

Research article

Peers' influence on exercise enjoyment: A self-determination theory approach

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Abstract

The purpose of this research was to study the influence of motivational climate perceived in peers and basic psychological needs (competence, autonomy and relatedness) on self-determined motivation and enjoyment in exercise. A sample comprised of 394 non-competitive physical exercisers, 156 women and 238 men aged between 16 and 54 ($M = 21.64$, $SD = 7.18$), completed the Motivational Climate Perceived in Peers Scale, Scale of Motivational Mediators in Physical Activity, Behavioural Regulation in Exercise Questionnaire-2 and Physical Activity Enjoyment Scale. A correlation analysis between the variables studied, a confirmatory factor analysis (CFA) and structural equation analysis were performed. The results showed that the task-involving peer motivational climate positively predicted the three basic psychological needs (competence, autonomy and relatedness). In turn, meeting the needs for competence and relatedness positively predicted self-determined motivation, which also positively predicted the enjoyment the exercisers had during the activity. There were no significant associations between the ego-involving peer motivational climate and psychological needs. A multisample analysis indicated that the model was invariant across age and degree of exercise involvement. This study reiterates the importance of increasing exercisers' self-determined motivation in order to obtain more enjoyment and to be more committed to the exercise. Therefore, it is essential to foster perceptions of competence, autonomy and relatedness by means of a task-involving climate. The findings provide evidence for the importance of peer motivational climate in sports motivation.

Key words: Peer group, motivation, basic psychological needs, enjoyment.

Introduction

A large number of researchers (e.g. Sallis and Owen, 1999; Salmon, 2001) have confirmed the undeniable physical and psychological benefits of regular exercise, as it has an important impact on wellbeing and on the quality of life of those who exercise (McAuley and Rudolph, 1995) and it also fosters the acquisition of active lifestyles in the adult stage (Sallis and McKenzie, 1991). In line with these statements, there should be evidence of a gradual increase in participation in physical and sport activities. However, contrary to this logical statement, there is a downward trend in the enjoyment of such activities as life progresses (Owen and Bauman, 1992). As a result, it is especially important to find out about and understand motivational, cognitive and affective processes that determine the view of physical activity and sport as a valuable, pleasant and satisfying experience, since one of the

main reasons why people undertake to do physical activity is that they enjoy it (Ryan et al., 1997).

In this regard, the self-determination theory has been widely used in the sport field to determine the importance of motivation in cognitive, behavioural and affective patterns shown by the subjects, which is very useful for guaranteeing adherence to physical activity and sport. The self-determination theory (Deci and Ryan, 1980; 1985; 1991) is a general motivation and personality theory whose main idea consists of human behaviour being motivated by three primary and universal psychological needs: autonomy (this includes people's efforts to feel they originate their actions and can determine their own behaviour. It is a desire to feel an internal locus of causality), competence (this consists of controlling the result and experiencing efficiency) and relatedness (this refers to the effort made to relate to others and be concerned for them, as well as feeling accepted by others and experiencing satisfaction with the social world).

The satisfaction of the basic psychological needs is going to be related with the motivation felt by the subjects. One of the subtheories of the self-determination theory, the organismic integration theory (Deci and Ryan, 1985), suggests different types of motivation along a continuum, depending on the level of self-determination. Therefore, different types of motivation have been described from less self-determined to more self-determined: amotivation, extrinsic motivation and intrinsic motivation. An amotivated subject is one that has no intention of doing anything, characterised by having no motivation. Extrinsic motivation is broken down into several forms of regulation. The least self-determined is external regulation, which reflects action motivated by external rewards for the person. Next is introjected regulation, in which action is motivated by the individual avoiding his own feelings of guilt. The following form of regulation, part of extrinsic motivation, is identified regulation, in which the subject thinks the activity performed is important. Lastly, in integrated regulation several identifications are assimilated and organised significantly and hierarchically, although the subject still does not participate because of inherent pleasure in the activity. The most self-determined form of motivation is intrinsic motivation, in which action is motivated by the pleasure and enjoyment generated by the activity itself.

In this respect, when the sportsperson satisfies his needs for competence, autonomy and relatedness, his self-determined motivation will rise. On the contrary, if these needs are not satisfied, this will lead to less self-determined forms of motivation (Vallerand and Rousseau, 2001).

Different studies in the physical activity and sport area have analysed the relationships between motivation and enjoyment from the perspective of the self-determination theory. Vlachopoulos et al. (2000), with a sample comprised of adult sportspeople with different levels, discovered that the profile with high scores in both self-determined motivation and non-self-determined motivation showed more enjoyment than the profile that only scored high in self-determined motivation. In physical education classes, Ntoumanis (2002) discovered a positive association between enjoyment and the most self-determined forms of motivation and cluster analysis showed that the most self-determined profile showed more enjoyment. Along the same lines, Standage et al. (2005), in another study on physical education classes, showed that satisfying the three basic psychological needs positively predicted intrinsic motivation and introjected regulation and negatively predicted external regulation and amotivation. In addition, intrinsic motivation positively predicted a positive affect and negatively predicted unhappiness, whilst amotivation positively predicted unhappiness. Vlachopoulos and Karageorghis (2005), in a study with exercisers aged between 18 and 64, discovered that the coexistence of high levels of intrinsic motivation and identified regulation were related to more enjoyment of physical exercise.

According to Vallerand (2001), there are different social aspects within the physical activity environment that can determine the type of motivation felt by exercisers and, consequently, their enjoyment of sport and exercise. Analysing and determining the social context in which the subject is immersed is, therefore, essential. In this respect, the achievement goal theory (Nicholls, 1989) is very closely linked to the self-determination theory. This theory establishes the concept of motivational climate (Ames, 1984, 1992; Ames and Archer, 1988) to designate the different environments that create the "significant others" (parents, teachers, trainers, etc.) in the achievement environments. Therefore, according to Ames (1992), these "significant subjects" can generate two types of motivational climates, which will have an influence on the individual's motivation: task-involving motivational climate (it promotes effort and highlights the task domain and personal improvement) and the ego-involving motivational climate (it encourages social comparison and emphasises normative ability).

Different studies in the sport field have determined that the task-involving motivational climate satisfies the needs for competence, autonomy and relatedness and develops self-determined motivation, whilst the ego-involving motivational climate seems to decrease the satisfaction of at least some of these needs, thus developing non-self-determined motivation (Ntoumanis and Biddle, 1999; Reinboth and Duda, 2006; Sarrazin et al., 2002).

The majority of the research carried out in connection with the study of the influence of environmental factors in the motivation of subjects has been mainly centred on the climate conveyed by parents, teachers, trainers or sport heroes. However, recent studies (Ntoumanis and Vazou, 2005; Vazou et al., 2005; 2006) tackle the influence the peer group can have on the climate per-

ceived by individuals in exercise and sport contexts. Daily contact with the group of friends can have an influence on motivation and on the sensations of enjoyment felt by sportspeople whilst they are exercising (Wentzel, 1999). Vazou et al. (2006) showed that the motivational climate conveyed by both the trainer and the peers in the sports group had an influence on enjoyment. These authors highlight the need to take peers' motivational climate into account when analysing motivational processes in the area of physical activity and sport.

Nevertheless, there has not been much research on the influence that peers have on people's motivation in exercise and sport environments and it is very limited at the moment. The discoveries made in this area have shown that subjects' perception of their sport competence is strongly related to the idea of being valued and accepted by the group (Weiss and Duncan, 1992). The perception of a task climate in the sports group is probably associated with more perceived competence by its members, since they judge their competence using self-referenced criteria, which are more controllable and easier to achieve compared with normative criteria. Furthermore, in a task climate there is a possibility of choice and participation in decision-making, which makes the sports-person feel more autonomous (Vazou et al., 2005). Research also showed that those sportspeople that have believed they were respected within the peer group have shown high affective feelings related to performance (Duncan, 1993). It is only logical to assume that better group relatedness develops in a task climate, which encourages cooperation among peers and avoids comparison, than in an ego climate (Vazou et al., 2005).

So far studies on peer climate have focused on competitive sport, overlooking its possible influence in non-competitive physical exercise contexts. Analysing peer climate in physical exercise will provide more extensive information on the different agents that are involved in motivation and enjoyment, with the aim of encouraging active and healthy lifestyles. As a result, in order to extend the line of research in connection with the influence the climate generated by the peer group has on subjects' motivation, this research aims to determine how the motivational climate of peers and basic psychological needs predict self-determined motivation and, consequently, enjoyment of the activity, with a study sample comprised of non-competitive exercisers. Based on the theoretical contributions reviewed, it was hypothesised that the task-involving motivational climate will positively predict satisfaction of the three basic psychological needs (competence, autonomy and relatedness), whilst the ego-involving motivational climate will predict it negatively. The needs for competence, autonomy and relatedness will positively predict self-determined motivation and this, in turn, will positively predict the enjoyment of the activity.

Methods

Subjects

The sample was comprised of 394 non-competitive exercisers (swimming, bodybuilding, aerobics, indoor cycling, etc) from 30 sports centres in the province of Alicante (Spain), 156 women and 238 men aged between 16 and

54 ($M = 21.64$, $SD = 7.18$). From the entire sample, 50 exercised occasionally, 158 exercised two or three days a week and 186 more than three days a week.

Instruments

Motivational Climate Perceived in Peers Scale (whose acronym is CMI in Spanish): The scale created by Moreno et al. (2006) was used to measure the motivational climate perceived in peers in physical activity and sport. The instrument had nine items, based on the questionnaire by Ntoumanis and Vazou (2005), preceded by the phrase “In the group with which I exercise, my companions...”, of which four items measured the ego climate (e.g. “People compare themselves with others”, “They want to be the best in the group”) and five items measured the task climate (e.g. “They feel free to express their opinions”, “They encourage their companions not to give up”). The replies were collected on a Likert-type scale, whose score ranges fluctuated between 5 (*always*) and 1 (*never*). The reliability analysis showed an alpha of .70 for the task climate factor and of .74 for the ego climate factor.

Scale of Motivational Mediators in Physical Activity (whose acronym is EMMAF in Spanish): The adaptation to the non-competitive exercise context of the questionnaire created by González-Cutre et al. (2007) was used to measure the satisfaction of basic psychological needs. The instrument was formed by 23 items preceded by the phrase: “Your impression of the exercise and sport you do is that...”, of which eight items measured relatedness (e.g. “I feel good with the people I exercise with”, “I feel integrated with the people I exercise with”), eight items measured autonomy (e.g. “Sometimes I work without the aid of the monitor”, “I can decide the intensity I do the exercise at”) and the seven remaining items measured perceived competence (e.g. “I rely on my physical strength”, “I am good at nearly all sports”). The responses were collected in a 5-point Likert-type scale where 1 corresponded to *totally disagree* and 5 to *totally agree*. The reliability of this scale was .88 for the relatedness factor, .79 for the autonomy factor and .78 for the competence factor.

Behavioural Regulation in Exercise Questionnaire-2 (BREQ-2): The translation into Spanish (Moreno et al., 2007) of the Behavioural Regulation in Exercise Questionnaire-2 by Markland and Tobin (2004) was used. This questionnaire has 19 items, which were headed with the sentence “I exercise...”, measuring the self-determination continuum stages grouped into five factors (amotivation, external, introjected, identified and intrinsic regulation). The items were answered using a Likert-type scale from 0 (*not true for me*) to 4 (*very true for me*). In order to assess self-determined motivation, the self-determination index (SDI), whose validity and reliability has been confirmed by different prior studies (Ingledeew et al., 2004; Markland and Ingledeew, 2007), was used. This index was calculated with the following formula: $(2 \times \text{Intrinsic Regulation} + \text{Identified Regulation}) - ((\text{Introjected Regulation} + \text{Exter-$

$\text{nal Regulation}) / 2 + 2 \times \text{Amotivation}$) (Vallerand and Rousseau, 2001). In this study, the SDI fluctuated between - 8.92 and 12. The reliability obtained from each of the factors (intrinsic regulation, identified regulation, introjected regulation, external regulation and amotivation) was .81, .64, .66, .71 and .73, respectively. Only the identified regulation and introjected regulation factors showed a Cronbach alpha below the recommended level (.70) according to Nunnally (1978). Given the small number of items forming both factors, their internal validity was acceptable (Hair et al., 1998; Nunnally and Bernstein, 1994).

Physical Activity Enjoyment Scale (PACES): The version translated into Spanish by Moreno, González-Cutre et al. (2006) of the Physical Activity Enjoyment Scale by Motl et al. (2001) was used to measure enjoyment in physical activity. This scale was formed by 16 items, preceded by the phrase “When I am active...”, which assessed enjoyment directly (e.g. “I enjoy it”, “It is very exciting”) and reversely (e.g. “I feel bored”, “I dislike it”). The responses were collected on a Likert-type scale whose score ranges fluctuated between 1 (*totally disagree*) to 5 (*totally agree*). The scale obtained an alpha value of .89.

Procedure

Different sports centres were contacted to ask them for their collaboration in the study. The parents/guardians of the minors in the study sample were informed of the research objective and they were asked for authorisation for their children or wards to be able to participate in the research. Next, the questionnaires were handed out under the supervision of the main researcher, so that any questions that may have arisen in understanding both the items in the questionnaires and the instructions established at the beginning of the filling-in session could be answered. The approximate time for completing the questionnaires was 20 minutes. Participation was voluntary and all ethical procedures for data collection were respected.

Data analysis

Firstly, a correlation analysis was performed between the motivational climate perceived in peers, basic psychological needs, self-determined motivation and enjoyment to determine the connection between the variables studied. Secondly, a confirmatory factor analysis (measurement model) was performed in order to confirm the factor structure of the scales used in the study, as well as test the validity of the factors sharing a common method, which tends to increase the correlations between the variables measured by the constructs (Perugini and Conner, 2000). Lastly, the structural equation model proposed was analysed with the aim of testing the structural model and the measurement model at the same time. This allowed us to focus on the conceptual correlations between the latent factors and the measurement variables. Also, the model was tested for equality of constraints across age (the median was used to establish two age groups) and practice days using multisample analysis.

Table 1. Mean, standard deviations and correlations among variables.

	M	SD	Ego Climate	Task Climate	Autonomy	Competence	Relatedness	SDI	Enjoyment
Ego Climate	3.23	.86	-	-.12*	.02	.05	-.17**	-.10*	-.05
Task Climate	4.09	.58	-	-	.25**	.24**	.52**	.24**	.22*
Autonomy	3.58	.70	-	-	-	.33**	.34**	.22**	.21**
Competence	3.89	.66	-	-	-	-	.39**	.34**	.35**
Relatedness	4.28	.67	-	-	-	-	-	.34**	.31**
SDI	7.68	3.77	-	-	-	-	-	-	.56**
Enjoyment	4.36	.62	-	-	-	-	-	-	-

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

Results

Table 1 presents the descriptive statistics, means and standard deviations and the correlations obtained between the motivational climate perceived in peers, basic psychological needs, the self-determination index and the enjoyment shown whilst doing exercise and sport. The data showed a higher score in the perception of a task-involving motivational climate ($M = 4.09$) than in the perception of an ego-involving motivational climate ($M = 3.23$). There was also a higher score in satisfaction of the need for relatedness ($M = 4.28$) than in competence ($M = 3.89$) and autonomy ($M = 3.58$). The mean scores in the SDI and in enjoyment were $M = 7.68$ and $M = 4.36$, respectively.

In the correlation analysis it can be observed that the task-involving motivational climate is positively and significantly related with the needs for autonomy ($r = .25$, $p < .01$), competence ($r = .24$, $p < .01$) and relatedness ($r = .52$, $p < .01$), whilst the ego-involving motivational climate was negatively related with the need for relatedness ($r = -.17$, $p < .01$). Moreover, the needs for autonomy, competence and relatedness are positively related with the SDI ($r = .22$, $p < .01$; $r = .34$, $p < .01$; $r = .34$, $p < .01$, respectively), and the SDI was positively and significantly related with enjoyment of the physical activity ($r = .56$, $p < .01$).

Measurement model analysis

In order to perform the measurement model analysis and test the Structural Equation Modeling (SEM), one of the aspects taken into account was to decrease the number of indicators of latent factors because the size of the sample is not particularly large compared with the large number of variables forming the model (Marsh et al., 1994; Ntoumanis, 2001; Sarrazin et al., 2002). Therefore, one of the first steps that were followed to keep some reasonable degrees of freedom consisted of grouping the items of each construct randomly into two parcels (Bagozzi and Heatherton, 1994; Bentler, 1980; Byrne, 1994; MacCallum and Austin, 2000). According to Marsh et al. (1994), this grouping of items is more reliable, it enables them to be distributed more normally and the proportion between the number of variables measured in the model and the number of subjects forming the study sample is reduced to half. In this way, for example, in the CMI

scale, the “ego-involving motivational climate” factor was formed by two parcels of two items, respectively, whilst the “task-involving motivational climate” factor was formed by two parcels of three and two items, respectively. Similarly, due to the division into two parcels of the items forming the BREQ-2 factors, two self-determination indexes were obtained. Therefore, once the items forming the latent factors of each one of the scales used in the two random parcels had been divided, a confirmatory factor analysis (CFA) was performed, based on the 14 measurements observed and the seven latent constructs that correlate freely (Anderson and Gerbing, 1988) (Figure 1).

In order to check the validity of the measurement model, the Amos statistical programme version 6.0 was used and a series of goodness of fit coefficients or indexes. Based on contributions by different authors (Bentler, 1990; McDonald and Marsh, 1990; Mulaik et al., 1989), the goodness of fit coefficients or indexes which were used to assess the goodness of fit of the measurement model were: χ^2 , $\chi^2/\text{d.f.}$, RMSEA (Root Mean Square Error of Approximation), SRMR (Standardized Root Mean Square Residual) and the incremental indexes (CFI, NFI and TLI). These goodness of fit indexes are considered acceptable when $\chi^2/\text{d.f.}$ is less than 5 (Bentler, 1989), the incremental indexes (CFI, NFI and TLI) are over .90 and the error indexes (RMSEA and SRMR) are less than a .07 (Ntoumanis, 2001). Hu and Bentler (1999) raised the cutoff point to consider indexes increased to .95 acceptable. However, this rule has been criticised for being too restrictive (Marsh et al., 2004). As seen in Figure 1, the measurement model provides some suitable fit indexes: $\chi^2 (56, N = 394) = 125.96$, $p = .00$, $\chi^2/\text{d.f.} = 2.24$, CFI = .96, NFI = .94, TLI = .95, SRMR = .03, RMSEA = .05, and all the parameters are significant. Furthermore, the discriminatory validity of the model was examined, bearing in mind that the correlation between the latent variables, mitigated by the measurement error (± 2 times the measurement error), was less than 1. Therefore, the results obtained from the confirmatory factor analysis revealed that the measurement model measures reasonably well.

Analysis of the structural equation model

After the factor structure of the scales given out in the study had been assessed and confirmed, the results of the

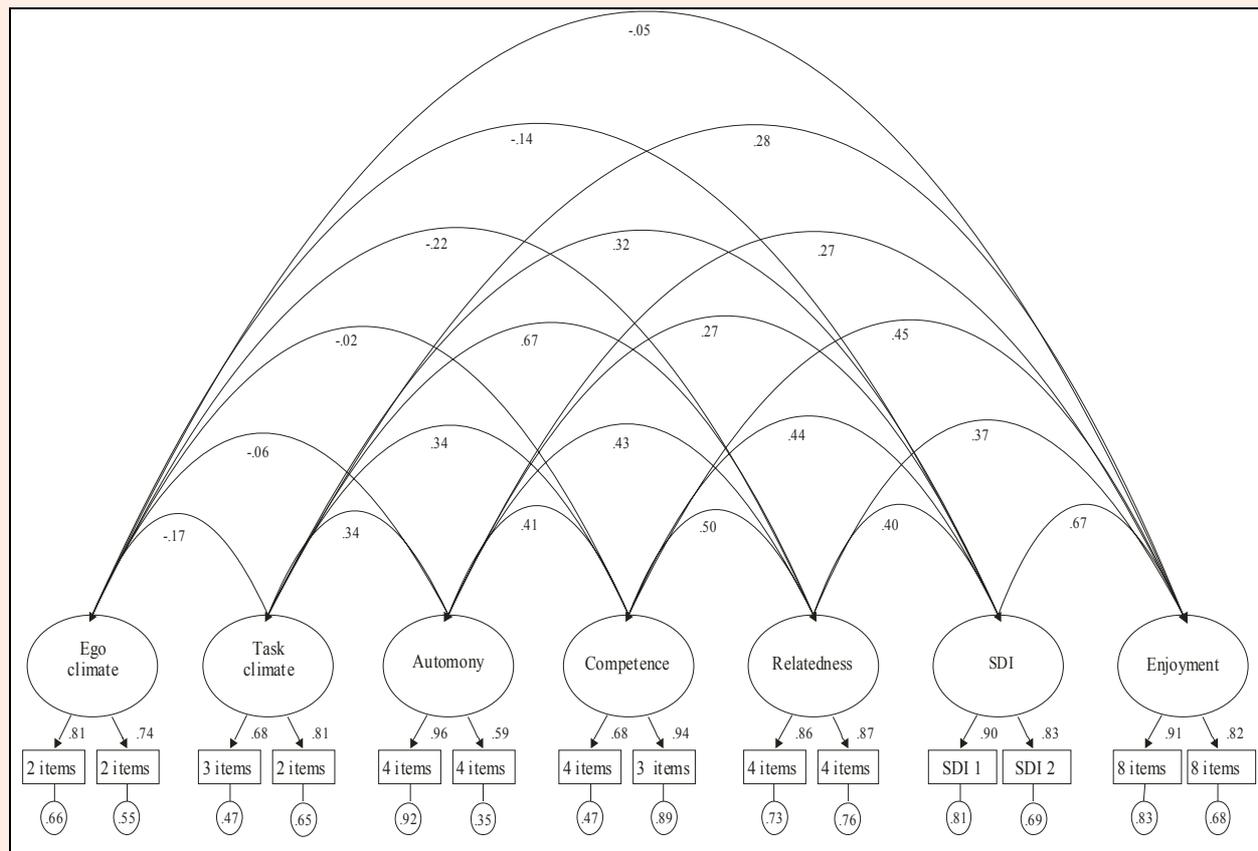


Figure 1. Measurement Model (CFA) of the structure of seven hypothesized factors. The circles represent the latent constructs and the squares represent the variables measured (random groups of items). All the parameters are standardized and significant in $p < .05$. The variances are shown in the small circles.

structural equation analysis were obtained, which are presented below. The content of the model proposed is about the hypothesized interactions that will exist between the perceptions of the motivational climate generated by peers, the basic psychological needs (competence, autonomy and relatedness), the self-determination index and enjoyment.

In order to check the goodness of fit or similarity of the theoretical model proposed with existing empirical data, the same goodness of fit indexes or coefficients were considered, as well as the same acceptance parameters of these indexes, explained in the analysis of the measurement model. The results of the structural equation model analysis (Figure 2) showed a negative association between ego and task motivational climates, since, as Duda (2001) maintained, both motivational climates are negatively and moderately related, suggesting that the two constructs can be perceived independently. Similarly, the perception of a task-involving motivational climate positively predicted the need for autonomy ($\beta = .37$), competence ($\beta = .50$) and relatedness ($\beta = .81$), whilst the perception of an ego-involving motivational climate did not predict any of these variables. Furthermore, the satisfaction of the needs for competence ($\beta = .32$) and relatedness ($\beta = .25$) positively predicted self-determined motivation, which in turn positively predicted enjoyment ($\beta = .68$). The indirect effects indicated that task climate had posi-

tive effects on enjoyment through SDI, competence and relatedness. Competence and relatedness also indirectly influenced enjoyment through SDI. The goodness of fit indexes obtained: χ^2 (69, $N = 394$) = 201.30, $p = .00$, $\chi^2/d.f. = 2.91$, CFI = .94, NFI = .91, TLI = .92, SRMR = .06, RMSEA = .07 are in line with established parameters, so the model can be considered as accepted. The multi-sample analysis showed that the model was invariant across age: $\chi^2 = 508.76$, $p = .00$, $\chi^2/d.f. = 3.22$, CFI = .91, NFI = .90, TLI = .91, SRMR = .06, RMSEA = .06, and practice days: $\chi^2 = 842.27$, $p = .00$, $\chi^2/d.f. = 3.41$, CFI = .90, NFI = .91, TLI = .89, SRMR = .06, RMSEA = .07.

Discussion

The purpose of the research was to determine how the motivational climate of peers and basic psychological needs predict self-determined motivation and, in turn, enjoyment in a sample comprised of non-competitive exercisers. The results showed, as hypothesised, that the task-involving peer motivational climate positively predicted the three basic psychological needs, competence, autonomy and relatedness. Furthermore, the needs for competence and relatedness positively predicted self-determined motivation. There is no significant association between self-determined motivation and the satisfaction of the need for autonomy, a result that could be due to the

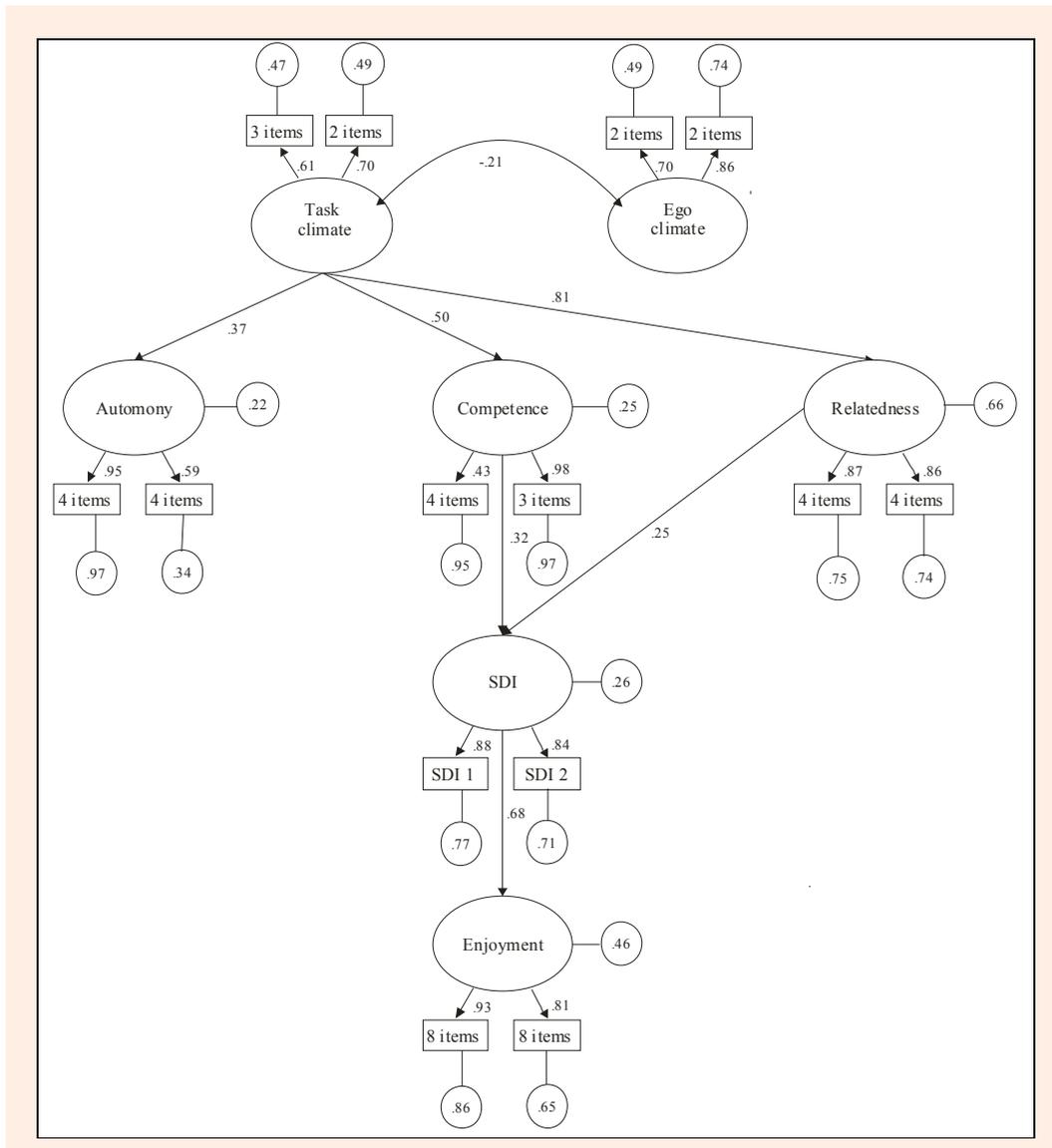


Figure 2. Structural Equation Model measuring the associations between the perception of the motivational climate of peers, basic psychological needs, the self-determination index and enjoyment. All the parameters are standardized and significant in $p < .05$. The variances are shown in the small circles.

fact that it is the psychological need with the lowest average score, which may indicate lack of autonomy during exercise (Ntoumanis, 2001). Finally, self-determined motivation positively predicted enjoyment of the activity. Contrary to our hypothesis, there were no significant associations between the ego-involving peer motivational climate and basic psychological needs. This model was invariant across age and degree of exercise involvement.

The results were in line with various prior studies (Ntoumanis and Biddle, 1999; Reinboth and Duda, 2006; Sarrazin et al., 2002), which discovered that the task-involving motivational climate satisfies the needs for competence, autonomy and relatedness and develops self-determined motivation. Nevertheless, these authors also show that the ego-involving motivational climate can decrease some of these needs, although this result was not corroborated in our research as there was no association between these variables. This datum may be due to the moderately low score obtained in the perception of the ego-involving motivational climate, which shows us that

the study sample's peer group based its acceptance criteria on aspects such as personal improvement, progress and task learning and, therefore, conveyed the key characteristics of a task-involving motivational climate. Although this study has concentrated on peer climate, previous ones have analysed the motivational climate perceived in the trainer, so there needs to be more research into the influence of this peer climate.

A climate in which peers place more emphasis on cooperation, effort and personal improvement (task climate) leads exercisers to feel they are more competent, since there are self-referenced criteria, which are far more controllable. Furthermore, in this type of climate, exercisers are more involved in the group's decisions, which increases their perception of autonomy. Relatedness also improves as there is a cooperative environment that avoids social comparison. Vazou et al. (2005) have already shown in a qualitative study in sport that support for relatedness, autonomy and competence seems to be important in a task-involving peer motivational climate.

The positive association found between self-determined motivation and enjoyment is in line with studies carried out in both physical education and sport environments. These studies showed more enjoyment in the more self-determined motivational profiles (Ntoumanis, 2002; Vlachopoulos et al., 2000) and a positive influence of intrinsic motivation on positive affect and a negative influence on unhappiness (Standage et al, 2005; Vlachopoulos and Karageorghis, 2005).

As a result of all the above, the data discovered in this study are in line with the hypotheses defended by both the self-determination theory and by the achievement goal theory, which highlight the importance of key environmental factors in the motivation felt by subjects whilst doing exercise and sport and adherence to sport programmes (Vallerand, 2007). Specifically, taking these results into account, it is important to analyse the motivational climate generated by the peer group in a context of exercise. Basic psychological needs, motivation and enjoyment, as well as adherence to exercise and sport programmes, are some of the variables that can be influenced by this climate. Prior research has already demonstrated the importance of peer climate in competitive sport, showing that the task climate was related to more enjoyment (Vazou et al., 2006).

In summary a task-involving peer motivational climate will make it easier to satisfy the three basic psychological needs. In this environment, the subject will feel intrinsically motivated by the activity and he will do it for the sensation of enjoyment and wellbeing it brings. Furthermore, knowledge of the peer group will enable parents, teachers and trainers to guide their actions to either strengthen the perceived climate (in the event that it is task-involving) or redirect it (in the event that it is ego-involving) and thus increase self-determined motivation and the positive sensations felt during exercise and sport. In this respect, future research must analyse the interaction of the different significant agents in conveying motivational climates (Vazou et al., 2006).

The main limitation of this study is the use of a correlational design, which does not enable causal relationships to be established. Nevertheless, it provides relevant information for designing intervention studies with the aim of improving motivation in exercise and encouraging people to do sport. In this respect, it would be interesting for future studies to analyse the influence of peer motivational climate on other relevant consequences for sport commitment, such as self-concept or flow.

Conclusion

This study reiterates the importance of increasing exercisers' self-determined motivation in order to obtain more enjoyment and to be more committed to the exercise. Therefore, it is essential to foster perceptions of competence, autonomy and relatedness by means of a task-involving climate. The findings provide evidence for the importance of peer motivational climate in sports motivation. A climate in which peers place more emphasis on personal progress and effort will enable exercisers to enjoy the exercise sessions, as their basic psychological

needs will be met and they will attain self-determined motivation. Along these lines, future research should study the climate generated by the trainer and by the peer group and try to determine the prediction power each one has on the motivation felt by exercisers, which would allow us to gain more understanding of the attitudes, motivations and behaviours adopted by the population in an exercise and sport context. Similarly, so as to correct the limitations of this research, other investigations should cover the study of enjoyment in physical activity experimentally, to discover the reasons, from a cause-effect point of view, why exercisers enjoy the activity more and, therefore, commit to a regular exercise or sport programme, which leads to them adopting active and healthy lifestyles.

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Key points

- Task-involving peer motivational climate positively predicted the three basic psychological needs (competence, autonomy and relatedness). There were no significant associations between the ego-involving peer motivational climate and psychological needs.
- Needs for competence and relatedness positively predicted self-determined motivation.
- Self-determined motivation positively predicted enjoyment.

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