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ORIGINAL

PERCEIVED QUALITY OF SCHOOL SPORTS AS PREDICTOR OF SPORTS DROPOUT IN ADOLESCENTS

CALIDAD PERCIBIDA DEL DEPORTE ESCOLAR COMO PREDICTOR DEL ABANDONO DEPORTIVO EN ADOLESCENTES

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ABSTRACT

School Sports dropout is a weakness in building a healthy lifestyle. This paper aims to determine if the perceived quality of school sport is related to sport abandonment. A total of 1.109 teenagers from 28 schools that make a sport system were surveyed. The survey tool was EPOD. Different statistical techniques have been used: contingency tables and chi-square test, ANOVA,

correlations and multiple regressions. The results show that a 39,45% of teenagers have abandoned organized sport activities, that satisfaction with school sports is good, being the human factor the best assessed, whereas the sport facilities have earned the worst rating. The relationship between the school sport assessment and the dropout rate has been found. The lowest rated sports have higher dropout rates.

KEY WORDS: Sport dropout, teenagers, perceived quality, school sports.

RESUMEN

El abandono del deporte escolar supone una debilidad en la construcción de un estilo de vida saludable. En este trabajo se pretende conocer si la calidad percibida del deporte escolar se relaciona con el abandono deportivo. Se ha encuestado a un total de 1.109 adolescentes de 28 centros escolares que conforman un sistema deportivo. El instrumento utilizado fue EPOD. Se han utilizado diferentes técnicas estadísticas: tablas de contingencia y prueba de chi cuadrado, ANOVA, correlaciones y regresión múltiple. Los resultados muestran que un 39,45% de los adolescentes han abandonado la práctica deportiva organizada, que la satisfacción con el deporte escolar es buena, siendo el factor humano el mejor valorado, mientras que los espacios deportivos han obtenido la peor calificación. Se ha hallado la existencia de relación entre la valoración del deporte escolar y la tasa de abandono. Los deportes peor valorados presentan tasas de abandono más altas.

PALABRAS CLAVE: Abandono deportivo, adolescentes, calidad percibida, deporte escolar.

INTRODUCTION

In the 21st Century, health problems caused by lack of physical activity (PA) occupy a special place in both developed and developing countries (Guthold, Ono, Strong, Chatterji and Morabia, 2008). This problem is particularly acute in children and adolescents, who in the last two decades have experienced a progressive deterioration of their health largely attributed to a sedentary lifestyle (Huang, Ball and Franks, 2007; Jolliffe and Janssen, 2006). The consequences of inactivity in children and teenagers have spread worldwide turning into an epidemic (Popkin, Conde, Hou and Monteiro, 2006), becoming imperative to take measures to promote PA in school age (Mack and Edginton, 2004; Mollá, 2007; Parrack, 2002; Pierón, Ruiz, García and Díaz, 2008) where the acquired habits tend to be more durable (Kirk, 2005; Nuviala, Salinero, García, Gallardo and Burillo, 2010).

Although various programs have been designed to promote the youth participation in PA and school sports, many teenagers participating in those

programs fail to do so (Mack and Edginton, 2004), which is very worrying since it has been found that the presence of PA and sports after school at the school facilities is an activity of great importance in education, as it encourages the students' development, not only benefiting the conquest of motor skills but also the acquisition of educational values to achieve a healthy lifestyle (González and Campos, 2010). In fact, the abandonment of after school sports, despite being under study over a decade (Patriksson, 1988; Skard and Vaglum, 1989), is a real and important problem in today's youth, to which the sports provision does not seem to respond (González and Campos, 2010; Nuviala and Nuviala, 2005; Palau, Ponseti, Gili, Borrás and Vidal, 2005), having a need for further research on issues related to this dropout, in order to take measures to improve this situation (Macarro, Romero and Torres, 2010).

A review of the literature shows that the age range coinciding with adolescence is the key stage in the phenomenon of sport dropout (Evans, 2008; Michaelson, 2006), which increases as does age (Claessens and Lefevre, 1998; Evans, 2008; Nuviala and Nuviala, 2005; Palau *et al.*, 2005), affecting mainly females, who already had higher rates of physical inactivity (Macarro *et al.*, 2010; Mollá, 2007; Nuviala and Nuviala, 2005; Palau *et al.*, 2005; Patriksson, 1988; Pierón, Ruiz, García and Díaz, 2008). However, differences between the sexes in relation to the reasons for dropping out have not been found (Macarro *et al.*, 2010), being the lack of time and fun the reasons outlined more (Evans, 2008; Macarro *et al.*, 2010; Nuviala y Nuviala, 2005; Palau *et al.*, 2005), without forgetting others such as deficient social relations in the group, conflict of interest, excessive demand of competition, low perception of competence or injury (Michaelson, 2006; Skard and Vaglum, 1989). The increased competition due to the existence of a greater number of leisure activities should be added to those above (Patriksson, 1988; Riewald, 2003; Skard and Vaglum, 1989).

Most studies on sport dropout have been descriptive, difficult to generalize, as they have used different samples and the commitment of practice was varied (Cervelló, Escartí y Guzmán, 2007), and they have dealt with the physical-sport practice from the point of view of motivation (Almagro, Sáenz-López and Moreno, 2010; Craike, Simons and Zimmermann, 2009; Evans, 2008; Le Bars, Gernigon and Ninot, 2009; Macarro *et al.*, 2010; Riewald, 2003). Nevertheless, the phenomenon of sport dropout shall not be reduced to that general view, it is necessary to study the social context surrounding the physical-sport practice in depth (Boiché, y Serrazin, 2009; Ruiz, García and Díaz, 2007) and the complexity of the sport services (SS) (Patriksson, 1988), turning into a new research line and of special interest not only because of the implications for the sport organizations but also to deepen on the psychosocial aspects that lead young people to continue or drop out the sport practice (Arruza and Arribas, 2008).

Recently, from a more social side, the school sport services, their perceived quality and the provided activities are being studied from the perspective of the users (Boiché, and Serrazin, 2009). If we understand the SS as a good within the leisure industry, where there are many substitute services that affect both

the consumption decision and the decision to follow or drop out, it is not surprising that measuring the perceived quality of users is considered a relevant factor for the success of the organization and the services provided (Larson and Steinman, 2009; Mañas, Giménez, Muyor, Martínez-Tur and Moliner, 2008; Martínez and Martínez, 2008). These studies have among their goals to determine what factors are related to the users' loyalty (Tsitskari, Tsiotras y Tesiotras, 2006), the need or justification for these studies is further increased when dealing with school SS and organized PA targeted to adolescent population, since the relationship between the youth participation in organized PA and the PA in adulthood has been provedn (Telama, Yang, Hirvensalo and Raitakari, 2006).

However, there is a gap in research in youth population regarding this topic, whereas for adult population the positive relation between the service quality and the satisfaction of the users is well documented (Bisschoff and Lotriet, 2009; Kyle, Theodorakis, Karageorgiou and Lafazani, 2010; Murray and Howat, 2002; Shonk and Chelladurai, 2009), and at the same time with the intention of permanence of the users in the sport services (Chi and Qu, 2008; Kim and Trail, 2010; Murray and Howat, 2002; Shonk and Chelladurai, 2008), as well as the claim for potential users (Bisschoff and Lotriet, 2009). Regardless of the factors that determine quality, the tangible aspects of facilities are the ones that determine the assessment the most (Mañas *et al.*, 2009; Rial, Varela, Rial and Real, 2010) and the employees' attitudes and skills (Bodet, 2006; Murray and Howat, 2002).

Thus, this paper aims to: knowing the participation rates and abandonment of the organized PA in teenagers enrolled in compulsory secondary education (ESO) in schools of villages comprising northern Huelva's grouped area of sport services (Spain); studying the perceived quality of PA in general and the sports modality offered to teenagers in particular, differentiating socio-demographic variables; and checking if there is a correlation between the perceived quality and the sport dropout rates in the population studied. At the same time it seeks to establish a model that can explain and predict the sport dropout from the set of variables emerged from the factor analysis in order to improve the perception of school sports and reduce dropout rates.

MATERIAL AND METHOD

Participants

The number of students that participated in this study was 1.109 adolescents enrolled in ESO (compulsory secondary education) with an average age of $14,12 \pm 1,54$, 55,90% males and 44,10% females. The study was conducted in 28 villages and hamlets that make up northern Huelva's grouped area of sport services, where the total population currently enrolled in ESO is 1.325 students, so we worked with an error rate of $\pm 1,20\%$ for a confidence level of 95%.

Instruments

The survey instrument used was the Global Assessment Scale of Sport Services (EPOD), validated in teenagers (Nuviala, Tamayo, Nuviala, González and Fernández, 2010). The internal consistency of the resulting EPOD was assessed with Cronbach's alpha, yielding a value of ,901. The values for each of the factors resulting from the confirmatory factor analysis ranged from ,853 (Materials) and ,712 (Sport trainers / Sport technician).

The questionnaire consists of 16 items grouped in 5 dimensions. The first factor, Activities, groups 4 items; the factors Sport trainers, Space, Materials and Image consist of 3 items each. The answers to these items are closed, answering with a Likert scale whose score ranges from 1, value corresponding to totally disagree, to 5, value corresponding to Totally agree with what was proposed.

Some socio-demographic questions were added to the questionnaire in order to establish differentiating profiles.

Procedure

The fieldwork was conducted in all the secondary schools in the municipalities grouped in the Northern Sport Services of Huelva (Spain) during school hours. Permission was granted in advance from the person in charge of the SS mentioned, who personally took care to inform those responsible of the schools, who in turn got in touch with the students' parents to inform and obtain their consent for the participation of their children in the study. All the students, who where in class at the time of the measuring, brought their parent consent and voluntarily agreed to participate in the survey.

At the data collection being the interviewer present, the participants were asked to fill out a questionnaire and to ask any questions they had about the items. The average time spent on the completion of the questionnaire by the ones who participated in organized PA was 15 minutes. Those who had never been users of the grouped SS, which is the only organization offering organized PA in the municipalities that comprise it, and those who had abandoned it finished the questionnaire earlier, since they were asked not to fill out EPOD nor the satisfaction variable.

Statistical analysis

A descriptive data analysis was carried out, where the statistics used were frequency, mean, and standard deviation and the inferential analysis, on which different statistics were applied: contingency tables and chi-square contrast test (χ^2); comparison of averages through the T test and single-factor ANOVA, and Pearson's correlation.

In the inferential statistics, the perceived quality of the service (the degree of satisfaction with it) was used as dependent variable, and sex, age and sport modality as independent variables. Whereas the correlated variables were the perceived quality of the service and sport dropout.

Finally, a multiple linear regression analysis was carried out to determine an equation (model) that explains the behaviour of the dropping out variable, using the information provided by explanatory or independent variables. In this case, the goal was to predict the dropout rate and establish a model based on the variables of the confirmatory factor analysis (Nuviala *et al.*, 2010).

RESULTS

The initial descriptive analysis showed that 42,50% of the participants were engaged in organized PA, while 39,45% stated that they had participated in that kind of activity in the past but they had dropped it out. The remaining 18,05% declared not to have ever participated. A statistically significant relationship ($p=,000$) was found between participation, dropout or have never performed organized PA and the socio-demographic variables sex and age (table 1), proving that females and older students are the ones with lower participation rates in school sports (organized PA).

Table 1. Contingency table of organized PA performance and dropout by sex and age. Chi-square test and significance level

	Perform PA	Dropped out	Never performed	χ^2	p
Sex Male	53,40%	33,00%	13,60%	66,087	,000
Female	28,70%	47,60%	23,70%		
Age				48,991	,000
Total	42,50%	39,45%	18,05%		

The descriptive statistics for the perceived quality of the educational Sport Services, which are illustrated in table 2, highlighted the Sport trainers item as the best valued and facilities as the item with the lowest score. In the inferential analysis, there were highly significant differences ($p=,000$) depending on gender for the total assessment of the perceived quality (EPOD) and the items Activities and Sport trainers and to a lesser extent in the Material item ($p=,037$). In all cases women held a more positive assessment.

Table 2. Assessment of the perceived quality of the service based on gender. T Test and significance level

		Perceived quality of the service			T	p
		Total	Males	Females		
<i>EPOD</i>	Average	3,58	3,51	3,84	-3,985	,000
	±	,95	,94	,73		
<i>Activities</i>	Average	3,95	3,84	4,23	-5,093	,000
	±	,75	,77	,64		
<i>Sport trainers</i>	Average	4,02	3,91	4,27	-4,468	,000
	±	,84	,87	,69		
<i>Facilities</i>	Average	3,18	3,16	3,19	-,322	,747
	±	1,06	1,09	,98		
<i>Material</i>	Average	3,79	3,72	3,95	-2,097	,037
	±	1,05	1,08	,97		
<i>Image</i>	Average	3,73	3,67	3,86	-1,882	,060
	±	,97	,99	,94		

Depending on age, differences were significant ($p=,012$) in the assessment given to the item Facilities (table 3). Whereas depending on the sport modality there are significant differences in the average of the perceived quality (EPOD) and in the items Activities and Sport trainers (table 4).

The dropout percentages of the sport modalities that can be seen at table 4 have been calculated taking into account the number of students enrolled, those enrolled in each modality as well as the number of students that have abandoned that sport modality.

Table 3. Assessment of the perceived quality of the service based on age.

	F	p
<i>EPOD</i>	1,088	,370
<i>Activities</i>	1,075	,379
<i>Sport trainers</i>	1,635	,113
<i>Facilities</i>	2,481	,012
<i>Material</i>	1,343	,220
<i>Image</i>	,937	,486

Table 4. Perceived quality depending on the sport modalities. Dropout percentage, Anova and significance level

Modality	Quality Perceived Factors						% dropout
	EPOD	Activities	Technical	Facilities	Materials	Image	
Football	3,57	3,89	3,96	3,00	3,72	3,63	43,89
Basketball	3,47	3,86	3,66	3,11	3,47	3,50	39,56
Volleyball	3,92	4,28	4,41	3,51	4,12	4,03	34,98
Athletics	3,97	4,14	4,25	3,65	3,84	4,23	32,98
Aerobics	4,13	4,48	4,30	3,55	4,13	3,81	21,53
Tennis	3,88	4,07	4,60	3,15	3,50	3,94	37,26
Dance	3,94	4,36	4,33	2,33	4,58	3,92	30,73
F	2,363	2,937	2,753	1,857	0,99	1,925	
Sig	,03	,008	,012	,087	,432	,076	

The correlations between the scores given by the participants to each of the sports and their dropout rates showed that there is a statistically significant negative relationship with the assessment of the perceived quality (EPOD) ($p=,014$) and with the item Activities ($p=,005$). The other quality dimensions showed negative relationships but they are not significant (Table 5).

Table 5. Correlation of the perceived quality and dropout rate by sport modality. Pearson's correlation and significance level

	Assessment (EPOD)	Activities	Sport trainers	Facilities	Material	Image
Pearson's correlation	-,857*	-,907**	-,425	-,221	-,601	-,364
Sig. (bilateral)	,014	,005	,341	,633	,154	,422

Finally, the results of the search for a predictive model of sport dropout by sport modalities for the population under study are shown. To that end the dropout rate by modality has been used as the dependent variable, and the dimensions obtained after the confirmatory factor analysis as independent variables.

The model drawn from the multiple regression established that the variable on which sport dropout depends is: Activities. The proposed model was: Sport dropout = 148,912 – 25,559 (Activities). Details are shown in table 6.

Table 6. Multiple Regression, prediction of the perceived quality of sport services aimed at school-age population.

Model summary									
Model	R	R Square	Adjusted R Square	Std Error of the Estimate	Change Statistics				
					R Square Change	F change	gl1	gl2	Sig. F change
1	,907 ^a	,823	,787	3,29502	,823	23,214	1	5	,005

ANOVA						
Model		Sum of Squares	Gl	Mean Square	F	Sig.
1	Regression	252,036	1	252,036	23,214	,005 ^b
	Residual	54,286	5	10,857		
	Total	306,321	6			

Coefficients						
Model		Unstandardized coefficients		Standardized coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	148,912	23,796		6,258	,002
	Activities	-27,559	5,720	-,907	-4,818	,005

Excluded Variables						
Model		Beta in	T	Sig.	Partial correlation	Co linearity statistics
						Tolerance
1	Sports trainers	,244 ^b	1,005	,372	,449	,602
	Facilities	-,149 ^b	-,753	,493	-,352	,993
	Material	,392 ^b	1,301	,263	,545	,343
	Image	,132 ^b	,560	,605	,270	,740

DISCUSSION

The results on participation and dropout rates in school sports by surveyed adolescents indicated that 42,50% performed organized PA, 39,45% had dropped it out, while the remaining 18,05% had never participated in this kind of activity. These results are similar to the ones found out in students from ESO by Nuviala, Ruiz, García and Díaz (2006) that obtained a 46,30% , and a 36,80% of participants in organized PA in rural population of different Spanish regions, and slightly lower regarding participation in organized PA if compared with the ones obtained in Spanish teenagers by Tercedor (1998) where a 47,10% participated. These results do not even differ substantially from those found in 1st year of Bachillerato Andalusian students by Macarro et al. (2010) who do

not differentiate between PA and organized PA, with 49,50% that participates, 35,50% that dropped out, and the 15% remaining that have never participated in these activities. This latter dropout percentage coincides with the one reported for American adolescents who participated in annual organized PA programmes, by Riewald (2003).

In contrast and as expected because of methodological issues, regarding sport practice the results of this study were less positive than those found by most studies that have analyzed the performance of PA at schools, since most of them have not discriminated if the activity was organized or performed freely. These studies reveal participation rates of PA that were around the 70% (Pierón *et al.*, 2008; Ponseti, Gili, Palou and Borrás, 1998) and dropout rates that exceed more than ten percentage points to that of adolescents that had never participated (Mollá, 2007).

Differences have been found in the percentage of adolescents who currently practiced organized PA and dropout rates between males (53,40% and 33,00% respectively) and females (28,70% and 47,60% respectively). Participation results of males are similar to the ones found in other studies like the one by Tercedor (1998) with a 55,60% in 10 year old school students or Nuviala *et al.* (2006) with a 55,10% in Andalusia (Spain), including students from primary and secondary education, although the above percentages are lower than for the same kind of population in Aragon, (Spain), 61,70%. As for the female gender, the results are more negative than the 36,20% found by Tercedor (1998) and the 41,70% and 38,8% that Nuviala *et al.* (2006) obtained in two Spanish regions. Studies that do not discriminate whether the PA is organized or free also found differences in gender, in favour of males regarding PA participation and of females regarding sports dropout, and higher values of participation for both sexes compared to those reported in this study, and lower results in terms of dropout rates especially for males (23,60% and 16,00% for adolescent males in Southern and Central Spain respectively) (Macarro *et al.*, 2006; Mollá, 2007). The chi-square test showed a significant relationship between gender, participation and dropout rates of school sports, coinciding with what is expected following the literature (Macarro *et al.*, 2006; Nuviala *et al.*, 2006; Pierón *et al.*, 2008; Suris and Parera, 2005).

The results prove that age, as well as gender, are related to students' physical practice, when getting older there is more dropout and less participation (Claessens and Lefevre, 1998; Evans, 2008; Parrack, 2002; Suris and Parera, 2005), finding statistically significant differences, a situation already known regarding organized PA (Nuviala *et al.*, 2006). Similarly there were significant differences depending on sport practice, which reinforces the influence of social and environmental factors in the physical practice (Craike *et al.*, 2009).

As for the assessment of the service quality that the organized PA (school sports) provided, it can be stated that it has been positive obtaining an average score for the total of items of $3,58 \pm 0,95$ in the EPOD over a maximum of 5,00 points. Resulting that from the extracted factors of the factor analysis, the item

Sport trainers is the highest rated ($4,02\pm,84$) while facilities was the item that was worst rated ($3,18\pm1,06$). Results that are consistent with those found in Spanish adults by Rial et al., 2010, who obtained a valuation of $4,18\pm,50$ over 5.00 in the assessment for staff and $3,85\pm,45$ in the evaluation of facilities. Mañas et al. (2008) also found in adult Spanish population a more positive assessment in aspects of the human factor ($2,13\pm,72$ over 5,00 in reverse scale for social interaction) than in the dimension Sport Facilities ($2,43\pm,56$). Both dimensions are the ones where Afthinos, Theodorakis y Nassis (2005) got better results in French adults.

Highly significant differences have been found on the quality assessment regarding gender, being higher the value given by females, for the total of the questionnaire, ($3,51\pm,94$ vs. $3,84\pm,73$), for the item Activities ($3,84\pm,77$ vs. $4,23\pm,64$) and Sport trainers ($3,91\pm,87$ vs. $4,27\pm,69$) and the one with lower level of confidence is the item Materials ($3,72\pm1,04$ vs. $3,95\pm,97$). Results questioning those found by Calabuig, Quintanilla y Mundina (2008) y Lee, Kim, Ko and Sagas (2011), who obtained a more positive assessment of quality in males. However, age was not a variable that had been related to the perceived quality, except for the item Facilities, data different to the ones mentioned by other researches (Afthinos et al., 2005; Calabuig et al., 2008), but this can be due to the slight difference in age between the subjects of this study.

The results obtained allow defending the initial idea of relationship between sport dropout and the perceived quality in different sports. The finding of significant differences in perceived quality for some of the items that make up the EPOD depending on the sport modality, coupled with the existence of also significant differences in the practice of school sports in terms of some socio-demographic variables, support the intention of this paper to verify in adolescents the existence of a relationship between the service quality of school sports given and the dropout rates. Issue where a negative correlation for both perceived quality (EPOD) and the item Activities was found. Finding that shows, along with other results like those by Nuviola, Tamayo, Nuviola, Pereira and Carvalho (2012), that the perceived quality is a variable to study and be taken into account among other factors that influence adherence and dropout out of school sports by adolescents, as reflected for other services (Bisschoff y Lotriet, 2009; Chi y Qu, 2008; Kim y Trail, 2010; Murray y Howat, 2002; Shonk y Chelladurai, 2008).

It has even more sense at this point now to establish a model capable of explaining and predicting the abandonment of adolescents by sport modalities. The multiple linear regression analysis explained 82% of the variance, being only included the item activities resulting from the factor analysis of the instrument (Nuviola et al., 2010), as the explanatory variable. The result does not match those reported for adults by literature, which points the human factor as the main predictor of perceived quality of the service (Bodet, 2006; Murray and Howat, 2002), as well as tangible factors whose importance has increased in recent years (Mañas et al., 2008; Rial et al., 2010). There is no evidence of

the existence of precedents having made multiple regression analysis for the perceived quality in adolescents.

Regarding study limitations, it is worth mentioning the existence of different variables that like perceived quality with Sport Services, have influence on adherence and dropout of school sports, so it provides one more aspect to consider, which is insufficient by itself for explaining this phenomenon. Another limitation is the absence of precedents to analyze the offer of service in relation to the factors identified in the assessment of quality, just as the lack of studies focusing on the organized PA (school sports) with which to compare the results. Finally, although we worked with the total population and not just with a sample of it, it would be interesting to expand the population and consequently the study subjects for future studies.

Future studies should also address the qualification of the human resources, characteristics of the tangible aspects of the services and offer of activities, relating them to the perceived quality in organized PA, practice and dropout rates. Being able to analyze satisfaction with other constants that have shown being influent on the dropout issue. Issues, that like those rose at the start of this paper, may have practical application in the SS management and consequently in their success to help getting a youth as active as possible.

Therefore, the conclusions of the study are: 1) 42,50% of the population studied is currently practicing school sports, while 39,45% has dropped it out, higher participation rates and lower dropout rates are found in males and younger subjects, which are statistically significant differences. 2) The perceived quality of school sports is good, being higher considered the sport trainers and lower the sport facilities, being more positive the assessment made by females. 3) There is a negative, significant relationship between the perceived quality, the item activities and the sport dropout rate in the different modalities. 4) The development and offer of activities is the factor that best predicts sports dropout.

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