned behavior: Reactions and reflections. *Psychology and Health* **26(9)**, 1113-1127.
- Ajzen, I. and Madden, T.J. (1986) Prediction of goal-directed behavior: Attitudes, intentions, and perceived behavioral control. *Journal of Experimental Social Psychology* **22**, 453-474.
- American College of Sports Medicine (2000) *ACSM's guidelines for exercise testing and prescription*. 6th edition. Philadelphia, PA: Lippincott, Williams & Wilkins.
- Armitage, C.J. (2005) Can the theory of planned behavior predict the maintenance of physical activity? *Health Psychology* **24**, 235-245.
- Blue, C.L. (1995) The predictive capacity of the theory of reasoned action and theory of planned behaviour in exercise research: an integrated literature review. *Research in Nursing and Health* **18**, 105-121.
- Blue, C.L. (1997) Theory of planned behavior and self-efficacy and exercise behavior in blue-collar workers. *Dissertation Abstracts International Section B: The Sciences and Engineering*, **57(11-B)**, 6848.
- Carpi, A., Zurriaga, R., González, P., Marzo, J.C. and Buunk, A.P. (2007) Incidence patterns of behavior in the prevention of cardiovascular disease. *International Journal of Clinical and Health Psychology* **7**, 59-70.
- Chan, D.K.S. and Fishbein, M. (1993) Determinants of college women's intentions to tell their partner to use condoms. *Journal of Applied Social Psychology* **23(18)**, 1455-1470.
- Chatzisarantis, N.L.D., Hagger, M.S., Smith, B. and Sage, L.D. (2006) The influences of intrinsic motivation on execution of social behaviour within the theory of planned behaviour. *European Journal of Social Psychology* **36**, 229-237.
- Conner, M. and Sparks, P. (2005) The theory of planned behavior and health behavior. In: *Predicting health behavior*. Eds: Conner, M. and Norman, P. Buckingham, UK: Open University Press. 170-222.
- Deci, E.L. and Ryan, R.M. (1985) *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Deci, E.L. and Ryan, R.M. (1991) A motivational approach to self: Integration in personality. In: *Nebraska symposium on motivation: Vol. 38. Perspectives on motivation*. Ed: Dienstbier, R. Lincoln, NE: University of Nebraska Press. 237-288.
- Deci, E.L. and Ryan, R.M. (2000) The "what" and "why" of goal pursuits: Human needs and the self-determination of behaviour. *Psychological Inquiry* **11**, 227-268.
- De la Vega, R., Ruíz, R. and Del Valle, S. (2010) Tendencia de acción de porteros de fútbol profesional: el caso de los penaltis [Action tendency of professional soccer goalkeepers: The case of penalties]. *Cuadernos de Psicología del Deporte* **10(2)**, 23-32.
- Fairchild, A.J., Horst, S.J., Finney, S.J. and Barron, K.E. (2005). Evaluating existing and new validity evidence for the Academic Motivation Scale. *Contemporary Educational Psychology* **30**, 331-358.
- Fishbein, M. and Ajzen, I. (1975) *Belief, Attitude, Intention and Behavior: An Introduction of Theory and Research*. Reading, Mass: Addison-Wesley.
- Fishbein, M. and Ajzen, I. (1980) Predicting and understanding consumer behavior: Attitude-behavior correspondence. In: *Understanding Attitudes and Predicting Social Behavior*. Eds: Ajzen, I. and Fishbein, M. Englewood Cliffs, NJ: Prentice-Hall. 95-125.
- Fonseca, A. and Paula-Brito, A. (2000) Variables motivadoras discriminantes de la intención de practicar actividad física o deporte [Motivational variables discriminating the intention to practice physical activity or sport]. *Primer Congreso Hispano-Portugués de Psicología*. Santiago de Compostela: Universidad de Santiago de Compostela. (In Spanish).
- Godin, G. (1993) The theories of reasoned action and planned behavior: overview of findings, emerging research problems, and usefulness for exercise promotion. *Journal of Applied Sport Psychology* **5**, 141-157.
- Godin, G. and Kok, G. (1996) The theory of planned behavior: A review of its applications to health-related behaviors. *American Journal of Health Promotion* **11**, 87-98.
- Hagger, M.S., Chatzisarantis, N.L.D. and Biddle, S.J.H. (2002) A meta-analytic review of the theories of reasoned action and planned behaviour in physical activity: Predictive validity and the contribution to additional variables. *Journal of Sport and Exercise Psychology* **24**, 3-32.
- Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, W.C. (1998) *Multivariate Data Analysis*. Upper Saddle River, NJ: Prentice-Hall.
- Hausenblas, H.A., Carron, A.V. and Mack, D.E. (1997) Application of the theories or reasoned action and planned behaviour to exercise behaviour: a meta-analysis. *Journal of Sport and Exercise Psychology* **19**, 36-51.
- Iso-Ahola, S.E. and St.Clair, B. (2000) Toward a theory of exercise motivation. *Quest* **52**, 131-147.
- Jackson, C., Smith, R.A. and Conner, M. (2003) Applying an extended version of the theory of planned behavior to physical activity. *Journal of Sports Sciences* **21**, 119-133.
- Kwan, M.Y., Bray, S.R. and Martin-Ginis, K.A. (2009) Predicting physical activity of first-year university students: An application of the theory of planned behavior. *Journal of American College Health* **58**, 45-52.
- Lonsdale, C., Hodge, K. and Rose, E.A. (2008) The development of the Behavioral Regulation in Sport Questionnaire (BRSQ): Instrument development and initial validity evidence. *Journal of Sport & Exercise Psychology* **30**, 323-355.
- McNeill, M.C. and Wang, C.K.J. (2005) Psychological profiles of elite school sports players in Singapore. *Psychology of Sport and Exercise* **6**, 117-128.
- Moreno-Murcia, J.A., Alonso, N., Martínez Galindo, C. and Cervelló, E. (2005) Motivación, disciplina, coeducación y estado de flow en educación física: Diferencias según la satisfacción, la práctica deportiva y la frecuencia de práctica [Motivation, discipline, and flow state coeducation physical education: Differences by satisfaction, sports and frequency of practice]. *Cuadernos de Psicología del Deporte* **5(1-2)**, 225-243. (In Spanish)
- Moreno-Murcia, J.A., Cano, F., González-Cutre, D. and Ruíz, L.M. (2008) Perfiles motivacionales en salvamento deportivo [Motivational profiles in sport rescue]. *Motricidad. European Journal of Human Movement* **20**, 61-74. (In Spanish)
- Moreno-Murcia, J.A., Cervelló, E. and González-Cutre, D. (2007). Young athletes' motivational profiles. *Journal of Sports Science and Medicine* **6**, 172-179.
- Moreno-Murcia, J.A., Martínez Galindo, C. and Alonso, N. (2010) Perfiles motivacionales en educación física. Diferencias según las conductas de disciplina y la percepción de igualdad de trato [Motivational profiles in physical education. Differences according to discipline behavior and perception of equal treatment]. *Revista Iberoamericana de Educación* **54(1)**, 1-11. (In Spanish)
- Navarro, N., González-Cutre, D., Marcos, P.J., Borges, F., Hernández, A., Vera, J.A. and Moreno, J.A. (2008) Perfiles motivacionales en la actividad física saludable: un estudio desde la perspectiva de la teoría de la autodeterminación [Motivational profiles in healthy physical activity: a study from the perspective of self-determination theory]. In: *XI Congreso Nacional, XI Andaluz and XIII Iberoamericano de Psicología de la Actividad Física y del Deporte*. Sevilla: Universidad Pablo de Olavide. (In Spanish)
- Norman, P. and Conner, M. (2005) The theory of planned behavior and exercise: Evidence for the mediating and moderating roles of planning and intention-behavior relationships. *Journal of Sport and Exercise Psychology* **27**, 488-504.
- Norusis, M.J. (1992) *SPSS/PC+ Professional statistics, Version 5.0*. Chicago, IL: SPSS.

- Ntoumanis, N. (2002) Motivational clusters in a sample of British physical education classes. *Psychology of Sport and Exercise* 3, 177-194.
- Rodríguez-Marín, J. and Neipp, M.C. (2008) La conducta de salud [Health behavior]. In: *Manual de Psicología Social de la Salud*. Eds: Rodríguez-Marín, J. and Neipp, M.C. Madrid: Síntesis. 117-138. (In Spanish)
- Ryan, R.M., Frederick, C.M., Lepes, D., Rubio, N. and Sheldom, K.M. (1997) Intrinsic motivation and exercise adherence. *International Journal of Sport Psychology* 28, 335-354.
- Sheeran, P. (2002) Intention-behavior relations: A conceptual and empirical review. In: *European review of social psychology*. Eds: Hewstone, M. and Stroebe, W. Chichester, England: Wiley. 1-36.
- Sheppard, B.H., Hartwick, J. and Warshaw, P.R. (1988) The theory of reasoned action: a meta-analysis of past research. *Journal of Consumer Research* 15, 325-343.
- Sicilia, A., Águila, C., Muyor, J.M., Orta, A. and Moreno-Murcia, J.A. (2009) Perfiles motivacionales de los usuarios en centros deportivos municipales [Motivational profiles of users in municipal sports centers]. *Anales de Psicología* 25(1), 160-168. (In Spanish).
- Skar, S., Snehotta, F., Araújo-Soares, V. and Molloy, G. J. (2008) Prediction of behaviour vs. Prediction of behaviour change: the role of motivational moderators in the theory of planned behaviour. *Applied Psychology* 57(4), 609-627.
- Snihotta, F.F., Scholz, U. and Schwarzer, R. (2005) Brindging the intention-behaviour gap: Planning, self-efficacy, and action control in the adoption and maintenance of physical exercise. *Psychology and Health* 20(2), 143-160.
- Tirado, S., Neipp, M.C., Quiles, M.J. and Rodríguez-Marín, J. (2012) Development and validation of the Theory of Planned Behavior Questionnaire in Physical Activity. *Spanish Journal of Psychology* 15(2), 801-816. (In Spanish).
- Vallerand, R.J. (1997) Toward a hierarchical model of intrinsic and extrinsic motivation. In: *Advances in experimental social psychology*. Ed: Zanna, M.P.. New York: Academic Press. 271-360.
- Vallerand, R.J. (2001) A hierarchical model of intrinsic and extrinsic motivation in sport and exercise. In: *Advances in motivation in sport and exercise*. Ed: Roberts, G.C. Champaign, IL: Human Kinetics. 263-319.
- Vallerand, R.J., Deci, E.L., and Ryan, R.M. (1987) Intrinsic motivation in sport. *Exercise and Sport Sciences Reviews* 15, 389-425.
- Vallerand, R.J. and Fortier, M.S. (1998) Measures of intrinsic and extrinsic motivation in sport and physical activity: A review and critique. In: *Advances in sport and exercise psychology measurement*. Ed: Duda, J.L. Morgatown, WV: Fitness Information Technology. 81-101.
- Vallerand, R.J., Fortier, M.S. and Guay, F. (1997) Self-determination and persistence in a real-life setting: Toward a motivational model of high school dropout. *Journal of Personality and Social Psychology* 72, 1161-1176.
- Viladrich, C., Torregrosa, M. and Cruz, C. (2011) Calidad psicométrica de la adaptación española del Cuestionario de Regulación Conductual en el Deporte [Psychometric quality of the Spanish adaptation of the Behavioral Regulation Questionnaire in Sport]. *Psicothema* 23(4), 786-789. (In Spanish).
- Vlachopoulos, S.P., Karageorghis, C.I. and Terry, P.C. (2000) Motivation profiles in sport: A self-determination theory perspective. *Research Quarterly for Exercise and Sport* 71, 387-397.

AUTHORS BIOGRAPHY



Juan Antonio Moreno

Employment

Full professor. Faculty of Social and Juridical Sciences, Miguel Hernández University of Elche, Spain.

Degree

PhD

Research interests

Motivation in physical education, sport and exercise; aquatic activities.

E-mail: j.moreno@umh.es



Eduardo Cervelló

Employment

Full professor. Faculty of Social and Juridical Sciences, Miguel Hernández University of Elche, Spain.

Degree

PhD

Research interests

Motivation in physical education, sport and exercise.

E-mail: ecervello@umh.es



Elisa HUÉSCAR

Employment

Full professor. Faculty of Psychology, Miguel Hernández University of Elche, Spain.

Degree

PhD

Research interests

Motivation in physical education, sport and exercise.

E-mail: ehuescar@umh.es



Noelia BELANDO

Employment

Full professor. Faculty of Psychology, Miguel Hernández University of Elche, Spain.

Degree

PhD

Research interests

Motivation in physical education, sport and exercise.

E-mail: nbelando@umh.es



Jesús RODRIGUEZ

Employment

Full professor. Faculty of Psychology, Miguel Hernández University of Elche, Spain.

Degree

PhD

Research interests

Health Psychology; planned behavior; adolescent.

E-mail: rod.marin@umh.es

Key points

- A “self-determined” profile was found with higher scores for the four types of intrinsic motivations (general, knowledge, stimulation and achievement) and identified regulation than for introjected and external regulation.
- A “non self-determined” profile was found with higher scores for external, introjected regulation and amotivation than for the four types of intrinsic motivation (general, knowledge, stimulation and achievement).
- In the context of the “non self-determined profile” we could encourage programs that adapt to these needs in such a way that they contribute to increasing the rates of doing physical activity in the population.

✉ Elisa Huéscar Hernández

Universidad Miguel Hernández de Elche, Centro de Investigación del Deporte, Avenida de la Universidad, s/n., 03202 Elche (Alicante), Spain