
ACHIEVEMENT GOALS IN PHYSICAL EDUCATION AND SPORT AND PHYSICAL ACTIVITY IN LEISURE ON STUDENTS FROM SPAIN, COSTA RICA AND MEXICO

METAS DE REALIZAÇÃO EM EDUCAÇÃO FÍSICA E DO ESPORTE E DA ATIVIDADE FÍSICA NO LAZER EM ESTUDANTES DE ESPANHA, COSTA RICA E MÉXICO

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RESUMO

O objetivo deste estudo é determinar as relações entre gênero, comportamento de prática, nível de atividade física no lazer e estágios de mudança de acordo com as orientações de meta de alunos no ensino secundário. A amostra foi composta por 2168 alunos, selecionados aleatoriamente para participar de um estudo longitudinal, de Costa Rica (423), México (408) e Espanha (1337). Com 1.052 meninos, 1037 meninas e 79 de gênero desconhecido, com idades entre 11 e 16 anos ($M = 12,49$, $DP = 0,81$). Concluiu-se que as variáveis analisadas no esporte e na atividade física no tempo livre dos estudantes estão associados positivamente com maior percepção de metas de realização. Ao mesmo tempo, de acordo com a literatura, há uma previsão superior de prática. Estes dados oferece características positivas de Educação Física (PE), além disso, objectivos do PE pode ser orientada para promover a atividade física no tempo livre entre os alunos.

Palavras-chave: Atividade física. Educação física. Metas de realização.

ABSTRACT

The objective of this study is to determine relationships between gender, behavior of practice, level of physical activity during leisure time and stages of change according to goal orientations of students in Secondary Education. The sample consisted of 2168 students, randomly selected to participate in a lengthy study, from Costa Rica (423), Mexico (408) and Spain (1337). With 1052 boys, 1037 girls and 79 of unknown gender, aged between 11 and 16 years ($M = 12.49$, $SD = .81$). It was concluded that variables analyzed in sport and physical activity during leisure time of students are positively associated with a higher perception of achievement goals. At the same time, according to literature reviewed, there is a higher prediction of practice. This data offers positive characteristics of Physical Education (PE), in addition, objectives of PE could be oriented to promote physical activity during leisure time among students.

Keywords: Physical activity. Physical education. Achievement goals.

Introduction

Depending on the learning environment, subjects generate different motivations, these being a key factor on influencing learning outcomes¹. Therefore, the study of variables that affect student learning is critical to their formation².

The Theory of Achievement Goals has been recognized as an important theoretical model for understanding student motivation and behaviour in both kinds of Physical Education (PE) and practice of physical and sporting activities³. Lately, it has been shown as one of the theoretical models, with the most contributions made, about understanding the cognitive, behavioural and emotional patterns related to the achievement of students in PE classes⁴. Overtime this theory has undergone certain investigations, and has shown some discrepancies in the different studies^{5,6}. These orientations are dispositional and were defined around 12 years ago⁷, precisely the age of the sample of the present study.

Papaioannou et al.⁸ included the dimension of social approval in the study of achievement goals to be taken into consideration and developed a new scale. Later, Ruiz-Juan⁹ validated this scale, called the *Spanish Achievement Goals Questionnaire (AGQ)*⁸, which assessed achievement goals in PE classes in four dimensions: mastery, performance-approach, performance-avoidance and social approval. The first authors already collected these dimensions in a single scale. Their results showed criterion validity and construction, consistent with the initial trichotomous model of achievement goals, acceptable internal consistency and correlation patterns between dimensions that support a discriminate validity of the measurements⁶.

According to the studies reviewed^{10,11}, it is essential that there is a high involvement in physical and sports activities in childhood and especially in adolescence so that they can keep a commitment or practice during adulthood. Therefore, it is interesting to see how goal orientations influence the involvement of schoolchildren in physical education. For example, Wang et al.¹² argued that mastery orientation may foster intrinsic interest in PE, as well as a positive impact on the enjoyment of physical activity in the classroom.

This in turn, creates a positive enjoyment and involvement and indicates a great predictor of future practice of physical activity¹³. Moreover, about performance-avoidance¹⁰, argued that ego-oriented students were at risk of maladaptive behaviours, since taking it as its criterion of success compared to others. Improvement or progress on a task is not enough to give you feelings of competence. Therefore, it is necessary to know how to influence goal orientations of school children in PE on behaviour of practice of physical-sporting activity in leisure time.

Furthermore, the analysis of these variables in three different socio-cultural contexts can be interesting. Spain is a developed country and as literature^{14,15} states, there is a chronic physical inactivity in developed European and American countries. Developing countries, for example Costa Rica and Mexico, have studied other variables such as eating patterns and obesity but regular exercise still needs to be studied, even more so, with longitudinal data showing trends.

The gender gap in sport and physical activity in leisure time are also well documented¹⁶⁻¹⁸, boys being ever more active than girls. Therefore, it is necessary to see how goal orientations of the students, by gender, are related to the behaviour of practice on physical and sport activities.

The index number or pattern of habitual physical sport has been used in lengthy studies to measure the level of physical activity¹⁹. This index is also related to practice goal orientations of school because, in some studies, it has been found that scholars with healthy rates (moderate and vigorous) are more oriented to mastery, performance-approach and social approval¹⁰. Most studies reviewed relate precisely to these goal orientations (mastery mostly) and show positive according to the prediction of physical and sports activities in the future^{6,20,21}.

The *stages of change* have been studied, like another variable of behaviour, towards the practice of physical and sporting activities. This also becomes important because, as Álvarez²² says, the better understanding of the factors that influence a desired behaviour and the social context in which it develops, the more opportunities exist to achieve that the design of intervention will impact on these behaviours. The Transtheoretical Behaviour Change Theory is used to understand and predict better behaviours in relation to health. This theory has become an extended model (is the most widespread in the last decade, especially in North America and Europe), in the planning of programs of health promotion²³.

In the scope of practice of sport and physical activity in leisure time, Zamarripa²⁴ defined as follows: the inactive stages are *precontemplation* (the subject does not intend to practice in the next six months), *contemplation* (the subject intends to practice in the next six months) and *preparation* (where the subject intends to be active in less than one month) period, and active stages are *action* (subjects who perform or have performed physical activity and sport within the last six months) and *maintenance* (at least made regular exercise over the last six months).

It may be interesting to study the relationship of goal orientations with the stages of change and that authors like¹⁰ stated that mastery orientation predicts favourable impact on participation in physical activities and sports, especially for the persistence and maintenance of physical and sport practice throughout the years, which could correspond to the practice of oriented mastery in the maintenance stage (the most active and stable stage).

Therefore, the aim of this study is to understand the behaviour of practice, the pattern of sports physical leisure activity, the stages of change in high school students, and relationship with achievement goals in PE, all this in three countries, checking whether there is a general trend in all of them or not.

Method

Participants

2168 students from first level of Secondary Education were selected to participate in a lengthy study, from Costa Rica (423), Mexico (408) and Spain (1337), being 1052 boys (50.4%), 1037 girls (49.6%) and 79 unknown genders (who did not indicate their gender on the questionnaire), from public schools (86.6%) and private (13.4%). Age range was from 11 to 16 years old ($M=12.49$; $DT=.81$), being average in boys of 12.53 ($DT=.87$) and 12.44 ($DT=.74$) in girls. It was conducted between February and June 2011.

Procedure

Permissions from schools were requested in writing. The research objectives, how it would perform and a model of the scale were explained. It was self-administered with a large application, completed anonymously in a school day, with consensus and previous training of evaluators. Subjects were volunteers, informed of the purpose of the study and assured of absolute confidentiality of answers and data management. There were no right or wrong answers, requesting utmost sincerity and honesty. Only students who had informed consent from parents or guardians participated in the research. It has a favourable report from the Committee on Bioethics of the University of Murcia.

Scales

Sport and physical activity in leisure time. The measurements have followed the same procedures as Ruiz-Juan; Garcia; Garcia; Bush²⁵. A question was used to determine whether respondents participated in sports physical activities in leisure time or not, classified as “inactive” or “active”. This last answer had five additional questions that calculate the rate or amount of pattern of habitual physical-sport^{19,26} and refers to the frequency, duration, intensity, participation in organized sports and sports competitions. Participants were classified as strong, moderate, slight and insufficient activity. For analytical purposes, a dichotomous variable grouping of participants classified as moderately active and vigorously active (high level of physical activity and sport -PAS-), on the one hand, and slightly active and insufficiently active (low level of physical activity and sport -PAS-), on the other hand. Cronbach's alpha shows high reliability of all these variables ($\alpha=.88$ Costa Rica, $\alpha=.83$ Mexico, $\alpha=.87$ Spain) resembling that obtained in the work cited.

*Stages of change*²⁷. It was defined as the following: “Physical activity or exercise includes activities such as brisk walking, running, biking, swimming or any other activity in which the exercise is at least as intense as you could achieve”. The students were asked to mark “Yes” or “No” with respect to the following statements: (1) I am currently physically active, (2) I will try to be more physically active in the next 6 months. Those who marked “Yes” to question (1) did not answer question (2) and went to answer questions (3) and (4). Previously defined regular activity was as follows: “That the activity is regular, should add up to a total of 30 minutes or more, at least 5 days a week. For example, you could make a 30 minute walk or do three 10-minute walks daily for a total of 30 minutes. “The students were asked to mark “Yes” or “No” with respect to the following statements: (3) I currently perform regular physical activity, (4) I have been doing regular physical activity during the last 6 months. As in previous work²⁸ subjects were placed in one of five stages of change: precontemplation, contemplation, preparation, action and maintenance. For analytical purposes, a dichotomous variable is created by grouping the classified in the active stages (action and maintenance), on one hand, and inactive stages (precontemplation, contemplation and preparation) students, on the other hand.

Achievement goal Questionnaire in Spanish of Ruiz-Juan²⁹, original version of the Achievement Goals Questionnaire (AGQ) of Papaioannou et al.⁵ developed guidelines for measuring student achievement goals in PE. The original scale had 24 items, consisting of four subscales: mastery, performance-approach, performance-avoidance and social approval. Its headline: “In PE class...” Answers were collected on the Likert scale from 1 (strongly disagree) to 5 (strongly agree). The values of internal consistency of the subscales ranged between $\alpha = .73$ (Mastery) and $\alpha = .83$ (performance-approach) (Table 1).

Data analysis

Internal consistency (Cronbach Coefficient Alpha), Chi-square (χ^2), *t*-Student, ANOVA and MANOVA, were analysed with SPSS 17.0.

Results

The results of sport and physical behaviour in leisure time (Figure 1) indicate clear differences ($p < .001$) among the three countries. Thus, the highest percentage of active students are in Costa Rica (88.5%), while in Mexico only 34.8% are active, which means that in this country the greatest percentage drop (52.0%) are given and never having practiced (13.2%). The dropout problem is also evident in Spain (22.5%).

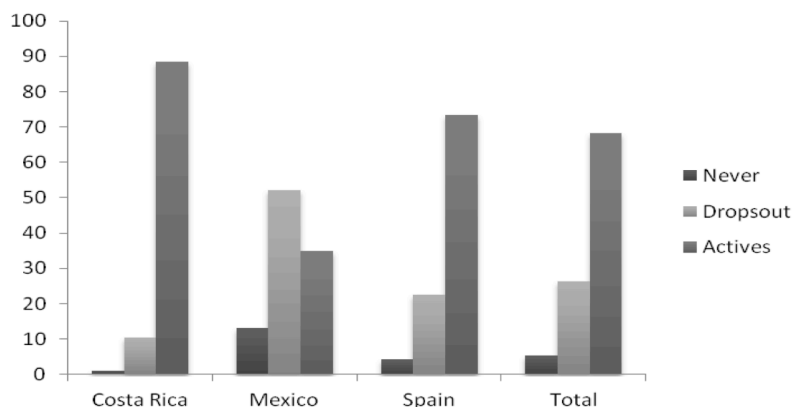


Figure 1. Behaviors before of leisure sport and physical activity ($\chi^2=291.20$; $p < .001$).

Source: Own source.

The pattern of physical and sport activities presents a rather disturbing picture as only 12.0% (10.7% +1.3%) of Mexican students have a high level of physical and sporting activity against 32.7% (29.3% +3.4%) of Spaniards and 23.7% (20.7% +3.0%) of Costa Ricans. Therefore, what prevails is a low level of physical and sport activities in the three countries (Figure 2), especially in Costa Rica with 64.6% (44.2% +20.4%) of students with low level of physical activity and sport.

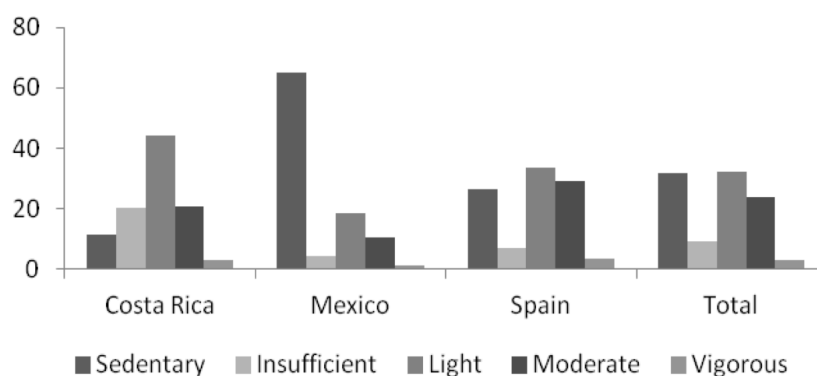


Figure 2. Pattern of leisure sport and physical activity ($\chi^2=347.06$; $p<.001$).

Source: Own source.

In the stages of change, there are statistically significant differences ($p <.001$) among the three countries. 71.9% (59.6% +12.3%) of the Costa Rican students are in active stages of change and only 32.9% (21.9% +11.0%) of Mexicans and 60.8% (37.0% +23.85%) of Spaniards. Therefore, more than two-thirds of students in Mexico are in inactive stages of change (Figure 3).

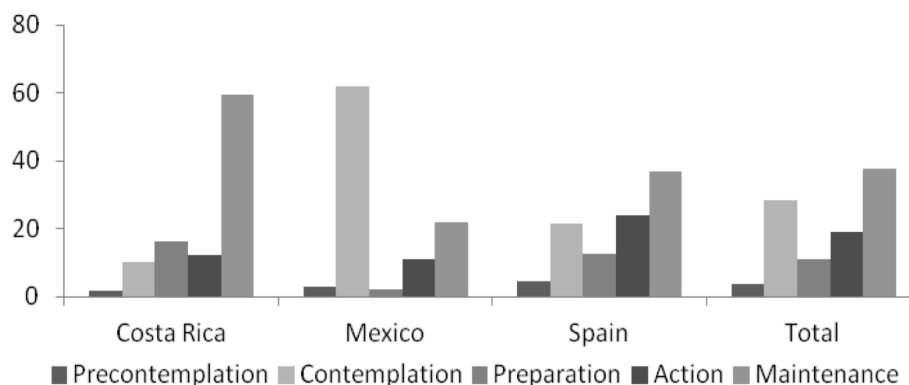


Figure 3. Stages of change among countries and total ($\chi^2=358.97$; $p<.001$).

Source: Own source.

As reflected in Table 1, there are statistically significant differences ($p <.001$) between the results of each of the variables analyzed. Achievement goals of each country shows how the highest scores are given in mastery orientation ($M = 4.40$, $SD = .58$, Mexico) and the lowest in performance-avoidance ($M = 2.77$, $SD = .93$, Spain) in the three countries. Similarly, in the four subscales, the Mexican students obtained the highest scores, followed by Costa Rica and Spain. The results of the Bonferroni test of homogeneous subsets indicate that while the differences in results between variables are small, you can set three different subsets, in each of the four variables for each country.

Table 1. ANOVA country of the dimensions of goal orientation.

	Costa Rica (n=381)			Mexico (n=389)			Spain (n=1096)			F	Sig.
	<i>α</i>	M	SD	<i>α</i>	M	SD	<i>α</i>	M	SD		
<i>Mastery</i>	.80	4.21	.73	.73	4.40	.58	.76	4.02	.72	43.67	.000
<i>Performance-approach</i>	.82	3.35	1.03	.79	3.41	.99	.83	3.16	1.00	10.79	.000
<i>Performance-avoidance</i>	.83	2.81	1.08	.76	2.94	1.01	.77	2.77	.93	4.32	.013
<i>Social approval</i>	.78	3.34	.94	.78	3.46	.89	.80	3.27	.90	6.46	.002

Note: *α* = Cronbach's Coefficient Alpha, M = Mean; SD = Standard deviation.

Source: Own source.

The results of the Bonferroni test of homogeneous subsets indicate that differences in results between variables are small; it can be set three different subsets, in each of the four variables for each country³⁰. A multivariate analysis (Tables 2 and 3) considered as independent variables, gender, behaviour, pattern of physical and sporting activity and stages of change in leisure time. The dependent variables, mastery, performance-approach, performance-avoidance and social approval were performed. The calculated MANOVA showed significant main relationships between dependent variables and independent variables in the three countries. No effects of second-order interaction between the independent variables ($p > .05$) were found in any country (Table 2).

Table 2. Correlations between factors of goal orientation: differences by country.

	Costa Rica (n=381)				Mexico (n=389)				Spain (n=1096)			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
1. <i>Mastery</i> (1)	1	,31**	-,01	,38**	1	,14**	-,06	,19**	1	,28**	-,02	,36**
2. <i>Performance-approach</i> (2)		1	,39**	,63**		1	,29**	,59**		1	,32**	,66**
3. <i>Performance-avoidance</i> (3)			1	,52**			1	,42**			1	,37**
4. <i>Social approval</i> (4)				1				1				1

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

Source: Own source.

In regards to gender, there were statistically significant differences in the three countries and in all variables (except in performance-avoidance). Boys will have higher mean values than girls (Table 3).

There are statistically significant differences in behaviours of physical and sport activity in leisure time in the three countries and all variables (except in performance-avoidance). Actives always have higher mean values than inactives (Table 3).

Analyzing the pattern in physical activity, sport and leisure time, in the three countries and in all variables (except in performance-avoidance), there are statistically significant differences. Those who have a high level of physical activity and sport always had higher mean values than those with low physical activity and sport (Table 3).

Only performance-avoidance, in the stages of change, does not indicate statistically that significant differences were found in any of the three countries, as in Mexico in the other variables. In Costa Rica and Spain, there are significant differences found in mastery and social approval, indicating that students in the active stages have higher mastery and social approval than average values in inactive stages, as happens in Spain in performance-approach (Table 3).

Table 3. Univariate (F) and multivariate analysis of factors of goal orientation by sex, behaviors, pattern of physical and sporting activities and stages of change.

	Costa Rica				Mexico				Spain			
	Gender	Behaviors	Pattern AFD	Stages of change	Gender	Behaviors	Pattern AFD	Stages of change	Gender	Behaviors	Pattern AFD	Stages of change
<i>Mastery</i>	.23	.17	2.37	3.00*	.07	.57	.22	.01	10.11**	3.40	.09	3.68*
<i>Performance-approach</i>	3.45*	3.38*	5.72**	1.51	3.17*	3.58*	3.88*	.50	27.30***	6.20*	3.08*	.44
<i>Performance-avoidance</i>	.06	.49	2.17	.76	.08	.20	1.01	.01	1.31	.33	.17	.22
<i>Social approval</i>	8.67**	3.27*	3.09*	3.01*	3.23*	.31	.11	.22	28.79***	4.28*	3.00*	3.28*
Multivariate analysis												
<i>Lambda of Wilks</i>	.94	.96	.95	.97	.93	.98	.98	.99	.94	.98	.98	.98
<i>F multivariate</i>	4.01***	2.56*	3.47*	1.56*	2.60*	2.37*	2.48*	.15	12.99***	2.84*	2.99*	3.07*

*(p<.05), **(p<.01), ***(p<.001)

Source: Own source.

Discussion

The Mexican students are the most inactive and they show a higher dropout rate, indicating an index of unhealthy practice and being more than two-thirds of inactive stages of change, issues that have been corroborated in the literature³¹. Although most of Costa Rican and Spanish students are still in stages of active change, in other words, these two countries have fewer students who have never practiced physical and sport activities in their leisure time. It is important for schools to recognise that there is a percentage that have already dropped out of this practice at this age. Therefore, the problem of dropout from physical and sport activity at school age is quite common in different cultural contexts coinciding with the change of educational stage^{10,32,33} being one of the crucial stages. Though, this is not sufficiently clarified so far, because Carlin et al.³⁴ attempted to relate the reasons for dropping out of the practice of goal orientations but no significant correlations were obtained.

According to the pattern of physical and sport activity, in all countries, there are a very low percentage of students (around three percent) that perform vigorous exercise regularly and between ten and almost thirty percent make moderate. This data is corroborated by other studies such as Nettlefold et al.³⁵ when they claim that even a very low percentage of students meet the recommended physical and sport activity intensity. Therefore, this is a serious health problem, especially in the Mexican students because as it is said³⁶, affirmed that vigorous activity has greater health benefits than four hours of activity with an index of insufficient or light practice. There are very few students receiving these benefits in all three countries. Furthermore, according to lengthy studies^{26,37}, a low intensity of practice (insufficient and light), is related to a higher dropout rate. In fact, Seo et al.³⁸ argued that only vigorous intensity correlates with a high level of fidelity to the physical and sport activity. Wickel, Issartel and Belton³⁹, in a lengthy cohort study, found that the critical period to decreasing intensity in physical activity (from moderate and vigorous to light intensity) is the stage of preadolescence, shortly before the critical dropout period discussed above, so that the pattern of low physical and sport activity is a very influential factor in the dropout of the practice of students of school age⁴⁰.

In developed countries such as Spain, many physical activity programmes have been developed within everyday life¹⁴. In Spain, there is a great sporting culture and greater awareness to the practice of physical and sporting activity. However, Costa Rica and Mexico are emerging countries with less means to practice regular exercise and do not have much cultural tradition. This data corroborates that of other studies⁴¹ regarding the need to

implement strategies in developing countries because the schools do not meet the requirements of sport and physical activity.

Active scholars are more oriented to mastery, performance-approach and social approval, in all countries, than inactive scholars, as is the case with students who are active in the stages of change and those with a high pattern of sport and physical activity during leisure time. These three goal orientations are those that are associated with increased prediction of future practice^{9,20,21}. Lengthy studies confirmed that when subjects have a goal orientation focused on mastery, that is, the effort and the improvement of the task, the likelihood to remain active in the future is quite high⁴², as indicated by Papaioannou et al.⁴³ who claimed that mastery orientation predicts persistence and maintenance of activity over the years. The mastery goal is also related to variables that positively affect the practice like enjoyment^{13,33}.

A performance-approach goal in EF may be of interest to students who are working, trying to show a better performance than their peers and have a higher perceived competence, as it relates to increased physical activity and a pattern of higher practice²¹. But it is worth considering, as indicated by Ruiz-Juan⁹, a high performance-approach goal may cause dropout in the case that young people do not trust on their ability or competence. In fact, Gao, Lochbaum and Podlog⁴⁴ found a negative correlation of performance-approach with practice of physical and sport activity.

The social approval goal orientation is the second of the guidelines presented by the students of the three countries, behind the mastery, being higher in the active than inactive students and those with a pattern of high physical and sport activity. Students who develop this goal orientation in PE classes remain positive to stay active in their free time as it relies on voluntary effort not the requirement to have to. This maximizes the chances of attributing effort to oneself and also minimizes the chances of assigning low effort⁵.

In this research, the goal which gives the lowest values is the performance-avoidance, and this was not statistically significantly related to the behaviours of practice, pattern of physical and sport activities, stages of change and gender. According to Papaioannou, Marsh and Theodorakis⁴⁵, students having a performance-avoidance goal orientation, especially inactive, try by all means not to perform the proposed activity, or do the minimum, or stop attending PE classes. These students try to avoid doing worse than others⁴⁶ and therefore, it could be a reason to avoid and dropout of the practice of physical and sport activities, and also often have a low perception of competence¹⁰.

Analyses of variants performed to find if there were significant differences by gender, showed that boys had higher performance-approach and social approval compared with girls. The results were consistent with previous studies on gender differences in PE^{2,21,42,47} reiterating the association between high levels of perceived competence with high performance-approach achievement goal and low performance-approach orientation²¹. This comes to show that they consider physical education as a means to acquire a certain status or social recognition as a demonstration to the outside that they are better and higher than their peers⁴⁸. Indeed, the rejection of the girls to ego is consistent with data from international literature, and in young athletes, in a study of young European athletes⁵⁰ in all countries, boys and girls developed a higher mastery goal orientation than ego, as is the case of the present study, which is also observed in another study about Mexican youth².

The mastery goal, to which both genders are more oriented to, is associated with more persistence, interest, effort and enjoyment⁴⁹, variables that have been associated in turn with an increased likelihood of future practice⁹. Notably, most studies analyzing the features and characteristics of the socio-cultural contexts presented here meet the needs of each and are able to adapt to the necessary educational interventions that are required.

In conclusion, there is a major problem of dropout from physical and sport activity which is corroborated; it is quite common in three different cultural contexts as discussed here, coinciding with the change of educational stage. We are facing a serious health problem, especially in the Mexican students, since the pattern of physical and sport activity is very low and very few meet the minimum requirements for health benefits. Moreover, low intense practice is associated with a higher dropout rate. Therefore, this problem will increase evenly, in all three countries, in a short time period if no effective intervention is performed. The PE, and achievement goals that it develops through students, play an important role in this problem. Boys are in stages of change more active and have a higher pattern of physical and sport activity, and in PE classes are more oriented to mastery, performance-approach and social approval goal orientations, which are related to a higher probability of persistence of the practice in the future. The general trend observed in all three countries is similar, so a deeper understanding of each socio-cultural context analysis of PE enrolled students is required.

As the literature suggests there is a vast field of possibilities left open for future research. It would be interesting to see the relationship of goal orientation with other psychological aspects such as motivation, perceived competence, satisfaction and motivational climate, which would provide valuable new evidence on the effect generated on physical and sport activity in leisure time and the intensity which it is done. However, as this work is part of a longitudinal study, the next results will help clarify these questions.

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