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Profiles of Emotional Intelligence and Their Relationship with Motivational and Well-being Factors in Physical Education

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A B S T R A C T

Research on emotional intelligence (EI) and its relationship with motivational and health factors in educational contexts is scarce. The objectives of this study were three: (a) to explore emotional intelligence profiles of adolescents; (b) to examine how these profiles relate to different types of motivation, basic psychological needs, friendship goals, subjective well-being, and intentions to be physically active; and (c) to analyze how these emotional profiles evolve during a full year in physical education contexts. It is a longitudinal study with three measurement occasions. Participants were 282 students (151 boys and 131 girls) from six high schools (M_{age} = 13.03, *SD* = 0.93). Hierarchical and k-means cluster analysis were performed, three inter-group MANOVAs (one for each time) and one 2 x 3 (group x time) MANOVA to explore longitudinal changes. Two EI clusters emerged: high EI (*n* = 168) and low EI (*n* = 114). Significant effects were found for the group in the three MANOVAs. The high EI cluster was more adaptive, self-determined, with greater psychosocial adjustment, subjective well-being, and intentions to be physically active.

Los perfiles de inteligencia emocional y su relación con indicadores motivacionales y de bienestar en educación física

Palabras clave:
Inteligencia emocional
Motivación
Análisis de clústeres
Metas sociales
Bienestar
Salud

R E S U M E N

La investigación sobre la inteligencia emocional (IE) y su relación con factores motivacionales y de salud en contextos educativos es escasa. Los objetivos del estudio fueron tres: (a) explorar los perfiles de inteligencia emocional de los adolescentes en el contexto de la educación física, (b) examinar cómo se relacionan estos perfiles con los diferentes tipos de motivación, las necesidades psicológicas básicas, las metas de amistad, el bienestar subjetivo y las intenciones de ser físicamente activo y (c) analizar cómo evolucionan estos perfiles emocionales durante un año completo en contextos de educación física. Se trata de un estudio longitudinal con tres ocasiones de medida. Participaron 282 estudiantes (151 varones y 131 mujeres) de seis institutos de Educación Secundaria (M_{edad} = 13.03, *DT* = 0.93). Se realizaron análisis de conglomerados jerárquicos y k-medias, tres MANOVA intergrupo (una para cada tiempo) y un MANOVA 2 x 3 (grupo x tiempo) para explorar los cambios longitudinales. Aparecieron dos clusters de IE: alto (*n* = 168) y bajo (*n* = 114). En los tres MANOVA se encontraron efectos significativos para el grupo. El cluster alto en IE se mostró más adaptativo y autodeterminado y con mayor nivel de ajuste psicosocial, bienestar subjetivo y la intención de ser físicamente activo.

In recent decades, the emotional intelligence (EI) construct has raised enormous interest in the fields of psychology, education, and sport (Hodzic, Scharfen, Ripoll, Holling, & Zenasni, 2017). Gardner (1983) considered the existence of two types of intelligences related to EI in his model of multiple intelligences: intrapersonal and interpersonal, which included knowledge about oneself and others. Goleman (1995) popularized this concept and defined EI as the ability to know and manage one's emotions, to motivate oneself, to recognize the emotions of others, and to establish relationships.

Based on the elements (facets) that the various models have hypothesized to encompass, two main approaches on EI stand out in literature: ability and trait EI models. Ability models consider EI is composed of specific emotional skills (Mayer & Salovey, 1997; Salovey & Mayer, 1990). EI is understood as the set of interrelated competences to perceive, express, understand, regulate, and control emotions in oneself and others (Salovey & Mayer, 1990). One of the most recognized ability EI models is Mayer and Salovey's four-branch model that distinguishes between perceiving emotions, facilitating

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thinking, understanding emotions, and managing emotions (Mayer, Salovey, & Caruso, 2004). Trait EI elements are personality traits, as opposed to competencies or mental abilities. Trait models include EI as dispositions related to emotion, in a hierarchically lower position to the personality traits that determine the way people behave in emotional situations (Petrides, Pita, & Kokkinaki, 2007). Besides these two approaches, there are the so-called mixed models of EI, which include other non-cognitive features like social skills, motivation, self-esteem, or personality aspects (Mayer, Roberts, & Barsade, 2008).

Physical education (PE) is a singular curricular context in which cognitive, motivational, socio-affective, and physical factors converge. The study of how EI profiles (which include the abilities to recognize and express, regulate, and use one's own and others' emotions in an adaptive way) are related to motivational and well-being factors in the context of PE could yield important information for practitioners and researchers. On the one hand, it would help to understand how these variables behave specifically in the context of this very singular subject. On the other hand, it would make it possible to structure programs for the improvement of EI within the framework of a quality PE in order to maximize the integral development of the students. A quality PE should provide opportunities for students to learn and develop emotional skills, thus increasing their emotional competence. The measurement of emotional intelligence profiles is added to the literature to open new ways towards the evaluation and promotion of quality PE.

Research has shown positive relationships between EI and academic performance (Petrides, Frederickson, & Furnham, 2004), psychosocial adjustment (Salguero, Fernández-Berrocal, Ruiz-Aranda, Castillo, & Palomera, 2015), better social relationships (Lopes, Salovey, Côté, & Beers, 2005), as well as inverse relationships with negative emotional states, such as depression, suicidal ideation, or aggression (García-Sancho, Salguero, & Fernández-Berrocal, 2014). At the same time, some meta-analyses have shown a positive relationship between EI and mental, psychosomatic, and physical health (Martins, Ramalho, & Morin, 2010) as well as subjective well-being in children, adolescents, and young people (Sánchez-Álvarez, Extremera, & Berrocal, 2016). Other studies have reported moderate relationships between ability EI and satisfaction with life in both cross-sectional and prospective studies (Brackett, Rivers, Shiffman, Lerner, & Salovey 2006; Extremera, Ruiz-Aranda, Pineda-Galán, & Salguero, 2011). In the context of sport performance, the review of Laborde, Dosseville, and Allen (2016) found that trait EI relates to pleasant emotions, lower physiological stress responses, successful psychological skill usage, and more successful athletic performance. In addition, EI was associated with a higher level of physical activity (PA) and positive attitudes towards PA. Likewise, it has been shown that trait EI is positively related to duration and frequency of sports participation (Laborde, Guillén, & Watson, 2017). While some articles have been published on the associations between EI and self-efficacy among PE teachers (e.g., Mouton, Hansenne, Delcour, & Cloes, 2013), the relationships between EI and motivational and achievement variables among PE students remain unexplored.

Motivational Factors and Self-determination Theory

Despite the consensus among experts on the field (e.g., Meyer & Turner, 2006) that both affective and motivational factors may be closely related, there is surprisingly little empirical research about their joint impact on the educational context. However, they are essential in teaching-learning processes and in improving academic performance (Meyer & Turner, 2006). One of the most relevant theoretical frameworks for explaining motivational processes in the school and sports environment is the Self-determination Theory (SDT; Deci & Ryan, 1985). The SDT proposes that motivation occurs in a continuum of self-determination that ranges from one end, intrinsic motivation, to the other, amotivation, through different forms of extrinsic motivation (identified, introjected, and external regulation, among others). Intrinsic motivation refers to the fact of performing an activity for the pleasurable sensations it reports, for learning or overcoming challenges. In identified regulation individuals carry out an activity that is deemed important to achieve their own goals. Introjected regulation represents behaviors performed to avoid guilt and embarrassment or to obtain feelings of personal worth. External regulation encourages the individual to perform an activity in a controlled manner by a system of rewards or punishments (coercion). Finally, amotivation refers to the lack of motivation. This situation occurs when people experience feelings of incompetence and lack of control (Deci & Ryan, 1985, 2002). Amotivated behaviors are not related to desired actions and consequences.

At the same time, the SDT considers that contextual and social factors, such as the climate generated by the teacher, influence the type of students' motivation (Deci & Ryan, 1985). This contextual and social influence is mediated by students' perceptions of the satisfaction of three basic psychological needs: competence, autonomy, and relatedness. The need for competence refers to the experience of behavior as effectively enacted. The need for autonomy refers to the experience of behavior as volitional and reflectively self-endorsed. Relatedness refers to the need to feel belongingness and connectedness with others (e.g., Niemiec & Ryan, 2009). Many researchers have explored the effects of the motivational climate and the autonomy-supportive versus controlling influences on basic psychological needs (e.g., Hodge & Gucciardi, 2015; Ntoumanis, 2001; Standage, Duda, & Ntoumanis, 2003, 2006). For instance, mastery climates are characterized by a context where students perceive that personal improvement and learning are rewarded, while in ego climates students perceive that outstanding performances are rewarded. Research has shown that mastery climates promote PE studentss' feelings of competence, autonomy, and relatedness (Méndez-Giménez, Fernández-Río, & Cecchini, 2016; Ntoumanis, 2001; Standage et al., 2003). According to SDT, supports for competence, relatedness, and autonomy facilitate intentional motivation, and furthermore, that support for autonomy in particular will facilitate that motivated action is being self-determined (rather than controlled). Several studies found that greater satisfaction of these three needs was associated to self-determined motivation, both in the sport context (e.g., Cecchini, Fernández-Río, & Méndez-Giménez, 2014) and PE (Ntoumanis, 2005; Standage et al., 2006).

Lastly, the SDT postulates that different types of motivation lead to various consequences at the cognitive, emotional, and behavioral levels. In this way, more self-determined forms of motivation (e.g., intrinsic motivation and identified regulation) will produce more adaptive consequences, such as persistence or more fun in sportive activities and PE, while less self-determined forms of motivation (e.g., external regulation and amotivation) will result in less adaptive consequences, such as boredom or desertion (Hagger, Chatzisarantis, Culverhouse, & Biddle, 2003; Méndez-Giménez et al., 2016; Ntoumanis, 2001). Several studies have empirically verified this postulate by showing that more self-determined students report stronger intentions to engage in PA, are more likely to participate in PE classes, and more physically active during their leisure time (Hagger et al., 2003; Hein, Müür, & Koka, 2004; Ntoumanis, 2005).

Motivation and Emotional Intelligence

Although Goleman (1995) conceptualized self-motivation as an essential characteristic of the personal competencies that make up EI, the empirical research that connects both constructs is limited. In general, research has shown low and positive correlations between EI factors and self-determined motivation. In the educational

context, Perrault, Mask, Morgan, and Blanchard (2014) found positive, moderate correlations between EI General Index and General Self-Determination Index in a sample of Canadian university students. In the sport context, positive and low correlations have been reported between the factors of EI (recognition, control and regulation, and emotional empathy) and autonomous motivation in canoeists from 35 different countries (Arribas-Galarraga, Saies, Cecchini, Arruza, & Luis-De-Cos, 2017). In the PE context, Cera, Almagro, Conde, and Sáenz-López (2015) reported positive and low correlations but only between emotional attention and repair dimensions and intrinsic motivation and identified regulation.

Well-being and Emotional Intelligence

Motivational and emotional factors are connected with well-being constructs. Within SDT, Ryan and Deci (2001) noted the close relationship between more self-determined forms of motivation and well-being. In the same way, some studies have shown the association between emotion and well-being (e.g., Extremera & Fernández-Berrocal, 2006; Sánchez-Álvarez, Extremera, & Fernández-Berrocal, 2015; Sánchez-Álvarez et al., 2016). Subjective well-being includes both cognitive and affective evaluations of a person's life (Diener, 2000). Cognitive well-being refers to the evaluation of people in their past and present lives (Pavot & Diener, 2008) and is usually measured using the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). Affective well-being represents the balance between an individual's experience of positive and negative emotions (Diener, Suh, Lucas, & Smith, 1999) and is usually evaluated using the Positive Affect and Negative Affect Scale (PANAS; Watson, Clark, & Tellegen, 1988). The meta-analysis by Sánchez-Álvarez et al. (2016) found evidence of a positive relationship between EI and subjective well-being. This relationship was somewhat stronger with the cognitive than with the affective component.

Social Goals and Emotional Intelligence

Salovey and Mayer (1990) encouraged researchers to examine the role that EI plays in understanding other complex social processes, such as the development of friendships and the closest relationships. The ability of students to perceive emotions has been positively related to social bonds (Han & Johnson, 2012). Brackett, Mayer, & Warner (2004) found that the lack of EI was related to poor friendship relationships. Engelberg and Sjoberg (2004) showed strong links between EI and social adjustment and concluded that emotional perception is essential for social adaptation and, therefore, to develop friendships. In contrast to other subjects, PE provides an ideal context for social interaction, especially in the developmental stages of adolescence where students are at higher risk regarding mental health and problematic social behaviors (Garn & Sun, 2009). However, little is known about the relationship between EI and the establishment of social goals in this context. The present study explores the relationship between EI and friendship goals from the approach-avoidance distinction perspective (Elliot, Gables, & Mapes, 2006). The friendship-approach goals are characterized by the effort to achieve social competence, while the avoidance-friendship goals are defined as avoidance of social incompetence (Garn & Sun, 2009).

Intention to be Physically Active and Emotional Intelligence

Finally, according to the theory of planned behaviour, intention is viewed as the most proximal predictor of behaviour and it is supposed to reflect the relative strength of an individual motivation to engage in the behaviour (Ajzen, 1991). Some research has shown positive associations between intentions to be physically active and PA in adolescents of both genders (e.g., Grao-Cruces, Fernández-Martínez, Nuviala, & Pérez-Turpin, 2015). Moreover, self-determined motivation has been found to positively predict, whereas amotivation was a negative predictor of leisure-time PA intentions (Standage et al., 2003). In the same way, the findings suggest that perceptions of a mastery climate in PE may foster intrinsic interest and intentions to be physically active (Sproule, Wang, Morgan, McNeill, & McMorris, 2007). Nevertheless, to our knowledge, no study to date has examined the relationship between intention to be physically active and EI factors.

Although the profuse investigation has allowed us to detail the correlates of EI with a multitude of outcome variables, little is known about the emotional profiles and their relationships and development during the secondary stage in the PE context. The present study was guided by three objectives: (a) to explore adolescents' EI profiles; (b) to examine how these profiles relate to different types of motivation, basic psychological needs, friendship goals, and indicators of subjective well-being (satisfaction with life, positive and negative affectivity) and intentions to be physically active; and (c) to analyze how these emotional profiles evolve during a full year. Addressing these objectives will allow us to be more aware of the quality PE teaching and quality PE learning experiences for students. The following hypotheses were formulated:

*H*1: At least, two EI clusters will emerge, one with high levels and another with low levels, which will be differentially related with the variables under study. The high EI cluster will be more adaptive and will be associated with higher levels of self-determined motivation, friendship goals, basic psychological needs, subjective well-being, and intentions to be physically active than the low EI cluster.

*H*2: These differences will be maintained over time according to more or less stable patterns as a function of dependent variables.

Method

Participants

Initially, the number of participants was 293 students. Six participants were absent from the measurement wave at T2, and five from the measurement wave at T3. As the elimination of the participants produces values of non-skewed parameters if the data are missing, they occur at random, and if the rate is less than 5% they were eliminated. The sample consisted of 282 students (151 boys and 131 girls) from six high schools (1st, 2nd, and 3rd grades of Compulsory Secondary Education) in Asturias, in the north of Spain (M_{age} = 13.03 years, *DT* = 0. 93). PE in Spain is a compulsory subject for all children and young people who are between the ages of 6 to 16 years. Students take PE each year (2 hours a week) both in Primary Education (six years) and in Compulsory Secondary Education (four years). Basically, the instructional models used by teachers were direct instruction and cooperative learning. The PE curriculum implemented was centered on the teaching of games and sports as well as fitness and health.

Measures and Instruments

Emotional intelligence. The Emotional Intelligence Questionnaire in Physical Education validated by Cecchini, Méndez-Giménez, and García-Romero (2018) was used. This instrument consists of 22 items and three factors: emotional recognition (8 items), which indicates students' ability to recognize their own emotions in PE classes (e.g., "I am aware of my emotions when I play or compete"), emotional control and regulation (7 items), which includes the ability to control emotions during play and participation in classes (e.g., "When I face a game and/or competition, I control my emotions"), and emotional empathy (7 items), which includes the ability to be aware and

appreciate the feelings of peers in the course of PE sessions (e.g., "I easily understand how my peers and/or rivals feel in games and/or competitions "). The items are preceded by the heading: "In my PE classes ...". Cronbach's alpha coefficients in the study of Cecchini et al. (2018) were .87, .81, .82, for recognition, control-regulation, and emotional empathy, respectively.

Motivational regulations. Motivational regulations were evaluated using the Perceived Locus of Causality scale translated into Spanish and validated in the context of the PE by Moreno, González-Cutre, and Chillón (2009). This scale measures the different types of motivation established in the SDT. The instrument is headed by the statement "I participate in this PE class..." and consists of five factors and 20 items (four for each factor): intrinsic motivation (e.g., "Because physical education is fun"), regulation identified (e.g., "Because I want to learn sports skills", introjected regulation (e.g., "Because I want the teacher to think I am a good student"), external regulation (e.g., "Because I will have problems if I do not"), and amotivation (e.g., "However, I do not really know why"). The study by Moreno et al. (2009) obtained the following Cronbach's alpha values: .80 for intrinsic motivation, .80 for the identified regulation, .67 for the regulation introjected, .70 for external regulation, and .74 for amotivation. A Likert scale of 7 points was used, ranging from 1 (*totally disagree*) to 7 (*totally agree*).

Basic psychological needs. The Spanish version of the Basic Psychological Needs Measurement Scale in Exercise (BPNES), adapted and validated to PE by Moreno, González-Cutre, Chillón, and Parra (2008), was used. This instrument is headed by the sentence "In PE classes ..." and comprises three factors (4 items each): autonomy (e.g., "I have the opportunity to choose how to perform the exercises"), competence (e.g., " I do the exercises effectively"), and relatedness with others (e.g.," I feel that I can communicate openly with my colleagues "). In the study by Moreno et al. (2008) Cronbach's alpha values were .81, .78, .84 for autonomy, competence, and relatedness, respectively.

Friendship goals. The Spanish version of the Friendship Goals Questionnaire in Physical Education from Garn and Sun (2009), validated by Méndez-Giménez, Fernández-Río, and Cecchini (2014), was used. This scale is composed of 8 items grouped into two factors (four items each): friendship-approach goals (e.g., "In my PE lessons… I am trying to deepen my relationships with my friends"), and friendship-avoidance goals (e.g., "… I am trying to avoid disagreements and conflicts with my friends"). The values of Cronbach's alpha in the study of Méndez-Giménez et al. (2014) were .86 and .85, respectively.

Affective well-being. The PANAC (Positive and Negative Affection for Children and Adolescents) was used, an instrument adapted to the school population by Sandín (2003) from the adult version of PANAS (Positive and Negative Affect Schedule). The PANAC is composed of 20 items that load in two dimensions (10 items each): positive affect (e.g., "I feel I have vitality or energy") and negative affect (e.g., "I feel afraid"). In Sandín's (2003) study, Cronbach's alpha coefficients for males were .73 and .74 for positive and negative affect, respectively, while values for girls were .72 and .75, respectively. The items were preceded by the heading: "In my PE classes ...". Participants indicated the degree of agreement with each statement using a Likert scale of 3 points, ranging from 1 (*never*) to 3 (*many times*).

Cognitive well-being. The Satisfaction with Life Questionnaire by Diener et al. (1985) was used to measure a single factor composed of five items (e.g., "If I could live my life again, I would like everything to be the same again"). This instrument has been validated in Spanish by Cabañero et al. (2004). Cronbach's alpha coefficient in the original study was .82.

Intention to be physically active. The Spanish version of the Intention to be Physically Active scale (Hein et al., 2004), validated by Moreno, Moreno, and Cervelló (2007), was used. It consists of five items for the evaluation of a student's intention to be physically active (e.g., "After graduation, I would like to take part in sports club training," preceded by "Regarding your intention to play sports ...". In the study of Hein et al. (2004) Cronbach's alpha was .80.

Except for the two previously specified measures (motivational

Table 1. Internal Reliability Coefficients, Descriptive Statistics, and Bivariate Correlations between the Study Variables at T1 (below the diagonal) and T2 (above)

	Emotional intelligence			Friendship goals		Basic psychological needs			SWL	IPA	Affective well-being		Motivational regulations				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
α (T2)	.87	.87	.83	.88	.80	.82	.80	.82	.84	.87	.78	.82	.86	.87	.74	.80	.81
M (T2)	3.96	3.58	3.64	3.73	3.92	3.22	3.82	3.91	3.94	4.01	2.40	1.67	4.87	5.07	4.10	3.75	2.66
SD (T2)	0.73	0.80	0.74	0.99	0.92	0.95	0.86	0.83	0.80	0.99	0.37	0.42	0.15	1.48	1.51	1.65	.60
1. Recognition	-	.633**	.630**	.221**	.244**	.242**	.391**	.365**	.372**	.294**	.289**	-.222**	.223**	.244**	.119*	-.032	-.129*
2. Control-regulation	.609**	-	.637**	.417**	.319**	.498**	.550**	.512**	.400**	.406**	.470**	-.238**	.444**	.437**	.305**	-.041	-.087
3. Empathy	.678**	.596**	-	.398**	.369**	.415**	.445**	.461**	.331**	.364**	.317**	-.117*	.343**	.397**	.231**	-.029	-.085
4. Friendship-approach	.304**	.263**	.392**	-	.633**	.274**	.349**	.501**	.267**	.250**	.295**	-.056	.430**	.395**	.297**	.115	-.018
5. Frienship-avoidance	.360**	.292**	.418**	.623**	-	.148*	.239**	.333**	.276**	.137*	.160**	-.017	.221**	.238**	.258**	.150*	.040
6. Autonomy	.312**	.442**	.337**	.360**	.386**	-	.603**	.449**	.193**	.394**	.352**	-.161**	.587**	.546**	.298**	-.120*	-.139*
7. Competence	.460**	.531**	.424**	.297**	.355**	.664**	-	.600**	.288**	.674**	.523**	-.264**	.666**	.695**	.377**	-.043	-.166**
8. Relatedness	.422**	.527**	.487**	.540**	.491**	.467**	.527**	-	.307**	.489**	.453**	-.275**	.529**	.504**	.230**	-.105	-.194**
9. Satisfaction with life	.329**	.360**	.272**	.146*	.097	.283**	.268**	.349**	-	.208**	.283**	-.270**	.228**	.192**	.054	-.129*	-.150*
10. Intention to be PA	.247**	.405**	.318**	.198**	.199**	.414**	.643**	.404**	.186**	-	.489**	-.223**	.531**	.608**	.263**	-.125*	-.178**
11. Positive affect	.461**	.432**	.406**	.280**	.266**	.272**	.452**	.402**	.285**	.394**	-	-.201**	.504**	.511**	.236**	-.087	-.158**
12. Negative affect	.016	-.202**	.009	.042	.078	-.119*	-.186**	-.179**	-.153*	-.096	-.001	-	-.217**	-.192**	.141*	.278**	.338**
13. Intrinsic motivation	.328**	.383**	.316**	.396**	.391**	.496**	.583**	.415**	.180**	.539**	.486**	-.021	-	.869**	.436**	-.110	-.173**
14. Identified regulation	.339**	.399**	.378**	.375**	.362**	.449**	.582**	.452**	.168**	.584**	.474**	-.055	.867**	-	.510**	-.069	-.221**
15. Introjected regulation	.180**	.225**	.189**	.238**	.311**	.257**	.336**	.275**	.010	.375**	.287**	.172**	.504**	.543**	-	.519**	.304**
16. External regulation	-.067	-.030	-.051	.002	.130*	-.075	-.080	.001	-.088	-.028	.019	.206**	-.050	-.033	.427**	-	.609**
17. Amotivation	-.231**	-.150*	-.234**	-.138*	-.070	-.176**	-.213**	-.170**	-.071	-.099	-.188**	.153*	-.322**	-.359**	.071	.487**	-
α (T1)	.85	.82	.80	.86	.77	.77	.75	.79	.84	.84	.84	.87	.84	.84	.75	.77	.78
M (T1)	4.01	3.58	3.59	3.75	3.97	3.12	3.84	3.99	3.86	4.10	2.45	1.67	5.15	5.32	4.16	3.67	2.31
SD (T1)	0.79	0.77	0.79	1.02	0.95	0.89	0.79	0.85	0.84	0.91	0.35	0.36	1.43	1.42	1.53	1.65	1.47

*$p < .05$, **$p < .01$.

Table 2. Internal Reliability Coefficients, Descriptive Statistics, and Bivariate Correlations between the Study Variables at T3

				Emotional intelligence			Friendship goals		Basic psychological needs			SWL	IPA	Affective well-being		Motivational regulations			
	α	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Recognition	.87	3.94	0.75	-															
2. Control-regulation	.87	3.64	0.77	.655**	-														
3. Empathy	.83	3.62	0.77	.650**	.681**	-													
4. Friendship-approach	.87	3.67	0.98	.285**	.401**	.426**	-												
5. Frienship-avoidance	.73	3.88	0.83	.259**	.251**	.341**	.642**	-											
6. Autonomy	.82	3.34	0.89	.347**	.535**	.380**	.419**	.298**	-										
7. Competence	.78	3.82	0.81	.423**	.511**	.419**	.404**	.313**	.593**	-									
8. Relatedness	.83	3.89	0.85	.458**	.505**	.510**	.448**	.329**	.520**	.648**	-								
9. Satisfaction with life	.85	3.94	0.84	.408**	.443**	.306**	.213**	.149*	.342**	.412**	.393**	-							
10. Intention PA	.88	4.00	0.98	.335**	.462**	.423**	.240**	.172**	.443**	.670**	.546**	.311**	-						
11. Positive affect	.78	2.39	0.37	.407**	.421**	.415**	.278**	.271**	.386**	.495**	.482**	.325**	.394**	-					
12. Negative affect	.82	1.69	0.42	-.153**	-.124*	-.069	.008	.055	-.105	-.177**	-.196**	-.232**	-.121*	-.220**	-				
13. Intrinsic motivation	.83	5.03	1.41	.381**	.501**	.446**	.388**	.342**	.549**	.638**	.559**	.271**	.617**	.476**	-.076	-			
14. Identified regulation	.86	5.08	1.41	.386**	.479**	.435**	.399**	.339**	.511**	.620**	.497**	.228**	.627**	.445**	-.031	.856**	-		
15. Introjected regulation	.74	4.19	1.45	.208**	.318**	.296**	.358**	.407**	.321**	.212**	.223**	.090	.265**	.199**	.265**	.444**	.470**	-	
16. External regulation	.79	3.81	1.61	-.086	-.017	.052	.141*	.187**	-.047	-.208**	-.118*	-.121*	-.094	-.171**	.311**	-.078	-.104	.518**	-
17. Amotivation	.85	2.96	1.76	-.213**	-.095	.027	.039	.013	-.080	-.180**	-.084	-.207**	-.103	-.182**	.432**	-.169**	-.177**	.339**	.62**

*$p < .05$, **$p < .01$.

regulations and emotional well-being), the participants indicated the degree of agreement with each of the statements using a Likert scale of 5 points, ranging from 1 (*totally disagree*) to 5 (*totally agree*). The Cronbach's alpha of all measuring instruments in the current study are presented in Table 1 (T1 and T2) and Table 2 (T3).

Procedure

The consent of parents and principals of the high schools was obtained. All students were assured their answers would remain anonymous and not be available for teachers or parents. They were also offered the possibility to refuse participation or withdraw at any time. All questionnaires were completed under the supervision of an experienced researcher. The approximate duration of completion of questionnaires was about 30 minutes. The dates on which the questionnaires were administered were April 2015 (T1), October 2015 (T2), and April 2016 (T3).

Data Analysis

Statistical analysis were performed using the SPSS Software (24.0) for Windows (SPSS, Inc., Chicago, IL), as well as the EQS (6.2) program. To provide information on the validity and reliability analysis process, a confirmatory factor analysis (CFA) on the EI and motivational regulation measures was carried out. The following indices of fit were considered to evaluate the fit of the model: a) comparative fit index (*CFI) as an index of incremental fit based on the statistic S-Bχ^2, b) root mean square error approximation (*RMSEA), and c) root mean square residual (RMSR). The following values were considered as indicative of a good fit: ≥ .90 for the *CFI, ≤ .05 for the RMSR, and ≤ .08 for the *RMSEA.

The first objective of this study (a) was to know the EI profiles that high school students can have in PE settings. In order to address this goal, analysis of hierarchical and k-means clusters were carried out. The three factors that make up the EI in PE were used as predictor variables (Cecchini et al., 2018). Following the recommendations of Aldenderfer and Blashfield (1991), a cross-validation technique was carried out to check if the same solution of clusters was found in the different samples of the population. In such a case, it would be plausible to assume that the solution had a certain degree of generality. To do this, the total sample was randomly divided into two groups ($N1 = 141$, $N2 = 141$), and the first group was subjected to hierarchical cluster analysis and the second to k-means cluster analysis in order to confirm the number of clusters identified in the first. Before performing the analysis, all the variables were standardized using *Z* values ($M = 0$ and $SD = 1$). The Ward method was used to minimize the differences in the cluster and avoid the problems of long chains of observations. Until the solution of two conglomerates, the groups that were formed presented small distances. It was found that the solution of two conglomerates was the one that created a greater change in the coefficients of the samples used. Consequently, it was determined that the solution of two conglomerates was the most appropriate. This decision was clearly supported by the dendrogram. In the analysis of k-means clusters with the second group of the sample used, two clusters were also identified. The standardized scores, means, and standard deviations for each variable in the two clusters were very similar. Parallelism and flatness tests were also carried out on them.

To determine that the means obtained in the three predictor variables used to define the conglomerates did not differ in the results obtained through the analysis of hierarchical clusters and the k-means analysis, a MANOVA was carried out taking as dependent variables the three variables indicated and as fixed factors the analysis groups (*N*1 and *N*2) and the two conglomerates obtained (high and low profile). No significant effect emerged for the interaction group of analysis x clusters, Wilks' Lambda (6, 122) = .99, $F = 0.55$, $p = .766$, $\eta^2 = .00$; Wilks' Lambda (3, 278) = .98, $F = 1.94$, $p = .124$, $\eta^2 = .00$, nor, therefore, for any of the variables analyzed in the interaction of the groups: emotional recognition ($F = 2.50$, $p = .115$, $\eta^2 = .00$), emotional control and regulation ($F = .67$, $p = .416$, $\eta^2 = .00$), and empathy ($F = 0.97$, $p = .325$, $\eta^2 = .00$). Based on these results, a k-means analysis was performed for the total sample. The correlations between the three emotional dimensions were positive and moderate.

To address the objective b, three MANOVAS were performed, one at each time (T1, T2, and T3), taking EI profiles as fixed factors, and motivational regulations, basic psychological needs, friendship goals (approach and avoidance), affective (positive and negative affect) and cognitive well-being (satisfaction with life), and intention to be physically active as dependent variables. Finally, to address objective c (to analyze how emotional profiles evolve during a full year), a 2 x 3 (group x time) MANOVA was performed taking the indicated variables as intra-subject measures.

Results

Descriptive Data, Reliability, and Bivariate Correlations

Tables 1 and 2 show the means and standard deviations, internal reliability coefficients and bivariate correlations of the study variables at T1, T2, and T3. The levels of internal consistency were acceptable in all variables and occasions of measurement ($\alpha > .70$). The highest mean values of the EI dimensions were observed in emotional recognition (M = 4.01, 3.96, 3.94, at T1, T2, T3, respectively). Consistently over time, regulation identified ($5.32 \leq M \geq 5.07$), and intrinsic motivation ($5.15 \leq M \geq 4.87$) were the types of motivation with higher scores, while the intention to be physically active obtained the highest values in the variables measured on five anchoring points ($4.1 \leq M \geq 4.0$). Note that the highest and lowest value of each variable in the three measurement occasions are presented in parentheses. In general, correlations between the three EI factors were positive and high ($.678 \leq r \geq .596$); correlations between the EI factors and autonomous motivation (intrinsic and identified regulation) were positive and moderate/low ($.501 \leq r \geq .119$), correlations between the EI factors and basic psychological needs were positive and moderate ($.550 \leq r \geq .242$), correlations between factors of EI and subjective well-being (satisfaction with life and positive affective) were positive and moderate ($.501 \leq r \geq .272$), and between EI factors and the intention to be physically active were positive and moderate/low ($.426 \leq r \geq .247$).

These were the results of the CFA on the EI and motivational regulation measures. Emotional intelligence: S-B$\chi^2(206) = 578.13$, $p < .001$, *CFI = .93, RMSR = .047, *RMSEA = .046, 90% CI [.042, .051]. Motivational regulation: S-B$\chi^2(160) = 660.74$, $p < .001$, *CFI = .93, RMSR = .047, *RMSEA = .061, 90% CI [.056, .066].

Conglomerate Analysis

Figure 1 shows the two profiles identified with the cluster analysis for the total sample. Cluster 1 was characterized with a high profile in the three factors that measure EI (Table 3). It is composed of 168 students of which most are male. Cluster 2 consists of 114 students who show a low profile in the three variables that measure EI and is made up of 114 young people, mostly girls. However, no significant differences were found according to gender ($\chi^2 = 2.49$, $p = .13$), nor were significant differences found according to age ($\chi^2 = 5.34$, $p = .15$).

Table 3. Means, *z*-Scores and Standard Deviations in each of the Identified Groups and Characteristics thereof

Clustering variable	Cluster 1 (n =168)		Cluster 2 (n = 114)	
	$M(z)$	SD	$M(z)$	SD
Emotional recognition	4.42 (.47)	0.44	3.39 (-.66)	0.80
Emotional control and regulation	3.92 (.42)	0.62	3.08 (-.63)	0.68
Emotional empathy	3.90 (.53)	0.62	3.13 (-.75)	0.78
Characteristics of clusters				
Men n (%)	98 (58.3%)		53 (46.5%)	
Women n (%)	70 (41.7%)		61 (53.5%)	
Age	12.95		13.15	

Three MANOVAS were performed, one at each time (T1, T2, and T3), taking EI profiles as fixed factors, and motivational regulations, basic psychological needs, friendship goals (approach and avoidance), affective (positive and negative affect) and cognitive well-being (satisfaction with life), and intention to be physically active as dependent variables (Table 4). In all of them, a significant effect emerged for the group: T1, Wilks' Lambda (17, 264) = .33, $F = 30.83$, $p < .001$, $\eta^2 = .67$; T2, Wilks' Lambda (17, 264) = .78, $F = 4.28$, $p < .001$, $\eta^2 = .22$; T3, Wilks' Lambda (17, 264) = .78, $F = 4.36$, $p < .001$, $\eta^2 = .22$. At three times, statistically significant differences were observed in all variables except external regulation at T1, $F = 0.92$, $p = .339$, $\eta^2 = .00$, at T2, $F = 1.22$, $p = .271$, $\eta^2 = .00$, and at T3, $F = 3.75$, $p = .054$, $\eta^2 = .01$; amotivation at T2, $F = 2.00$, $p = .158$, $\eta^2 = .00$, and at T3, $F = 3.42$, $p = .065$, $\eta^2 = .01$; friendship-approach at T3, $F = 1.71$, $p = .193$, $\eta^2 = .01$; friendship-avoidance at T3, $F = 1.25$, $p = .265$, $\eta^2 = .00$; and introjected regulation at T3, $F = 0.165$, $p = .685$, $\eta^2 = .00$.

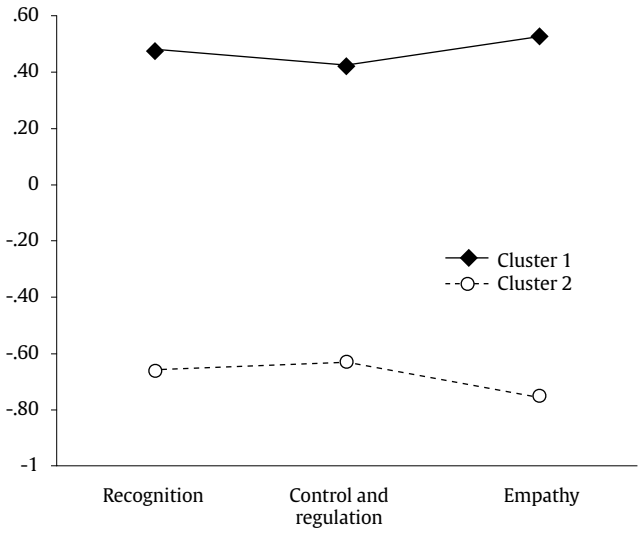

Figure 1. Identified Emotional Intelligence Profiles.

To know the longitudinal changes, a 2 x 3 MANOVA was performed (group x time) taking the following variables as intra-subject measures: motivational regulations, basic psychological needs, friendship goals (approximation and avoidance), affective well-being (affectivity) and cognitive (satisfaction with life), and intentions to be physically active. A significant multivariate effect for the time-group interaction, Wilks' Lambda (28, 253) = .81, $F = 2.12$, $p < .01$, $\eta^2 = .19$, emerged. Subsequent univariate analysis showed changes in certain variables: friendship-approach, $F = 3.20$, $p < .05$, $\eta^2 = .01$; avoidance, $F = 6.94$, $p < .01$, $\eta^2 = .02$; introjected regulation, $F = 3.36$, $p < .05$, $\eta^2 = .01$; autonomy, $F = 5.52$, $p < .01$, $\eta^2 = .02$; competence, $F = 6.15$, $p < .01$, $\eta^2 = .02$; relatedness, $F = 5.03$, $p < .01$, $\eta^2 = .02$; life with satisfaction, $F = 15.70$, $p < .001$, $\eta^2 = .05$; and intention to be physically active, $F = 3.50$, $p < .05$, $\eta^2 = .01$. Three behavior patterns of the variables emerged over time:

a) A similar pattern of behavior was observed in friendship-approach, friendship-avoidance, and introjected regulation variables, consisting in a progressive approach of the scores between both clusters as time went by, so that at T3 there were no significant differences (Figure 2).
b) Other pattern of similar behavior was observed among basic psychological needs (autonomy, competence, and relationship), satisfaction with life and intention to be physically active variables. Differences between clusters in the scores from T1 to T2 were reduced and remain constant at T3. However, significant differences were observed between clusters in these variables at all measurement occasions.
c) On the other hand, no differences were observed in the following variables: intrinsic motivation, $F = 2.19$, $p = .112$, $\eta^2 = .01$; identified regulation, $F = 3.07$, $p = .050$, $\eta^2 = .01$; external regulation, $F = .41$, $p = .661$, $\eta^2 = .00$; amotivation, $F = .28$, $p = .599$, $\eta^2 = .00$; positive affect, $F = 2.97$, $p = .052$, $\eta^2 = .01$; and negative affect, $F = .30$, $p = .719$, $\eta^2 = .00$. In these variables, a third pattern of behavior was observed in which the differences between groups remained more or less constant over time.

Table 4. Means, z-Scores and Standard Deviations of Dependent Variables in each Cluster Identified at T1, T2, and T3

	T1				T2				T3			
	Cluster 1		Cluster 2		Cluster 1		Cluster 2		Cluster 1		Cluster 2	
	M(z)	*SD*	*M*(z)	*SD*	*M*(z)	*SD*	*M*(z)	*SD*	*M*(z)	*SD*	*M*(z)	*SD*
Friendship-app.	3.93 (0.18)^{1}	0.97	3.47 (-0.27)^{2}	1.03	3.84 (0.12)^{1}	0.96	3.56 (-0.17)^{2}	1.03	3.74 (0.06)^{1}	0.94	3.58 (-0.09)^{1}	1.02
Friendship-av.	4.19 (0.24)^{1}	0.82	3.63 (-0.36)^{2}	1.01	4.05 (0.15)^{1}	0.88	3.71 (-0.22)^{2}	0.95	3.93 (0.06)^{1}	0.82	3.80 (-0.09)^{1}	0.83
Autonomy	3.42 (0.33)^{1}	0.81	2.69 (-0.49)^{2}	0.81	3.37 (0.16)^{1}	0.89	3.00 (-0.24)^{2}	0.98	3.51 (0.19)^{1}	0.84	3.10 (-0.28)^{2}	0.91
Competence	4.19 (0.44)^{1}	0.61	3.33 (-0.65)^{2}	0.76	4.05 (0.27)^{1}	0.73	3.47 (-0.41)^{2}	0.90	4.05 (0.28)^{1}	0.70	3.48 (-0.42)^{2}	0.83
Relatedness	4.30 (0.36)^{1}	0.64	3.53 (-0.54)^{2}	0.90	4.10 (0.23)^{1}	0.68	3.62 (-0.35)^{2}	0.94	4.08 (0.23)^{1}	0.70	3.61 (-0.34)^{2}	0.96
Satisfaction life	4.25 (0.47)^{1}	0.54	3.27 (-0.70)^{2}	0.88	4.13 (0.23)^{1}	0.70	3.66 (-0.35)^{2}	0.87	4.11 (0.20)^{1}	0.81	3.70 (-0.29)^{2}	0.81
Intention PA	4.47 (0.41)^{1}	0.63	3.54 (-0.61)^{2}	0.96	4.30 (0.29)^{1}	0.79	3.59 (-0.43)^{2}	1.09	4.29 (0.29)^{1}	0.83	3.57 (-0.44)^{2}	1.02
Positive affect	2.57 (0.33)^{1}	0.29	2.28 (-0.50)^{2}	0.35	2.48 (0.22)^{1}	0.33	2.28 (-0.33)^{2}	0.37	2.46 (0.18)^{1}	0.34	2.29 (-0.26)^{2}	0.40
Negative affect	1.63 (-0.11)^{1}	0.36	1.73 (0.17)^{2}	0.35	1.62 (-0.11)^{1}	0.40	1.74 (0.17)^{2}	0.43	1.64 (-0.13)^{1}	0.43	1.78 (0.20)^{2}	0.40
Intrinsin motivation	5.61 (0.32)^{1}	1.19	4.47 (-0.48)^{2}	1.46	5.21 (0.22)^{1}	1.42	4.37 (-0.33)^{2}	1.50	5.37 (0.25)^{1}	1.26	4.51 (-0.37)^{2}	1.45
Identified reg.	5.78 (0.32)^{1}	1.10	4.64 (-0.48)^{2}	1.53	5.45 (0.25)^{1}	1.31	4.51 (-0.38)^{2}	1.53	5.39 (0.22)^{1}	1.25	4.61 (-0.33)^{2}	1.50
Introjected reg.	4.39 (0.15)^{1}	1.57	3.83 (-0.22)^{2}	1.40	4.28 (0.12)^{1}	1.56	3.83 (-0.18)^{2}	1.39	4.24 (0.03)^{1}	1.50	4.12 (-0.05)^{1}	1.38
External reg.	3.61 (-0.03)^{1}	1.75	3.75 (0.05)^{1}	1.47	3.67 (-0.05)^{1}	1.73	3.87 (0.07)^{1}	1.51	3.68 (-0.09)^{1}	1.73	4.02 (0.14)^{1}	1.36
Amotivation	2.13 (-0.12)^{1}	1.43	2.57 (0.18)^{2}	1.48	2.55 (-0.07)^{1}	1.63	2.82 (0.10)^{1}	1.50	2.81 (-0.08)^{1}	1.84	3.17 (0.13)^{1}	1.61

Note. In each row, means with different superscript differ at least at $p < .05$ level.

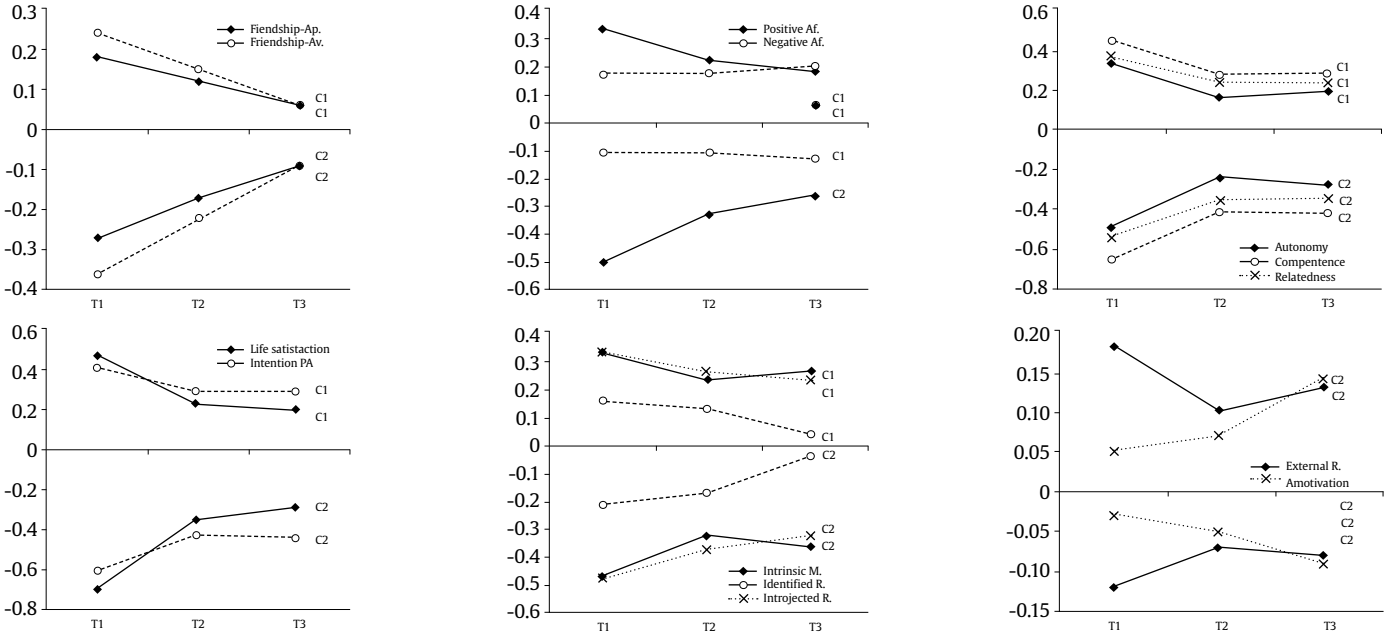

Figure 2. Results of Emotional Intelligence Profiles through T1, T2, and T3. C1 = cluster 1; C2 = cluster 2.

Discussion

The results confirmed the first hypothesis about the existence of two different EI clusters. The first cluster (high EI) had high levels of emotional recognition, control and regulation, and empathy, while the second (low EI) obtained lower values in these dimensions. The analysis showed significant differences between both clusters in all variables and measurement times, except in introjected regulation at T3, external regulation at T1, T2, and T3, amotivation at T2 and T3, and friendship goals (approximation and avoidance) at T3. In general, the high EI cluster behaved more adaptively and was associated with higher levels of intrinsic motivation, identified regulation, introjected regulation, basic psychological needs, friendship goals, positive affect, satisfaction with life and intention to be active, as well as at lower levels of negative affect.

The high EI cluster was associated with the most self-determined types of regulation. The results were also consistent with literature regarding correlations of the three factors of EI with self-determined motivation (Arribas-Galarraga et al., 2017; Cera et al., 2015), although values higher than those obtained in different studies emerged. Students with higher EI tend to be regulated in an intrinsic and identified way, that is, they participate in class activities because they consider them enjoyable and interesting, and these activities fit their personal goals (e.g., Spence, Oades, & Caputi, 2004). Additionally, positive and low relationships were found with introjected regulation. In the PE context, where the public exposure of personal executions is constant, a positive relationship between emotional recognition, control and empathy, and the regulations made to avoid guilt and/or shame emerge. However, this positive association with introjected regulation is not consistent in literature. For example, Spence et al. (2004) found that college students with lower trait EI scores showed a tendency to be motivated in a controlled manner (including introjected and external regulation). At the same time,

in the present study, negative and low relationships of EI and amotivation were found, which were only maintained over time with emotional recognition. In addition, no differences were found between clusters in the levels of external regulation. These results contrast with those obtained by Spence et al. (2004), who reported moderate and negative relations between external regulation and trait EI. Age, context, educational stage, type of EI (ability vs. trait), and instruments used in both studies could be the cause of these divergences.

The high EI cluster was also associated with greater satisfaction of the three basic psychological needs. Positive and moderate correlations were found so that students more able to recognize, regulate, and control their emotions and empathize with classmates were more likely to perceive satisfaction of competence, autonomy, and relationship with their peers. The SDT points out that satisfaction of the three needs is required to develop and maintain intrinsic motivation, facilitate the integration of extrinsic motivation, and become integrated with respect to the regulation of one's own emotions (Ryan & Deci, 2000). The positive correlations found, although more consistent, are aligned with those reported in PE (Cera et al., 2015). Researchers have analyzed the role of support for needs in emotional exchanges, showing that satisfaction of needs impacts on the emotional experience of people, their willingness to express their emotions and the relative authenticity of these expressions, as well as their subsequent orientations towards emotional exchanges with classmates (La Guardia, 2007).

As for (cognitive and affective) subjective well-being, the results of the study are consistent with those in the literature (Extremera et al., 2011; Sánchez-Álvarez et al., 2016). Positive and moderate relationships of the three dimensions of EI and satisfaction with life were found (Cazan, & Năstasă, 2015). In sports, Barreiro, Boleto, Marques, and Serpa (2014) reported that the level of EI and life satisfaction indicated by adolescents involved in federated sports practice was significantly higher than that indicated by non-practitioners. These results reinforced, on the one hand, the idea that sports practice is strongly associated with the ability to identify, understand, and manage emotions in oneself and others. Moreover, on the other hand, they confirmed the positive association between satisfaction with life and PE (Salama-Younes, 2011) or sports practice (Bustag & Duman, 2010). The PE and sports practice can be a space prone to develop feelings of belonging, recognition, new interpersonal relationships, the experience of intense sensations, overcoming limits, which can increase the quality of life of adolescents. Emotionally intelligent adolescents tend to be more satisfied with their lives.

The results related to intention to be physically active are consequent with literature reflecting a positive correlation between EI and PA levels (e.g., Zysberg & Hemmel, 2018). Li, Lu, and Wang (2009) showed that college participants who performed a "recommended" level of PA reported significantly higher scores on EI, and some measures of physical fitness related to health and quality of life-related to health than participants with a level of "insufficient" and "inactive" PA. They concluded that participation in PA could be an effective way to improve the physical, psychological, and emotional health of university students. Although most research has proposed that a higher EI trait leads to people being more physically active (causal relationship between EI and PA), others have shown that regular PA contributes to changes in personality traits (Stephan, Sutin, & Terracciano, 2014), suggesting that EI, even at the trait level, could be modified by continuing participation in PA. More experimental and longitudinal research is needed before reaching conclusive results (Laborde et al., 2016). Certainly, the present study did not directly analyze the levels of students' PA. The high IE cluster was positively related to a higher intention to be physically active. The students of this cluster reported higher willingness to be physically active. It is the first time that this association has been informed. Since the intention is considered a strong predictor of PA behavior (Ajzen, 1991), these findings could be of interest for practitioners and researchers. For example, by creating environments and developing programs to increase students' EI perceptions, PE teachers could help them to expand their intention to be active. Nevertheless, more research is needed to confirm this relationship and to examine how it can be affected in PE contexts.

The results related to friendship goals are consistent with previous research that links EI with social adjustment (Brackett et al., 2004; Engelberg & Sjoberg, 2004; Salguero et al., 2015). The high EI cluster was positively associated, as expected, with friendship-approach goals but, surprisingly, also with the friendship-avoidance goals. The ability to perceive one's own and peers emotions, regulate one's moods, and empathize seems to be helpful to improve social relationships among equals. To date, no previous study had linked EI with the establishment of friendship goals, and less in the PE context. As in other studies (Garn & Sun, 2009; Méndez-Giménez, Fernández-Río, & Cecchini, 2015), data suggest that goals of friendship-avoidance, with a global average score even higher than the friendship-approach goals, are outstanding for adolescents in PE classes. There are many situations of social interaction in PE class that could activate the friendship-avoidance goals, including the fear of rejection that could involve making mistakes during sports activities or avoiding failure in physical fitness tests (Garn & Sun, 2009). It is suggested that students with high EI abilities can recognize and manage both positive and negative emotions (shame, fear) in their efforts to achieve social competence and avoid social incompetence.

Concerning to changes of each cluster over time, three patterns of behavior related to dependent variables emerged: a) a pattern of progressive approach between clusters as time went by so that at T3 there were no significant differences (goals friendship and introjected regulation); b) a pattern of reduction of differences between clusters in scores from T1 to T2, keeping constant between T2 and T3, and with significant differences between clusters in all measurement occasions; and c) a pattern of differences between constant groups in time (intrinsic motivation, identified regulation, external regulation, amotivation, positive affect, and negative affect). It is concluded that most of the differences found between the clusters are maintained in early adolescence, which could cause maladaptive effects in a low EI profile in the absence of efficient interventions.

The results of this study have important implications for practice. First, the cluster with high levels of EI was more adaptive. Students with a high EI profile reported higher levels of self-determined motivation, satisfaction of their basic psychological needs, affective adjustment, satisfaction with life, desire to be physically active, and predisposition to strengthen their bonds of friendship in PE settings. A quality PE, focusing on the development of EI, could increase these effects. Secondly, the worrying findings that indicate the differences between both clusters are maintained over time in almost all motivational and well-being variables should be addressed. This gap reveals the vulnerability of younger and less emotionally intelligent students. Emotional education, therefore, must be addressed in the school context and specifically as soon as possible through specific programs. This would involve all curricular subjects, not just PE.

The empirical results reported herein should be considered in the light of some limitations. First, the results draw the picture of relationships between clusters of EI and the variables to studies but limited to one year. The second limitation concerns the use of non-probability sampling techniques, specifically, convenience sampling. To carry out this study, the authors contacted several high schools that agreed to participate due to proximity and accessibility to PE teachers, but did not use a randomization technique. The third limitation is that students provided, at the same time, data about all variables. This could have produced a bias in the participants' responses (social desirability or acquiescence) or an over- or underestimation of scores and correlations among variables. Future research should complete this picture by making

more longitudinal and experimental designs in order to check the trends found in adolescence and expand it to other student cohorts. In addition, specific programs should be developed that could mitigate the differences between clusters. These programs should be based on pedagogical models and content, such as adventure and outdoor activities and body language (mime), which have been tested with positive effects for the development of EI in PE (Méndez-Giménez, Martínez, & Valverde, 2017).

Conflict of Interest

The authors of this article declare no conflict of interest.

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