Gender and corporal expression activity in physical education: Effect of an intervention on students’ motivational processes

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Gender and corporal expression activity in physical education: Effect of an intervention on students’ motivational processes

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Abstract

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Keywords

Motivational climate, basic psychological needs, self-determined motivation, enjoyment, teaching intervention
Introduction

Physical inactivity has become one of the main global public health issues over the last few decades (Pratt et al., 2014). As a result of this situation, a large number of initiatives and physical activity (PA) programmes have emerged, trying to raise awareness and mobilise all sectors of the population (Belton et al., 2014; Naylor et al., 2015). Physical Education (PE), as a compulsory subject that plays an important role in promoting PA, aims to foster school and out-of-school PA-sport engagement (Sallis et al., 2012). This work seems to be essential from the educational perspective given the existing connection between healthy habits, developed at early ages, and the lifestyle adopted throughout adulthood (Herman et al., 2009).

However, current levels of moderate-to-vigorous PA (MVPA) continue to be low in children and adolescents, especially in females (Hallal et al., 2012). Authors such as Sallis et al. (2012) suggest implementing healthy policies and intervention studies based on scientific evidence to help to qualitatively and quantitatively improve engagement levels in MVPA inside and outside PE classes. Thus, due to the existing limitation in the number of hours dedicated to the PE subject, adherence to PA and its promotion are considered to be some of the priority objectives of this subject (Dauenhauer and Keating, 2011). This question becomes particularly important in females. Different studies show that a high percentage of girls do not have gratifying experiences in PE
classes, thus giving rise to low levels of MVPA (Mitchell et al., 2013; Murillo et al., 2014).

Over the last few years, Self-Determination Theory (SDT) (Ryan and Deci, 2000) and Achievement Goal Theory (AGT) (Nicholls, 1989) have appeared in the PE context as two social cognitive theories that explain the functioning of motivational processes. This research study makes it possible to specifically address the existing relationship of motivational variables in these two theories through the Hierarchical Model of Intrinsic and Extrinsic Motivation sequence (Vallerand, 2007).

A substantial body of research grounded in AGT (Nicholls, 1989) points out that the motivational climate perceived by pupils in PE classes may be very useful to generate more positive and adaptive cognitive, affective and behavioural consequences in students. Based on previous studies within the PE context (see Braithwaite et al., 2011 for a review), it seems important for teachers to intervene in order to generate a task-oriented climate (i.e. inter-individual progress, personal effort and self-improvement are evaluated), moving away from the ego-oriented climate (i.e. social comparison among classmates is evaluated) (Harwood et al., 2008). Therefore, in a task-oriented climate, all students will probably feel competent in terms of their physical abilities and achievements, where effort brings rewards. In contrast, in an ego-oriented climate only students who perceive that their skills are better than those of their peers could feel more satisfied and competent. According to AGT, PE teachers should create a mastery
climate by means of the TARGET framework (Ames, 1992). The initials of the six dimensions that form the acronym TARGET refer to:

- Task (design of activities and objectives adapted to their specific needs and level).
- Authority (create opportunities for decision-making).
- Recognition (distribution of positive feedback and rewards), grouping (student learning groups are varied and heterogeneous).
- Evaluation (criteria focused on the process and effort).
- Time (appropriateness and relevance of the child's own learning priorities and pacing).

Similarly, SDT (Ryan and Deci, 2000) indicates that social factors in PE classes (e.g. motivational climate generated by the teacher, from AGT) may have an impact on students’ motivational processes. In this regard, an interpersonal teaching style may facilitate satisfaction of the three basic psychological needs (BPN) (i.e. autonomy, competence and relatedness) (Deci and Ryan, 2000). Autonomy refers to the students’ need to perceive a sense of freedom in their own actions when they participate in the learning process (Deci and Ryan, 2000). The need for competence refers to a sense of being effective or feeling successful in different activities (Deci and Ryan, 2000). The need for relatedness involves the experience of feeling connected and integrated with others (Deci and Ryan, 2000). More specifically, high levels of BPN are associated with
more self-determined forms of motivation (i.e. intrinsic motivation, integrated regulation and identified regulation) (Sánchez-Oliva et al., 2014). Consequently, along this continuum, SDT distinguishes between intrinsic motivation (i.e. engaging in an activity for the inherent feeling of pleasure and satisfaction derived from participating in it), integrated regulation (i.e. doing an activity because it is integrated into one’s own lifestyle, providing coherence with one’s other values and beliefs) (Deci and Ryan, 2000), and identified regulation (i.e. engaging in an activity because of the relevance and the outcomes associated with it) (Deci and Ryan, 2000). In the specific context of PE, findings have demonstrated that nurturing students' BPN predicts self-determined forms of motivation and consequently, positive affective, cognitive and behavioural consequences, such as enjoyment, effort and academic performance (Gråstén et al., 2012; Ntoumanis and Standage, 2009).

However, a more controlling teaching style may frustrate these BPN, associated with less self-determined forms of motivation (i.e. introjected regulation, external regulation and amotivation) (Haerens et al., 2015). According to SDT, introjected regulation (i.e. engaging in an activity to reduce or avoid feelings of sense of guilt) (Deci and Ryan, 2000) and external regulation (i.e. doing an activity to get a reward) (Deci and Ryan, 2000) represent the two forms of controlled motivation. Finally, amotivation represents the least self-determined motivation, as there is a lack of intrinsic and extrinsic motivation to do an activity (Deci and Ryan, 2000).
Consistent with SDT, AGT proposes that a perceived task-oriented climate initiated by the PE teacher may help to satisfy the BPN (e.g. Méndez-Giménez et al., 2013), to develop more self-determined forms of motivation (e.g. Barkoukis and Hagger, 2013), enjoyment (e.g. Gråstén et al., 2012), or the intention to be physically active and carry out leisure-time PA (e.g. Cecchini et al., 2014). More specifically, recent studies have revealed that, in females, perceived motivational climate has an influence on perceived competence (Garn et al., 2013) and “it is in fact one of the most influential variables for engaging in PA” (Smart et al., 2012). Moreover, there is sufficient evidence in the PE context to indicate that the manipulation of different structures of the TARGET areas (i.e. task, authority, recognition, grouping, evaluation and time) (Ames, 1992), is very effective in developing a greater perceived task-oriented climate. This generates higher levels of autonomous motivation (González-Cutre et al., 2011), perceived competence (Barkoukis et al., 2008), perceived autonomy and perceived effort (Wallhead and Ntoumanis, 2004), enjoyment (Viciana et al., 2007), self-efficacy and skill development (Barkoukis et al., 2010) and intentions to be physically active (Cecchini et al., 2014). However, a recent meta-analysis, involving 22 PE intervention studies (Braithwaite et al., 2011), shows that the time periods (e.g. from one day to seven seven months), the activity to develop this type of intervention (e.g. football, basketball, hockey, volleyball) and the components (e.g. several or all TARGET areas) differ significantly from one study to another. Taking these considerations into account, there are few
studies that have explored the effects of manipulating the motivational climate in the corporal expression content area (i.e. this is a type of expressive and aesthetic activity that focuses on physical behaviours, whose aim is to communicate ideas, feelings and sensations), based on all TARGET dimensions throughout 10 sessions. According to different intervention studies, TARGET could be effective in short periods of time (Cecchini et al., 2001; Weigand and Burnton, 2002). More specifically, the development of specific strategies for each content area integrated into the PE teacher’s curricular programme seems to be essential in order to configure an optimal motivational climate (Braithwaite et al., 2011).

Consistent with the conceptual framework of the study, Vallerand’s Hierarchical Model of Intrinsic and Extrinsic Motivation (2007) proposed that teaching interventions in PE classes may have a great influence on students’ experiences, autonomous motivation and positive consequences (Sánchez-Oliva et al., 2014). This proposal must be taken into account because repeated motivational and positive outcomes at a situational level (i.e. task, class or unit in PE) may impact the next level up (i.e. contextual level), such as the PE subject or leisure-time PA (González-Cutre et al., 2014b).

Moreover, many researchers emphasise that female students are a subgroup that warrant special attention. Girls’ disengagement is a topical issue studied in PE research (Camacho-Miñano et al., 2011). A substantial body of research points out that females present barriers to engaging in PA (e.g. less self-determined type of motivation, less
perceived competence and support to autonomy, lack of predisposition to some content areas), which, in some cases, limit their participation in PE classes and their adherence to PA (Enright and O’Sullivan, 2012; Inchley et al., 2011). A recent study by Baena-Extemera et al. (2012) points out that boys experience higher levels of self-determined motivation and enjoyment than girls in PE classes. Therefore, psychological variables seem to be decisive in improving students’ behavioural aspects and in developing more positive and adaptive experiences in the school and out-of-school environment (Van den Berghe et al., 2014; Zook et al., 2014).

Likewise, the reasons for engaging in PE, as well as preferences and interests seem to differ between boys and girls (Leversen et al., 2012). Authors such as Ruiz et al. (2010) point out that in secondary education, boys normally prefer more competitive activities, typical of invasion sports (e.g. football, basketball, handball), while girls are more inclined towards cooperative activities (e.g. collaborative tasks, corporal expression activities), where the result is not the main objective of the game. However, these types of corporal expression activities do not feature frequently in the teaching programmes of many PE teachers (Robles et al., 2013). It is one of the least valued content areas in PE (Matanin and Collier, 2003). In this sense, and given the many content area related teaching problems (Sebire et al., 2013), many authors (e.g. Amado et al., 2014; Brooke et al., 2014) request teaching resources and proposals to adhere students to this type of activities, in an attempt to achieve more positive experiences.
Although previous findings indicate that a motivational climate could be positively related to the need for satisfaction in PE (Ullrich-French and Cox, 2014) and in the sport context (Álvarez et al., 2012), this study aims to extend these findings by investigating whether the positive effects of manipulating the task-oriented climate can nurture students' BPN. Linking AGT and SDT, the current study suggests that a motivational task climate focused on intra-individual progress and effort can influence the students' personal sense of freedom and control of this learning process (autonomy satisfaction). Moreover, a task-oriented climate may generate a different way of looking at the learning process, taking interest in each student's progress (competence satisfaction) and encouraging cooperation among students because competition is not the main purpose of the learning process (relatedness satisfaction).

Previous research shows that no quasi-experimental studies have examined the effects of manipulating the task-oriented climate using strategies associated with the TARGET areas, taking into account the gender of the sample, and in the corporal expression content area. As suggested by Braithwaite et al. (2011) in a recent meta-analysis, it seems advisable to evaluate if the intervention has been effective in both girls and boys, given that they expressed different preferences and interests in PE classes. Thus, the study had two objectives: 1) To assess the impact of an intervention programme in a corporal expression unit, focused on skipping rope activities, on a series of motivational variables and affective consequences; 2) To analyse if gender could be an influential
variable on the effectiveness of the intervention. The first hypothesis stated that the
strategies developed in the intervention programme, based on the TARGET areas,
would generate a greater task-oriented climate and consequently greater satisfaction of
the BPN, greater self-determined regulation and greater enjoyment in the experimental
group. The second hypothesis postulated that the intervention programme would be
equally effective in boys and girls of the experimental group.

Methods

Research design

The research was carried out within the PE educational context, under a quasi-
experimental design and with a non-equivalent control group (Campbell and Stanley
1966). Four classes were randomly assigned to the control group and four to the
experimental group. The class groups were already established by the school at the start
of the school year following standard criteria for testing homogeneity: age, gender, class
size, academic performance, and students with special needs.

Both the control and experimental groups conducted a corporal expression unit
comprised of skipping rope activities that lasted for 10 sessions. The skipping rope
activities were geared towards corporal expression because the final goal of the unit was
to design and implement a choreographic sequence with skipping ropes, by way of body
movement. Only the experimental group applied the TARGET programme strategies.
Considering the content area, there are several reasons for choosing this content area. Firstly, and to our knowledge, this is the first study in educational literature that has tested the effectiveness of TARGET on motivation-related variables in terms of the skipping rope activity. Previous studies (e.g. Ha et al., 2006; Ha et al., 2014) proposed a school-based skipping rope intervention design to increase MVPA in school PE lessons. Secondly, in Spain, it is complicated for PE teachers to design and develop corporal expression activities due to their lack of knowledge and experience (Robles et al., 2013). More specifically, the two teachers who participated in the study hardly ever used this type of content area in their curricular programme. Thirdly, the students had no experience in skipping rope activities in PE lessons, thus no pre-test to check homogeneity of variances was required. During the first session, it was verified that none of the pupils had procedural knowledge of this activity (e.g. principle of jumping inside the rope) or previous experiences in PE related to this content area in the school area. Finally, skipping rope is one of the school activities that is more highly susceptible to drop-out (Brooke et al., 2014). Historically, engaging in this activity has been attributed to girls (Henshaw et al., 1992). Interventions, therefore, are conceived to be very important in the corporal expression content area to create positive experiences from early stages that may increase students’ motivation and foster their predisposition to engage in this activity in other contexts.
Participants and settings

A total of 224 students participated out of an initial sample of 233 first year secondary education students, from the same high school. Originally, students came from the same state school before entering the high school. Their ages varied between 12 and 14 (\(M\) age = 12.37, \(SD = 0.64\)) and there were 105 boys and 119 girls. The number of students in the eight classes ranged from 25 to 30 students. The student selection inclusion criteria were compliance with all the instruments relating to the study variables and attendance at 10 sessions. Nine students were eliminated from the final sample: four of them due to invalidated questionnaires, two were injured and three did not attend all the lessons. The experimental group (n = 109) was comprised of four classes (51 boys and 58 girls), and the control group (n = 115) was made up of another four classes (54 boys and 61 girls). The units were taught by two different PE teachers (one male and one female), with degrees in Sport and Exercise Science from the same university, and with more than two years’ teaching experience at the high school. Before starting the study, neither of the PE teachers had any knowledge of the theories and motivational strategies. The Ethics Committee of the University, the management team and the school’s PE department approved the development of the study. As all the students were under age, their parents or tutors had to authorise their participation. In terms of ethics, the guidelines of the Declaration of Helsinki (2008) were followed with respect to consent, confidentiality and the anonymous nature of the responses.
**Instruments**

**Motivational Climate.** The Spanish version of the Perceived Motivational Climate Scale (PMCS) (Biddle et al., 1995), adapted to the PE context (Gutiérrez et al., 2011) was used. The introductory sentence of the scale was adapted to the corporal expression content area: “In the skipping rope lessons, our PE teacher…”. It was comprised of 19 items, grouped into two factors that measured perceived task-oriented motivational climate (12 items; e.g. “The PE teacher is pleased when everyone improves”) and perceived ego-oriented motivational climate (7 items; e.g. "The teacher particularly appreciates those who win"). The reliability analysis obtained values of Cronbach’s alpha of .81 for the task-oriented climate and .80 for the ego-oriented climate.

**Basic Psychological Needs.** The Spanish version of the Basic Psychological Needs in Exercise Scale (BPNES) (Vlachopoulos and Michailidou, 2006) adapted to the PE context (Moreno et al., 2008) was used. This instrument was adapted, modifying the initial sentence to the skipping rope content area, “In the skipping rope lessons…”. This questionnaire contained 12 items grouped into three factors (4 items per factor) that measured autonomy (e.g. "I feel that I have the opportunity to make choices with respect to the way I exercise"), competence (e.g. "I feel that exercise is an activity that I do very well") and relatedness (e.g. "I feel extremely comfortable when I am with the other exercise participants"). The values of Cronbach’s alpha were .78 for autonomy satisfaction, .72 for perceived competence and .77 for relatedness.
Self-Determined Motivation. The Spanish version of the Situational Motivation Scale (SIMS) (Guay et al., Blanchard, 2000), validated to the education context (Martin-Albo et al., 2009) was used. The introductory question was adapted to the skipping rope content area: "Why do you currently take part in the skipping rope lessons?" The scale was comprised of 14 items, grouped into four factors that measured intrinsic motivation (4 items, e.g. "Because I feel good when I do this activity"), identified regulation (3 items, e.g. "Because I believe that this activity is important for me"), external regulation (3 items, e.g. "Because I feel that I have to do it") and amotivation (4 items, e.g. "I do this activity but I am not sure if it is worth it"). Due to the fact that this version had not been previously used in the PE context, the validity of the instrument was verified through a confirmatory factor analysis (CFA), testing the same theoretical model presented in the Spanish validation by Martin-Albo et al. (2009) and comparing it with the data obtained in this study. The results of the CFA indicated adequate adjustment of the data for a four-factor structure through the different adjustment indices assessed ($\chi^2 = 186.58, p < .001; \chi^2/df = 2.63; \text{RMSEA} = .08; \text{CFI} = .92; \text{TLI} = .90; \text{SRMR} = .07$).

The coefficients of Cronbach’s alpha were .87 for intrinsic motivation, .69 for identified regulation, .82 for external regulation and .76 for amotivation.

Enjoyment/Satisfaction and Boredom. The Spanish version of the Sport Satisfaction Instrument (SSI) (Duda and Nicholls, 1992), validated and adapted to PE (Baena-Extremera et al., 2012), was used. The heading was adapted to the skipping rope content.
area: “Have you had a good time in the PE skipping rope classes...?” The scale was comprised of a total of 8 items, grouped into two factors that measured enjoyment/satisfaction (5 items, e.g. "I usually enjoy this activity") and boredom (3 items, e.g. "In this activity, I usually wish the class would end quickly"). The values of Cronbach’s alpha were .72 for enjoyment and .89 for boredom.

The response format used in each of the measurement instruments was indicated on a Likert scale of one to five, where 1 corresponded to totally disagree and 5 to totally agree with the question asked.

**Procedure**

A five-week training programme with a total of 55 hours was prepared for the experimental group teacher, following the guidelines indicated by Braithwaite et al. (2011), in order to guarantee that the subsequent intervention programme was correctly implemented. During the first phase, the teacher received specific training aimed at understanding the social cognitive theories present in this study. Practical sessions related to the skipping rope content area were also held and PE teaching methods using digital video (DV) were analyzed, in order to learn to implement and recognise different teaching intervention strategies. The PE teacher observed five videotapes of PE lessons, with a five-minute interval between each to report on the teaching behaviour. In the second phase, a team of experts (four males and one female) in the fields of PE teaching and PE research drew up, together with the experimental group PE teacher, the corporal
expression unit, focusing on skipping rope activities. On the one hand, two of the experts had at least fifteen years’ experience in skipping rope activities at high school level and they were also highly qualified in Sport and Exercise Science in Spain. On the other hand, two of the experts have published material on the application of TARGET areas in PE and have knowledge of the motivational theories. Finally, one of the males was an expert in the PE curriculum in Spain and was qualified in the design of systematic observation instruments to identify strategies associated with motivational climates created by PE teachers. In all sessions, at least one motivational strategy located within each one of the TARGET dimensions (i.e. task, authority, recognition, grouping, evaluation and time) was implemented in the design. Finally, and during the third phase, different teaching videos and curricular material were prepared to implement some of the teaching strategies. The two PE teachers taught this content area at the same time during the months of February to April, with a frequency of 2 weekly sessions, each one lasting for 50 minutes. After the last unit session, a dossier was given out with the different questionnaires to be completed in the PE classroom, without the PE teacher. The time required by the students to complete the different questionnaires was 15 to 20 minutes.

Intervention

The pedagogical model used in the corporal expression unit, both in the control group and in the experimental group, was the tactical games model (TGM) (see Stoltz and Pill,
2014 for a further review). The independent variable of the study was the teaching intervention programme, based on the development and application of specific motivational strategies associated with the TARGET areas (Ames, 1992). The control group teacher had no knowledge of the theories and motivational strategies. Thus, the TARGET areas were not intentionally used in the control group.

The experimental group unit began with the video that showed corporal expression, focused on skipping rope activities, in different contexts (e.g. streets, PE, playtimes), trying to reduce social stereotypes in boys and girls. This activity was linked to a social situation of reference (i.e. a choreographic sequence using skipping ropes is performed every year by students), by way of a final Flash mob performance by the students in the school playground. TARGET areas were applied as follow:

- **Task area**: throughout the unit, the teacher implemented a large variety of corporal expression activities and variants based on the initial evaluation (i.e. corporal expression activities with individual rope, long rope and double rope were selected, based on the teaching objectives proposed, progressively increasing in complexity). Likewise, the students had the opportunity to create steps in order to design a choreographic sequence using skipping ropes.

- **Authority area**: the curricular materials enabled pupils to independently carry out the activities proposed, setting their own learning pace and evaluating their progression with respect to the steps suggested. Students were allowed to get
involved in their own learning, progressively giving them autonomy in decision-
making and responsibility in their unit (i.e. they could choose aspects such as
music, clothes, spatial location, the different steps, links, etc., for the
choreographic performance).

- Recognition area: continuous positive and cognitive-interrogative feedback was
given in all sessions, both as individuals and as a group, associating the
attitudinal terrain (e.g. "You are making a great effort, great progression is
noticed"), the conceptual terrain (e.g. "Who sets the rhythm in the long rope
jumping?"), and procedural terrain (e.g. "You are adapting the way you turn the
rope very well, observing your companion. I congratulate you"). Comparison
among students was avoided at all times.

- Grouping area: the teacher allowed pupils to form heterogeneous groups to promote
their social interaction and integration. The teacher also mediated in different
conflicts, adopting an attitude of empathy and listening, trying to evaluate his or
her students’ contributions (e.g. "The comment that your classmate has made is
very interesting")

- Evaluation area: pupils were able to choose the weighting of their own
evaluation, based on ranges established by the teacher (e.g. "What percentage do
you want to give to the choreographic sequence? The score can account for 20%
to 35% of the final mark"). The curricular material given out throughout the unit
and in the choreographic sequence allowed students to assess themselves (i.e. self-reported) in the unit and also to co-assess their different classmates. Each student was evaluated individually in order to verify their progression, and provide specific and adapted information about the learning process.

- Time area: the teacher regulated the students’ learning pace at all times, developing reinforcement and extension activities. Likewise, the teacher also provided facilities as well as timeslots during break-time as well as in the afternoons to be able to set up the final choreographic sequence.

**Data analysis**

Kolmogorov-Smirnov’s normality test was performed, obtaining adequate values in all cases ($p > .05$), and then a confirmatory factor analysis was performed for the Situational Motivation Scale. Later on, internal consistency was calculated using the coefficient of Cronbach’s alpha, as well as descriptive statistics (mean and standard deviation) of each factor. A two-factor (group x gender) multivariate analysis of variance (MANOVA) was performed to evaluate the impact of the intervention programme on the different study variables, in both the control group and experimental group. The effect of gender was also evaluated to observe the differences between the boys and girls in both groups – control and experimental - in the different study variables, following the intervention programme. The effect size was also calculated using the Partial Eta Squared statistic ($\eta^2_p$), which provided an insight into the magnitude of the differences found, as the
influence of the sample size was eliminated. Finally, a 95% confidence interval was calculated for the differences. The SPSS 21.0 statistics software was used to carry out all of these analyses.

Results

The results of the MANOVA showed a main significant effect with regard to the group (control and experimental) with a high effect size (Wilks’ Lambda = .787; F (11, 212) = 5.209; p < .001; η²_p = .213).

In Table 1 we can see that the experimental group presented significantly higher values in perceived task-oriented motivational climate (p < .001), autonomy (p = .027), competence (p < .001), intrinsic motivation (p < .001), identified regulation (p = .005) and enjoyment (p < .001), as well as significantly lower values in ego-oriented climate ego (p < .001) after the intervention programme.

‘INSERT TABLE 1 ABOUT HERE’

Table 2 presents the intervention results of both boys and girls. There is a significant effect of the intervention (i.e. control group vs. experimental group) in the male gender (Wilks’ Lambda = .850; F (11, 210) = 3.359; p < .001; η²_p = .150). In this sense, the boys from the experimental group presented significantly higher values in perceived task-oriented climate (p < .001), autonomy (p = .011), competence (p < .001), intrinsic
motivation ($p < .001$), identified regulation ($p < .001$), and enjoyment ($p = .003$), as well as significantly lower values in the ego-oriented climate ($p < .001$) with respect to the boys from the control group. With reference to the girls, there is also a significant effect of the intervention (i.e. control group vs. experimental group; Wilks’ Lambda = .876; $F(11, 210) = 2.690; p = .003; \eta^2_p = .124$). The girls from the experimental group presented significantly higher values in perceived task-oriented climate ($p = .002$), intrinsic motivation ($p = .028$) and enjoyment ($p = .006$), as well as significantly lower values in ego-oriented climate ($p < .001$) with respect to the girls from the control group.

‘INSERT TABLE 2 ABOUT HERE’

Discussion

The first objective of this study was to evaluate the impact of an intervention programme on a series of motivational variables integrated into SDT (Ryan and Deci, 2000) and AGT (Nicholls, 1989) in a corporal expression unit. To this end, the first hypothesis proposed that the strategies developed in the intervention programme would generate a greater task-oriented climate and consequently, greater self-determined regulation, greater satisfaction of the BPN and greater enjoyment in the experimental group. The results obtained confirm this hypothesis. Thus, the intervention programme proved to be effective in developing a
task-oriented motivational climate in this corporal expression unit, giving rise to greater satisfaction of the BPN of autonomy and competence, as well as greater intrinsic motivation and enjoyment. Likewise, the intervention represented a decrease in the ego-oriented motivational climate, so the strategies led to the students not perceiving that their progress was being comparatively evaluated with respect to their companions’ progress. Therefore, as suggested by Braithwaite et al. (2011), the specific motivational strategies for this corporal expression unit proved to be effective in generating a task-oriented climate because they fostered variety in the activities and personal challenge, they allowed students to make decisions and acquire responsibilities, they favoured private and significant teaching feedback, they made multiple group formats possible, they emphasised an evaluation that takes personal and individual progress into account, and they regulated the students’ learning pace.

These findings are in line with other results obtained following the development and implementation of the TARGET areas, established by Ames (1992), in a corporal expression content area (e.g. Sevil et al., 2014). Likewise, other intervention studies in different content areas (e.g. orienteering, basketball, handball) where the motivational climate was manipulated and specific teaching strategies were applied, have obtained significantly higher values in variables included in these two social cognitive theories (e.g. perceived task-oriented climate, competence, autonomy, identified regulation and enjoyment) (Almolda-Tomás et al., 2014; Gray et al., 2009; Hastie et al., 2014). In this
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study, no significant differences were found after the intervention programme in some BPN, such as relatedness. This may be due to the high values shown in the control group. In previous studies performed in PE contexts, the need for relatedness usually obtained higher values in students (Amado et al., 2014). However, emphasis should be placed on including specific teaching strategies that favour the support of this psychological mediator, given its effect on the more volitional profiles in boys and girls in PE classes (Ferriz et al., 2013; Shen et al., 2012). Therefore, greater levels of motivational variables at a situational level (i.e. content area) could influence those motivational variables at a contextual level (i.e. PE classes), resulting as a consequence in a higher level of adherence to out of school PA (González-Cutre et al., 2014a).

Likewise, whether gender could be an influential variable on the effectiveness of the intervention was analysed. Thus, the second hypothesis postulated that the effect of the intervention would be equally effective in boys and girls from the experimental group. The results indicated that this hypothesis is partially satisfied.

With regard to the effects of the intervention of this unit on the experimental group, significantly higher values were seen in boys and girls in perceived task-oriented climate, intrinsic motivation and enjoyment, and lower values in ego-oriented climate. Therefore, despite the social stereotypes of this type of corporal expression activity, the TARGET areas proved to be effective in manipulating the learning environment, achieving greater perceived task-oriented motivational climate and less perceived ego-
oriented climate in boys and girls. Likewise, the higher levels of intrinsic motivation and enjoyment in boys and girls suggest that these specific strategies have had an impact on autonomous motivation, obtaining positive outcomes in this corporal expression unit. This is especially relevant as some content areas, such as those associated with the corporal expression activity block, normally generate an attitude of rejection, lack of interest and amotivation among pupils (O’Neill et al., 2011). This occurs more often among boys, who show a greater preference for more competitive activities. Moreover, despite studies indicating that boys experience greater motivation in PE classes, the type of methodology and content area may condition this preconceived idea (Mitchell et al., 2013). Therefore, the effectiveness of the intervention programme provides PE professionals with the necessary methodological guidelines to be able to implement corporal expression oriented activities.

Similarly, with respect to the boys, significantly higher values were observed in the experimental group in other study variables, such as the BPN of autonomy and competence, and identified regulation. However, the girls in the control group, probably due to their interests and preferences in this type of activity (Ruiz et al., 2010), experienced high levels of perceived competence and autonomy, and no significant differences were obtained with respect to the experimental group. In the same way, Harness (2001) showed that girls should be perceived as being competent in this activity due to social-cultural reasons, such as girls being mainly attributed to this type of
content area. On the contrary, the boys from the control group, given the expressive and cooperative nature of the content area, perceived lower levels of competence and autonomy. Moreover, the intervention proved to be more effective in the boys from the experimental group. These results are in line with the study by Murillo et al. (2014) where, in a corporal expression unit and with a comprehensive teaching methodology, the girls considered that they were more competent than the boys. Taken as a whole, findings highlight the importance of the teaching intervention in PE classes, especially in those units that contain certain social stereotypes and barriers to engagement with respect to either gender. Thus, the motivational strategies developed may contribute to more positive experiences in boys and girls, favouring greater adherence to PA (Aeltermann et al, 2014; Bennie and Langan, 2014).

In terms of practical implications, it seems necessary for the PE teacher to create a task-oriented climate for both boys and girls. Thus, motivational strategies must be a complement to TGM. These results support the need to carry out intervention studies, developing specific strategies in order to assess their effectiveness in boys and girls, both in perceived motivational climate and in other motivational variables related to PE. Thus, as indicated by Green and Glasgow (2006), if we want more evidence-based practice, we need more practice-based evidence.

Despite the effectiveness of the work, a series of limitations are raised as well as possibilities for future studies. In this study, even though the application of strategies
was controlled, there was no systematic recording of these strategies by the teacher, so
the implementation of observational methodology opens up a complementary line to
analyse perceived motivational climate in the classroom (see Julián et al., 2010). This
methodology may help to to assess the teaching behaviour generated in the intervention.
Another possible limitation of the study was that the control and experimental groups
had a different teacher. Furthermore, it would be helpful for future intervention studies
to compile baseline and follow-up measures to further our understanding of TARGET
interventions. Likewise, in future studies it seems advisable to implement intervention
programmes in other artistic expression content areas (e.g. dance, acrosport) and
invasion sports (e.g. football, basketball, hockey), to assess the effects produced in boys
and girls. The inclusion of other study variables included within these two social
cognitive theories (e.g. students' motivational orientation, support and thwarting of
BPN, predisposition towards PA, learning) or of the objective quantification of MVPA
to the gender, has hindered the comparison and discussion of the results obtained.
Therefore, the more studies that provide empirical evidence of the findings generated in
this intervention studies seem to be necessary.
Conclusions

The results indicate that, despite the social stereotypes and beliefs that may be associated with corporal expression activities, an intervention based on specific motivational teaching strategies, adapted to this content area, may represent greater perceived task-oriented climate, getting boys and girls to be more motivated and to enjoy this type of activity more. Likewise, the intervention programme is effective in boys and girls, even producing better results in some variables in the boys, who are usually less interested and have less motivation with respect to this type of activity. Thus, the results indicate the importance of creating a task-oriented climate in PE classes which will promote more positive experiences, favouring students’ development and encouraging more volitional behaviours. All of this may help overcome some of the barriers to engage in corporal expression activities in PE classes, especially in boys, resulting in possible greater adherence to PA.

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Table 1. Analysis of differences between the control group and the experimental group after the intervention programme.

<table>
<thead>
<tr>
<th>Study variables</th>
<th>Experimental group</th>
<th>Control group</th>
<th>Contrast between groups</th>
</tr>
</thead>
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<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
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<td>Task-oriented climate</td>
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<td>4.35</td>
</tr>
<tr>
<td>Ego-oriented climate</td>
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<td>4.36</td>
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Note: Diff = Difference; CI = Confidence interval; LL = Lower limit; UL = Upper Limit
Table 2. ANOVA per gender between the control group and the experimental group after the intervention programme.

<table>
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<tr>
<th>Study variables</th>
<th>Gender</th>
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<th>Control group</th>
<th>Mean Diff.</th>
<th>Standard error</th>
<th>F (11,210)</th>
<th>p</th>
<th>( \eta^2 )</th>
<th>95% CI differences</th>
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<td>SD</td>
<td>M</td>
<td>SD</td>
<td></td>
<td></td>
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Note: Diff = Difference; CI = Confidence interval; LL = Lower limit; UL = Upper Limit.
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