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Original Article

Impact of competitive games in physical education classes on emotional and psychological well-being

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Abstract:
The increasing prevalence of problems related to mental health and emotional well-being among children and young people underlines the importance of educational institutions, particularly Physical Education, to foster emotional well-being. Therefore, Physical Education is a suitable educational space for working on emotions. This research aims to investigate whether the introduction of competition in Physical Education games influences the emotional intensity of students. **Method**: The sample consisted of 46 people aged between 10 and 12 years (M = 10.87; SD = 0.75), of whom 26 were girls (57%) and 20 boys (43%). To carry out the study, the sample was divided into two groups, a control group and an experimental group, with which non-competitive and competitive games were played, respectively, in the area of Physical Education. The instruments used in the research were the GES-C questionnaire and an ad hoc sociodemographic questionnaire created specifically for this study. **Results:** The research showed that non-competitive games generated greater intensity in any of the 4 positive emotions evaluated, as well as with competitive games in the 5 negative emotions evaluated. In the same line, it was also evidenced that positive emotions are significantly more intense when winning and negative emotions are significantly more intense when losing during the practice of competitive games. **Conclusions**: Competitive games favor emotional development differently from non-competitive games. Therefore, neither type of game should be eliminated from educational practice. That is why Physical Education teachers must make a selection of the games to be used during their classes, competitive or non-competitive, based on the previously established educational objectives.
Key Words: **Education, emotions, games, competition, emotional education**

Introduction

The concept of emotion has been described by different authors, being an abstract and complex concept to delimit. However, Bisquerra (2006) elaborated a definition that allows a simple understanding of the concept of emotion: "A complex state of the organism characterized by an excitation or disturbance that predisposes to an organized response. Emotions are usually generated in response to an external or internal event" (p.61).
In addition to this, this same author also explains the process of emotional experience, an important aspect to understand how emotions act in people (Bisquerra, 2006). To experience an emotion, first of all, there must be an event or occurrence that acts on a personal objective. This event will be evaluated instantly by the person, determining whether it is negative or positive, as well as clarifying ways and resources to cope with it. Subsequently, a series of physiological changes are produced as a result of this evaluation, which may lead to the expression of the emotion being experienced. Finally, a predisposition for action is produced, so that the event is confronted.

On the other hand, emotions can be classified as positive or negative (Bisquerra, 2006). Positive emotions are those that cause pleasure and well-being to the subject, as a result of a favorable evaluation of the achievement of a goal. Negative emotions are annoying and are not pleasant. They arise due to a negative evaluation in relation to the achievement of a goal, in the face of a threat or a loss. In his classification, Bisquerra (2006) includes as positive emotions: joy, humor, love and happiness. On the contrary, in terms of negative emotions he includes: anger, fear, anxiety, sadness, shame and aversion.

The current Spanish education system, as well as the educational projects developed in schools, have as one of their main objectives the integral development of pupils. This development must include work on emotional education. However, school models based on the transmission and acquisition of academic content

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continue to predominate (Granados & Sánchez, 2020). Emotional education is essential to provide a comprehensive development of students and educational practices should be carried out in which students are educated in the management of emotions (Granados & Sánchez, 2020).

In order to efficiently address emotional education in schools, the state of mental health of the child and youth population must be analysed. According to the World Health Organisation (WHO, 2004), mental health is "a state of well-being in which the individual is aware of his or her own abilities, can cope with the normal pressures of life, can work productively and fruitfully, and is able to make a contribution to society". This same institution published the report "Adolescent Mental Health" (2021), which shows that one in seven children and adolescents between 10-19 years of age worldwide suffers from some type of mental disorder, with depression, anxiety and behavioural disorders being the most frequent. Furthermore, the population in this age group that suffers from any of these disorders may be more exposed to situations of social exclusion, discrimination, educational problems and physical health problems, among other complications. It should also be noted that in Spain, as well as in Bulgaria, there is no speciality in Child and Adolescent Psychiatry, a speciality available in the rest of the European Union countries (González et al., 2019).

It should be noted that this situation worsened due to the pandemic caused by COVID-19 and the measures adopted by governments to contain and eradicate the virus, such as home confinement. The implication of these measures on mental health, emotional well-being or moods, are one of the main post-pandemic consequences on the population, regardless of their age range (Buitrago et al., 2021, 2022; World Health Organization, 2022b).

In view of these circumstances, the WHO (2021) emphasises the acquisition and maintenance of certain habits to prevent these pathologies, such as regular physical activity (PA) and facing situations in which problems must be solved and learning to manage emotions. For this reason, the area of Physical Education (PE) is a subject of great importance within the school environment for working on mental health and the acquisition of emotional competence, understood as the skills and knowledge that help students to acquire awareness, understand, express and correctly regulate social phenomena (Martínez, 2019). This competence is grouped into five dimensions: emotional awareness, emotional regulation, personal autonomy, interpersonal intelligence and life skills and well-being (Bisquerra and Hernández, 2017; Martínez, 2019).

The adequate development of this competence will help children and young people to identify emotions and become aware of them, in addition to allowing them to regulate their own emotions and those of others (Schoeps et al., 2019). Consequently, working on emotional competence during childhood will have positive repercussions in adolescence, favouring the personal and social well-being of students (Simeón-Aguirre et al., 2021). Along the same lines, numerous studies (Jiménez, 2022; Leo, et al., 2019; Macaya et al., 2018; Millán-Franco et al., 2021) show that people with a higher level of emotional competence tend to have better mental health and present fewer symptoms of depression, anxiety, stress and other similar emotional symptoms that determine people's mental health and well-being.

According to data from WHO (2022) in "*Global status report on physical activity in 2022*", 81% of adolescents worldwide did not achieve the recommended level of PA. At school level, according to the study conducted by the Spanish Agency for Food Safety and Nutrition (AESAN, 2020) 25% of girls and 23% of boys are considered sedentary and have a prevalence of overweight of 23.3% and obesity of 17.3% respectively. These data reflect the need to promote regular PA practice in schools, one of the fundamental objectives of PE. To achieve this, students' emotions must be addressed, given that motivation will be a determining factor for regular PA practice (Trigueros-Ramos et al., 2019; Vaquero-Solís et al., 2020).

Along these lines, several studies (Alemany et al., 2021; Baños et al., 2019; Muñoz et al., 2019; Tárrega et al., 2018; Trigueros-Ramos et al., 2019) affirm that satisfaction and enjoyment in the practice of PA, and specifically in PE classes, are the main reasons that allow students to develop a self-determined motivation towards the practice of PA or towards their intention to practice it in the future.

In this context and based on the concept of cognitive flexibility developed by Çar (2023) and the concept of emotion, the importance of the development of emotional intelligence in education arises. Emotional intelligence is defined as the individual's ability to observe his or her own or other people's emotions, to be able to make distinctions as a result of these behaviors and to guide his or her thoughts and behaviors (Salovey & Mayer, 1990). Emotional intelligence will provide students with the ability not only to make a good identification of emotions but also to collaborate with other social skills such as empathy, emotional self-control, to be able to give an adjusted response to what the students experience, as well as the development of different social skills (Çar et al., 2023; Goleman, 1995).

Likewise, the practice of PA is related to the emotional intelligence and mental health of people, contributing to the strengthening of positive emotions and the management of negative emotions. Through the practice of PA, the body secretes hormones that make us feel better, happier, in good spirits and help our well-being (Sáenz-López, 2019). Exercising also contributes positively to the management of negative emotions, helping to control anger, reducing the excitement caused by anger and contributes to reducing stress (Sáenz-López, 2019). On the other hand, people who perform PA regularly show better emotional intelligence, obtaining higher levels in the dimensions that comprise it (Angarita-Ortiz et al., 2020; Galdón et al., 2021).

Within the school environment, PE and the use of games as an educational resource are ideal elements for the emotional development and promotion of students' mental health. Kliziene et al., (2021) showed that, with proper planning of PE teaching, students' anxiety decreases and their well-being increases. The PE class, due to its characteristics that differentiate it from other areas, is an ideal context for the development of emotional competences, the improvement of mental health and the manifestation of emotional intelligence (Crispín, 2019; Arufe et al., 2021).

Therefore, the aim of this research was to analyse whether the competitive factor in games in PE classes has an effect on the emotional experience of students. The hypothesis of the study was that introducing the competitive factor in PE games in Primary Education causes students to experience negative emotions with greater intensity compared to non-competitive games, which generate more intensity in positive emotions.

Materials and methods

Study design

A quasi-experimental design was used with two pre-established groups, one control and one experimental. The intervention was carried out in the PE classes through a learning situation lasting six sessions. Both worked on the same specific motor skills, but the control group played non-competitive games and the experimental group played competitive games (Hernández et al., 2014; McMillan & Schumacher, 2005).

Participants

The sample was non-probabilistic (Hernández et al., 2014), from a primary school in Cantabria (Spain) of 5th and 6th grade students. The sample size was 46 students aged 10-12 years (M = 10.87; SD = 0.75), 26 girls (57%) and 20 boys (43%). The choice of the control group and the experimental group was random, with Year 5 pupils being the experimental group (n = 22) and Year 6 pupils the control group (n = 24). The participation of the students was voluntary and their parents or legal guardians signed an informed consent form before the start of the study.

Tools and process

The Games and Emotions Scale for Children questionnaire (Alcaraz-Muñoz et al., 2022), an adaptation for children of the Games and Emotions Scale questionnaire (Lavega-Burgués et al., 2018), was used. In the first part, information is collected on the intensity with which positive emotions (joy, humour, happiness and affection) and negative emotions (rejection, anger, shame, fear and sadness) are experienced after playing a game. This was done on a Likert scale of 1 to 5 points. Secondly, they indicated which emotion they had experienced most intensely and explained why. In addition, they had to draw the part of the game that most caught the participant's attention. To begin with, a test questionnaire was explained and carried out in the first session to familiarise the students with the questionnaire. Subsequently, the questionnaires were given to the students after the completion of each of the games that made up the basketball learning situation.

The 3x2 Questionnaire (Méndez-Giménez et al., 2014) was also used to study students' achievement goals. They should mark the degree of agreement with each item through a Likert scale between 1 (not at all true for me) and 5 (totally true for me). These items are classified into six types of achievement goals based on the crossing of three criteria for defining a competence (task, self and other) and the two ways in which the competence can be assessed (approximation-avoidance). This questionnaire was administered at the beginning of the learning situation. It was tested for internal consistency using Cronbach's Alpha test and the results were good ($\alpha = 0.86$).

Finally, an ad hoc socio-demographic questionnaire completed by the families or legal guardians was used.

Statistical analysis

SPSS v.26 statistical software (IBM Corporation, New York, NY, USA) was used to perform the statistical analyses of the study. The Shapiro Wilk test was performed to determine the normality of the distribution of the sample data. To determine the existence of statistically significant differences, the Mann-Withney U test was performed for non-normally distributed samples ($p < 0.05$) and Student's t-test for normally distributed samples ($p > 0.05$).

Ethical aspects

This study has had a research protocol approved by the Ethics Committee of the University of Cantabria with the number 000103, complying with the ethical and deontological principles of the American Psychological Association (American Psychological Association, n.d.), and the ethical recommendations for educational research (Paz, 2018).

Results

A comparative analysis was conducted between the emotional intensity of positive and negative emotions elicited in the games. Significant differences were found between both types of emotions ($p < .001$), with positive emotions ($M = 3.17$, $SD = 0.73$, $p = .618$) being significantly more intense than negative emotions ($M = 1.16$, $SD = 0.20$, $p < .001$). Subsequently, the same comparative analysis was carried out, but looking at different variables. For this, the sample, mean and standard deviation were calculated. In addition, the Shapiro Wilk test was performed to see if the data conformed to normality ($p > 0.05$) (Table 1).

Table 1
Statistics of the intensity experienced in the positive and negative emotions with respect to the different variables to be analysed

			N	M	SD	Sig.
Type of game	With competition	Positive emotions	22	3.10	0.85	.521
		Negative emotions	22	1.11	0.18	.001
	No competition	Positive emotions	24	3.23	0.60	.430
		Negative emotions	24	1.09	0.21	<.001
Gender	Male	Positive emotions	20	3.31	0.77	.429
		Negative emotions	20	1.11	0.15	<.001
	Female	Positive emotions	26	3.06	0.69	.829
		Negative emotions	26	1.20	0.22	<.001
Predominant motor skills	Throw away	Positive emotions	46	3.40	1.02	.144
		Negative emotions	46	1.28	0.36	<.001
	Pass	Positive emotions	46	3.32	0.87	.314
		Negative emotions	46	1.12	0.25	<.001
	Throw	Positive emotions	46	3.16	0.88	.219
		Negative emotions	46	1.15	0.29	<.001
	Combination of MS	Positive emotions	46	3.04	0.83	.341
		Negative emotions	46	1.12	0.20	<.001
Predominant basic physical ability	Strength	Positive emotions	46	3.20	0.82	.803
		Negative emotions	46	1.16	0.29	<.001
	Endurance	Positive emotions	46	3.31	0.83	.355
		Negative emotions	46	1.18	0.30	<.001
	Speed	Positive emotions	46	3.06	0.80	.991
		Negative emotions	46	1.14	0.19	<.001

Note: The Shapiro Wilk test is significant ($p < 0.05$) in all factors related to negative emotions, so a non-parametric test should be performed on the negative emotion variables. For the rest, parametric tests will be performed. MS: motor skills.

In the game type variable, no significant differences ($p > 0.05$) were found between games with competition and games without competition. Positive emotions were rated higher in the non-competitive games ($M = 3.23$, $SD = 0.60$) than in the competitive games ($M = 3.10$, $SD = 0.85$). Meanwhile, negative emotions were more intense in games with competition ($M = 1.11$, $SD = 0.18$) compared to games without competition ($M = 1.09$, $SD = 0.21$).

We tested whether there are differences between each of the nine emotions analysed. In relation to the positive emotions, significant differences were found ($p = 0.023$) between the intensity of affect achieved in the competitive games ($M = 2.00$, $SD = 1.27$, $p < .001$) and that obtained in the non-competitive games ($M = 2.76$, $SD = 0.90$, $p = .059$). Joy was higher in competitive games ($M = 3.88$, $SD = 0.94$, $p = .025$) than in non-competitive games ($M = 3.69$, $SD = 0.64$, $p = .651$). The same is true for happiness, which was experienced more strongly in competitive games ($M = 3.62$, $SD = 0.83$, $p = .253$) compared to non-competitive games ($M = 3.51$, $SD = 0.69$, $p = .220$). In contrast, mood was recorded with higher scores in non-competitive games ($M = 2.98$, $SD = 0.81$, $p = .578$) than in competitive games ($M = 2.78$, $SD = 1.10$, $p = .451$) (Figure 1).

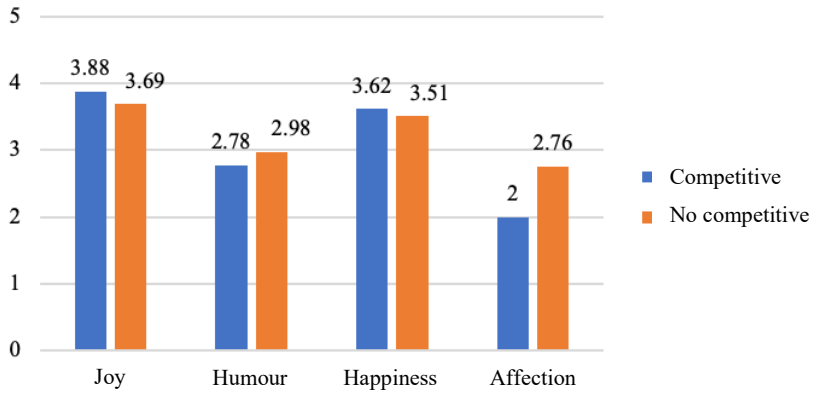

Figure 1
Comparison of the intensity of the four positive emotions in games with and without competition

Regarding negative emotions, significant differences (p = 0.018) were detected in anger, with greater intensity in competitive games (M = 1.41, SD = 0.42, p = .003) versus non-competitive games (M = 1.13, SD = 0.15, p < .001). Significant differences were also found in fear (p = .028), being more intense in non-competitive games (M = 1.24, SD = 0.39, p < .001) than in competitive games (M = 1.05, SD = 0.12, p < .001). For the emotion rejection, higher scores were found in non-competitive games (M = 1.22, SD = 0.26, p = .001), being slightly lower in competitive games (M = 1.19, SD = 0.26, p < .001). Shame was again experienced more strongly in non-competitive games (M = 1.10, SD = 0.26, p < .001) than in competitive games (M = 1.08, SD = 0.19, p < .001). Finally, sadness was also more intense in non-competitive games (M = 1.11, SD = 0.23, p < .001) compared to competitive games (M = 1.08, SD = 0.16, p < .001) (Figure 2).

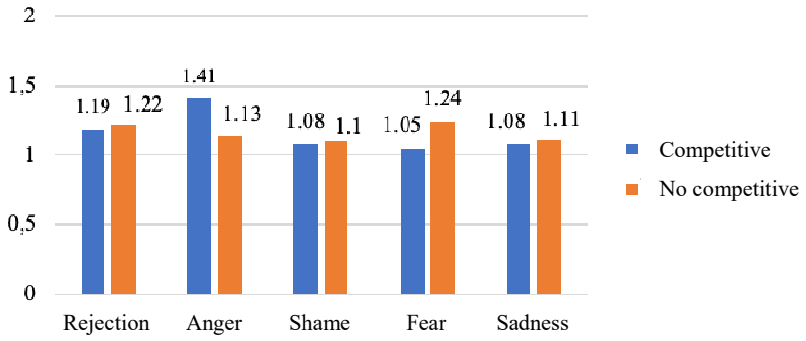

Figure 2
Comparison of the intensity of the five negative emotions in games with competition and games without competition

No significant differences (p > 0.05) were found between the emotional intensity of competitive and non-competitive factors. Non-competitive games produced a higher emotional intensity (M = 2.08, SD = 0.32) compared to non-competitive games (M = 2.03, SD = 0.33).

In this analysis according to game type, the intensity of negative and positive emotions in competitive games was studied as a function of winning and losing. Significant differences (p < .001) were observed in the scores of positive emotions, being higher when winning (M = 3.69, SD = 0.93, p < .001) than when losing (M = 2.68, SD = 1.24, p < .001). In the comparison of negative emotions, significant differences were also found (p < .001), being more intense when losing (M = 1.25, SD = 0.47, p < .001) than when winning (M = 1.05, SD = 0.15, p < .001).

With respect to gender, no significant differences (p > .05) were found between the intensity of positive and negative emotions of boys and girls. Positive emotions were more intense in boys (M = 3.31, SD = 0.77) than in girls (M = 3.06, SD = 0.69). On the other hand, negative emotions obtained higher scores in girls (M = 1.20, SD = 0.22), compared to the values obtained in boys (M = 1.11, SD = 0.15).

In relation to the predominant motor skill in the games, significant differences were found between the values of the negative emotions of the bouncing factor and those of the passing (p = 0.001), shooting (p = 0.005) and combination of motor skills (p = 0.007) factors. Positive emotions were manifested more intensely in the factor bouncing (M = 3.40, SD = 1.02), followed by the factors passing (M = 3.32, SD = 0.87), shooting (M = 3.16, SD = 0.88) and, finally, the factor combination of motor skills (M = 3.04, SD = 0.83). In relation to negative emotions, the highest values were detected in the factor bouncing (M = 1.28, SD = 0.36), followed by the factor throwing (M = 1.15, SD = 0.29) and the factors combination of motor skills (M = 1.12, SD = 0.20) and passing (M = 1.12, SD = 0.25) (Figure 3).

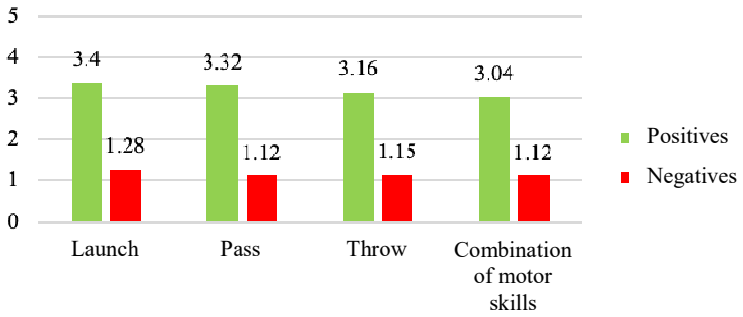

Figure 3
Comparison of the intensity of positive and negative emotions as a function of the predominant motor skill in the games

No significant differences ($p > 0.05$) were found in the basic physical ability variable predominant in the games. Positive emotions were more intense in games dominated by endurance (M = 3.31, SD = 0.83) compared to strength (M = 3.20, SD = 0.82) and speed (M = 3.06, SD = 0.80). For negative emotions, the highest values were found in games where endurance was predominant (M = 1.18, SD = 0.30), followed by those that worked more on strength (M = 1.16, SD = 0.29) and, finally, speed (M = 1.14, SD = 0.19) (Figure 4).

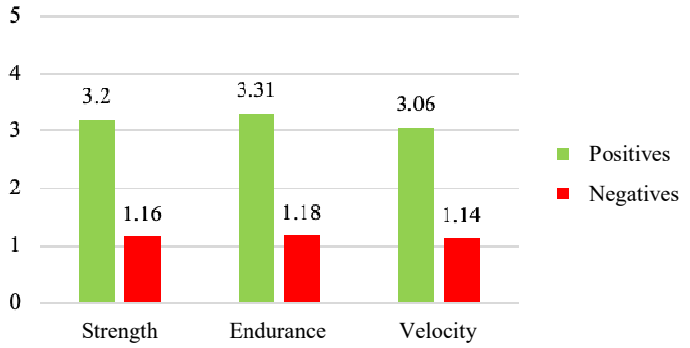

Figure 4

Comparison of the intensity of positive and negative emotions as a function of the predominant basic physical ability in the games

In addition, the results obtained on the 3x2 EF achievement goals questionnaire were compared with the students' emotional intensity. Positive emotions were more intense in those students who scored higher on the avoidance goals (M = 3.30, SD = 0.68, p = .916) than those whose highest values were recorded on the approach goals (M = 3.13, SD = 0.71, p = .501). Likewise, negative emotions were experienced more intensely by students with higher values on avoidance goals (M = 1.21, SD = 0.25, $p < .001$) compared to those with higher scores on approach goals (M = 1.12, SD = 0.13, $p < .001$). In none of the cases were significant differences detected ($p > .05$). Similarly, emotional experience was analysed in relation to achievement goals. There were no significant differences in these parameters ($p > 0.05$). Emotional intensity was higher in students with higher scores on avoidance goals (M = 2.15, SD = 0.32, p = .754) than those with higher scores on approach goals (M = 2.01, SD = 0.31, p = .386). Finally, the intensity of positive and negative emotions was investigated in relation to sociodemographic variables. In relation to whether the children are federated athletes or not, positive emotions were more intense in federated athletes (M = 3.17, SD = 0.66, p = .497) compared to non-federated athletes (M = 3.13, SD = 0.82, p = .947). Regarding negative emotions, non-federated students experienced them with greater intensity (M = 1.22, SD = 0.25, p = .002) than federated athletes (M = 1.14, SD = 0.16, $p < .001$). In none of the cases were significant differences found ($p > 0.05$). Similarly, an analysis of the sample's emotions was carried out in terms of the parents' PA habits. In relation to the amount of PA performed by the parents, positive emotions were more intense in the students who have a parent who exercises 3 to 5 times a week (M = 3.34, N = 0.71, p = .765), followed by the students who have a parent who exercises 6-7 times a week (M = 3.14, SD = 0.60, p = .384). The results for students with parents who do not do PA (M = 2.94, SD = 1.99) and students with a parent who does PA 1-2 times per week (M = 2.89, SD = 0.54, p = .815), were lower. Negative emotions had higher scores for students with a parent practicing PA 6-7 times per week (M = 1.23, SD = 0.14, p = .988), followed by parents who do not do PA (M = 1.21, SD = 0.25), and finally students with a parent practicing PA 6-7 times per week (M = 1.23, SD = 0.14, p = .988), followed by parents who do not do PA (M = 1.21, SD = 0.25, p = .815). 25), and finally students who have a parent who exercises 3-5 times per week (M = 1.17, SD = 0.23, $p < .001$) and those who exercise 1 or 2 times per week (M = 1.14, SD = 0.20, $p < .001$) (Figure 5). No significant differences were found between the different variables.

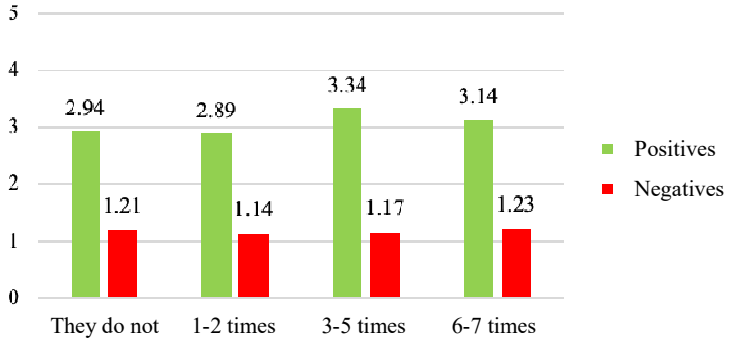

Figure 5

Comparison of the intensity of positive and negative emotions as a function of the amount of physical exercise practiced by their parents

The emotional experience of the students was also analysed according to the amount of PA performed by the parents. Significant differences (p = .032) were found between the emotional experience of students who have a parent who practices PA 3-5 times per week (M = 2.14, SD = 0.36, p = .213) and those who have a parent who practices PA 1-2 times per week (M = 1.93, SD = 0.20, p = .869). Students who have a parent who practices PA 6-7 times per week had the second highest values for emotional experience (M = 2.08, SD = 0.21, p = .541). Finally, the second lowest emotional experience scores were recorded by students whose parents do not do PA (M = 1.97, SD = 0.73).

Discussion

The main objective of the study was to observe whether competitive games in PE classes have an impact on the emotional intensity with which the games are experienced. The hypothesis put forward in this study was accepted. The non-competitive games showed a greater intensity of positive emotions and the competitive games a greater intensity of negative emotions. These results are similar to those obtained in previous studies (Alcaraz, 2021; Falcón, 2020; Duran & Costes, 2018; Alcaraz-Muñoz et al., 2020; Lavega et al., 2014).

In line with other research (Alcaraz, 2021; Alcaraz-Muñoz et al., 2020; Muñoz-Arroyave et al., 2020), all games recorded significantly higher intensities of positive emotions than negative emotions. This reflects that motor games are the best tool to work in PE classes and to generate adherence to healthy habits among students. On the other hand, the emotional intensity in the non-competitive games was slightly higher than that of the competitive games, results in line with the study carried out by Muñoz-Arroyave et al.

On the other hand, several studies (Alcaraz, 2021; Founaud & Santolaya, 2018) show that positive emotions are significantly more intense when winning and negative emotions are significantly more intense when losing, during the practice of competitive games. These results are similar to those obtained in this study. However, other studies did not obtain the same results (Duran et al 2014). In these studies, higher values were reflected in positive emotions after losing. Regarding the gender variable, boys experienced greater intensity in positive emotions, while girls experienced greater intensity in negative emotions. This supports some evidence (Gea et al., 2017), but does not agree with the results of other studies (Alcaraz, 2021; Lavega et al., 2014) that show different values in the intensities of the two types of emotions.

In relation to the predominant motor skill variable, positive and negative emotions were more intense in the games in which bouncing was used, with a greater emotional intensity than in the rest of the games. However, these games were played during the first session of the learning situation and this may have influenced the result. In the predominant basic physical ability variable, positive and negative emotions again registered higher values in the games in which endurance predominated, with higher emotional intensity in these games.

Méndez-Giménez et al. (2018) noted in their research that people with higher values in the approach goals had a greater capacity for emotional control. This may be related to the results obtained in this study, which show that emotional intensity is greater in students with higher values in avoidance goals. Thus, the intensity experienced in positive and negative emotions is higher in students who are more inclined towards avoidance goals. Méndez-Giménez et al. (2014) explains avoidance goals as follows: "Avoidance-based goals, on the other hand, focus on failure, and regulation involves trying to move away or stay away from this negative possibility" (p. 158). It could be deduced that the fact of avoiding failure in PE classes has accentuated the intensity with which emotions are experienced, making it difficult to manage them in sports practice.

On the other hand, it was observed that federated athletes show more intensity in positive emotions, while non-federated athletes show more intensity in negative emotions. This may indicate, as evidenced by other studies (Melguizo et al., 2022; Galvis, 2022), that federated students are more motivated to play games and, therefore, to take part in PE classes.

Finally, different research shows that the family has the capacity to influence the practice of PA and health promotion in their children (Gaete et al., 2016; Cueto-Martín et al., 2018). These findings may be consistent with the results obtained, which showed that students whose parents do more PA experienced greater intensity in their positive emotions, and that emotional intensity was also higher in students whose parents did more physical exercise, with some significant differences. Therefore, it could be affirmed that the amount of PA carried out by the parents influenced the emotional experience of their children.

Conclusion

It is concluded with this research that both competitive and non-competitive games generate a type of emotional response. The results showed that non-competitive games showed a higher intensity in positive emotions and competitive games a higher intensity in negative emotions. However, it should be noted that the mere fact of playing already registered significantly higher intensities in positive emotions than in negative emotions. It can therefore be concluded that the use of motor games as an educational resource in Physical Education classes is a good learning resource and can generate greater adherence to healthy habits among students. In addition, and in relation to the physical abilities of the students, this study also concludes that games with a high resistance load produce a greater intensity of positive emotions.

PE teachers should reflect on their educational practice and, to do so, it is essential to think about what type of game is most appropriate depending on the objectives to be achieved (Alcaraz, 2021; Alcaraz-Muñoz et al., 2020; Muñoz-Arroyave et al., 2020). Competitive games favour emotional development in a different way than non-competitive games. Therefore, neither of the two types of games should be eliminated from educational practice.

However, if we want to promote a healthy classroom climate and our intention is to create positive experiences in PE classes in order to create adherence in students' future PA performance, it is advisable to promote more the practice of non-competitive games in classes (Lavega et. al., 2011a; 2011b).

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