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ORIGINAL

THE GRADUATE OF PHYSICAL ACTIVITY AND SPORT SCIENCES AS PHYSICAL AND SPORT READAPTATOR

EL LICENCIADO EN CIENCIAS DE LA ACTIVIDAD FÍSICA Y DEL DEPORTE COMO READAPTADOR FÍSICO-DEPORTIVO

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ABSTRACT

This research describes the socio-demographic profile, employment and training of graduates in Physical Activity and Sport who work in the end of physical-sport retraining. The methodology used is a quantitative descriptive cut. The sample size was 600 people working on functions of physical activity and sport in the Region of Valencia. The people in this study were mainly men (81,8%) and under 30 years old (54,5%). In addition, most of them work for companies (85,8%) and they have permanent contracts (67%). Also, we find that the vast majority of these graduates (91%), have made courses and have attended seminars or congress of Physical Activity and Sport in the last four years.

KEY WORDS: sport, rehabilitation, profession, graduate.

RESUMEN

Esta investigación describe el perfil sociodemográfico, laboral y formativo de los licenciados en Ciencias de la Actividad Física y del Deporte que trabajan en la readaptación físico-deportiva. La metodología utilizada es cuantitativa de corte descriptivo mediante encuesta. El tamaño de la muestra fue de 600 personas que trabajaban en funciones de actividad física y deporte en la Comunidad Valenciana. En este estudio se obtiene que son principalmente hombres (81,8%) y menores de 30 años (54,5%). Además, la mayoría trabajan para empresas (85,8%) y tiene una contratación indefinida (67%). También, una gran parte (91%) de estos licenciados han realizado cursos y han asistido a jornadas o congresos de actividad física y deporte en los últimos cuatro años.

PALABRAS CLAVE: deporte, readaptación, profesión, licenciado.

INTRODUCTION

Prevention and rehabilitation by means of physical activity and sports has always been present in a different way, to a greater or lesser extent, as a job role of physical activity and sports or as a professional field basis in the physical activity and sports services (Alonso & León, 2001; Campos Izquierdo, 2007; Lalín, 2008; Lloret, 1989; Tojal, 2004).

In the white book of the Bachelor's degree in Physical Activity and Sports Sciences drawn up by the Headmasters and Deans Conference from the Physical Activity and Sports Sciences faculties in 2004, it is determined, among several objectives and functions in the studies of Physical Activity and Sports Sciences, the professional training of physical activity experts for health and sport training.

Likewise, it is important to highlight that according to the Law of Region of Cataluña 3/2008, April 23rd, on the practise of sport professions, the physical-sport rehabilitation job role is part of the professional trainer profession, as it is shown in the fifth article that professional trainer means those who recover the physical condition of injured sportsmen as well as applying assessment test by means of the implementation of knowledge and techniques of Physical Activity and Sports Sciences.

In this sense, need and interest in educating qualified professionals, specifically for this field of professional intervention have emerged in physical activity and sports. All of this has caused the pretension of providing these graduates with specific knowledge, skills and attitude so they can carry out prevention and rehabilitation by means of physical activity and sports in an appropriate and efficient way. Consequently, subjects and contents related to such professional activity are beginning to be included in this degree's curricula. Likewise, specific master's degrees in relation to prevention and rehabilitation by means of physical

activity and sports have been created in different Spanish universities.

For recovery from an injury there are several authors who state various progressive phases in which, directly or indirectly, the physical rehab therapist will be involved. Among other, Paredes and Martínez de Haro (2009) state the next phases: medical treatment, medical treatment plus individual training, specific individual training and back to collective training. Likewise, Ramos, López-Silvarrey, Segovia, Martínez and Legido (2008) determine: immediate phase, post-surgical phase, functional training phase and back to physical activity or sports phase. For their part, Lalín and Peirau (2011) state the next: recovery, rehabilitation and retraining. Berdejo, Sánchez, González Contreras and Jiménez (2007), in turn, determine: rehabilitation phase, precompetitive retraining phase, competitive retraining phase.

Likewise, Lalín and Peirau (2011) state that the physical rehab therapist must be a specialized physical trainer who coach and train the injured sportsman, generally in an individual situation, to carry out appropriate and safe routines with the objective of preventing and recovering his physical condition in terms of health and performance and improving his sports competence in order to get back efficiently and as soon as possible to collective training and competition.

It is also important to highlight that, besides the need to educate and train the professionals of this field, another relevant aspect of the process is to delimitate the professional tasks, performances and competences of the physical rehab therapist and his multidisciplinary relation to other professionals, as this function is part of complex processes which require the intervention of a multidisciplinary team (Paredes, 2004; Lalín, 2008; Reverter, 2004; Seirul-lo, 1987).

In this sense, Lalín and Peirau (2011) state that the functions, competence and responsibilities of a physical rehab therapist are:

- Injury prevention.
- Examination and initial evaluation of the injured sportsman.
- Planning and design of the physical-sport rehabilitation program.
- Carrying out of the retraining plan.
- Selection of the routines in collaboration with the medical-therapeutical team.
- Control and monitoring of the injury's progress throughout the recovery time and after the sportsman's back to training and competition.
- Collaboration in the decision-making strategy for the certificate of discharge.
- Training and advising the medical-therapeutical and technical-sport team in terms of physical rehabilitation of the sportsman.

For all of this and considering the importance of the physical rehab therapist, this research analyze the professional situation of graduates in Physical Activity and Sports Sciences in this job role. The specific objectives with regard to the people universe who carry out physical activity and sports job roles in la Region of

Valencia are:

- To know the sociodemographic situation of those graduates in Physical Activity and Sports Science who work in physical rehabilitation.
- To determine the employment status of those graduates in Physical Activity and Sports Science who work in physical rehabilitation.
- To set the educational status of those graduates in Physical Activity and Sports Science who work in physical rehabilitation.

METHODS

The methodology carried out has been quantitative and of descriptive type. (Alvira, 2004). The procedures followed throughout its development are the standard for a survey (Cea, 1998), applied to a sample of people who work in physical activity and sports functions in Region of Valencia. The survey has been carried out by interviewing every chosen subject at the sport faculties. The interview was personal and standardized by a questionnaire.

In order to set the subject of enquiry universe, the number of people who carry out the physical activity and sports job role, we have followed the essay by Martínez del Castillo (1992) on projection of the physical activity and sports labour market, due to, as Heinemann (1998) and Madella (2003) explain, jobs within this labour market are not statistically gathered in a specific way and therefore it is hard to know its quantifying, so they have to be deduced by calculation and statistics. We obtained a universe of 10.000 people who carry out the physical activity and sports job role in Region of Valencia.

Participants

The sample size was 600 people who carry out the physical activity and sports job role in Region of Valencia. With a population of 10.000 people, a confidence interval of 95,5% and estimating for the population variance that the most unfavourable case scenario for $p=50\%$, then $q=50\%$, the margin of error of the sample is +4%.

The allocation of the sample was proportional to people distribution depending on the demographic size of municipalities and their geographic location.

Moreover, we also carried out different subsamples with the objective of intermingling the sample so this influenced positively in the estimates precision (Sierra, 2001). We used a probabilistic cluster sampling of multi-phased type, stratified in first phase (Bryman, 2004; Fink, 1995), in which first stage units are those provinces where people regularly live. These stages are presented in the following order: region, municipality, sports faculty where the subject of study was located, interviewed and identified.

Of the total of people who carry out the physical activity and sports job role in Region of Valencia (sample of this research), 15,9% are graduates in Physical Activity and Sports Science who carry out the physical activity and sports job role, which is the qualified population described in this study and whose sociodemographic features (gender and age) are: 65,4% men and 34,1% women; 59,3% are under the age of 35, 26,4% are between the ages of 35 and 44 and 14,3% are over the age of 44.

Instrument

According to García Ferrando (2002), once the objectives have been set, we drew up and validated the instrument used to collect the information, which was a speaking interview, individual and standardized by means of a questionnaire consist of close-ended and categorised questions (Bryman, 2004; Fink, 1995).

To gather the necessary information for the aims of study, we decided to use the "Questionnaire on the professional situation of physical activity and sports professionals" (Campos Izquierdo, 2003) to measure the selection process of those people and any other related variables; a questionnaire already validated in previous studies on physical activity and sports human resources (Campos Izquierdo, 2000; 2001).

In relation to the psychometric features of this instrument, the degree of effectiveness has been laid down by the experts opinion, consolidated in the bibliography and other criteria from the instrument and the tested reliability after verification of the narrowness of variation of the observations gathered through the different uses of the instrument. In this sense, with regard to content validity, we carried out a number of phases, according to authors such as Alvira (2004) and Cea (2001), who determine that this instrument is reliable and valid: In the first place, in the design phase of the questionnaire and due to no questionnaire which contained all the objectives of this study was found throughout the bibliographic revision, we used different ones among which we picked those variables which better fit with the research objectives, taking some questions, some of them without any modification, other adapted, and the rest of them drawn up during the process. Among the different questionnaires, we used as a point of reference (as they fit better with the objectives of this study) those by Martínez del Castillo (1991), Puig and Viñas (2001) and Rivadeneyra (2000).

Moreover, we organised discussion groups, according to Ortí guidelines (2002), as they provide valuable information to draw up and verificate the questionnaires (Madella, 2003). Then, we determined the dimensions and variables and carried out a selection process, the drawing up and the organization of the questionnaire questions and their possible answers. This first design phase of the instrument resulted in the stadardized interview by means of the initial questionnaire which, after carrying out its verification through the experts criteria and the pilot study and its subsequent improvements depending on the results obtained, laid down

the standardized interview by means of the definitive questionnaire. With regard to the experts criteria, the questionnaire was evaluated by ten specialists external to the research team who positively rated the instrument. In the pretest, the instrument was given out to fifty people belonging to the studied universe, this quantity is within the margins described by Alvira (2004), García Ferrando (2002) and Sierra (2001).

Likewise, this data collection instrument has a consistency reliability, which gives it stability as it has been subsequently used in researches such as those by González Rivera (2008) and Martínez (2007).

Procedures

The research has been of transverse type (Cea, 2001), and the whole process phase of data collection (location, identification and contacting people, the interview, the information record and the information collection) was carried out by only one interviewer in order to get a better reliability and validity of the study (García Ferrando, 2002). The 600 interviews were carried out personally and individually to each one of the subjects at the sports faculties (Bryman, 2004) and lasted about fifteen minutes.

The data analysis were carried out, after being computationally tabulated and typed out. An univariate and bivariate descriptive analysis has been carried out as well as an inferential analysis by means of contingency tables which include the Pearson's chi-square value and its meaning, as well as the Phi correlation coefficient. All of this using the SSPS software package for WINDOWS (V 14.0).

RESULTS

To provide a context for the results analysis, it must be highlighted that among those graduates in Physical Activity and Sports Science who carry out the physical activity and sports job role, those who hold the physical rehabilitation function by means of physical exercise or activities are the 12,1%.

Equally, all graduates in Physical Activity and Sports Science who hold the physical rehabilitation by means of physical exercise or activities function combine this with other physical activity and sports labour functions, being care and maintenance of physical condition in groups, personal training and direction and organization of physical activity and sports the prevailing functions.

Among the physical activity and sports functions wanted but no carried out by graduates in Physical Activity and Sports Science, the third most wanted is physical-sport rehabilitation.

In relation to the sociodemographic features of the graduates in Physical Activity and Sports Science who work as a physical rehab therapist it is revealed that

most of them (81,8%) are men while only 18,2% are women. Likewise, most of these graduates are very young as 54,5% are under the age of 30 and 45,5% are between the ages of 30 and 44 (see table 1).

Table 1. Sociodemographic profile percentages

Gender	Percentage	Age	Percentage
Men	81,8%	Under the age of 30	54,5%
Women	18,2%	Between 30 and 44	45,5%

By linking gender and age we obtain a greater youth rate for men than women, as most of the men (55,6%) are under the age of 30 and 44,4% are between the ages of 30 and 44, while women under the age of 30 are 50% same as between the ages of 30 and 44. According to this link between gender and age we obtain a low relation ($\Phi=0,180$) and no significant ($\text{Chi-square}_2=0,356$; $p=0,837$) (see table 2).

Table 2. Percentages by linking gender and age*

Gender / Age	Under the age of 30	Between the ages of 30 and 44
Men	55,6%	44,4%
Women	50%	50%

*Low relation ($\Phi=0,180$) and no significant ($\text{Chi-square}_2=0,356$; $p=0,837$)

The reference to types of labour relations of those graduates in Physical Activity and Sport Sciences who work as a physical rehab therapist reveals that for 7,1% of labour relations there is no contract whatsoever and 28,6% of labour relations are of self-employment type (see table 3).

Table 3. Percentages of the different labour relations typologies.

Labour relations	Percentage
Contract	64,3%
Self-employed	28,6%
No contract	7,1%

If one relates labour relation type and age it is revealed that those graduates in Physical Activity and Sports Sciences who carry out this job role and have no contract are all under the age of 30, and also that the percentage of self-employed graduates between those who are under 30 and those who are over 30 is fair. By this link we obtain a considerable relation ($\Phi=0,503$) but no significant ($\text{Chi-square}_4=3,539$; $p=0,472$) (see table 4).

Table 4. Percentages by linking labour relation type and age*

Labour relation / Age	Under the age of 30	Between the ages of 30 and 44
Contract	55,6%	44,4%
Self-employed	50%	50%
No contract	100%	0%

* Considerable relation ($\Phi=0,503$) but no significant ($\text{Chi-square}_4=3,539$; $p=0,472$)

By linking labour relation type and gender, it is revealed that all graduates in Physical Activity and Sports Sciences who work in this function and are self-employed or do not have a contract are women. By this relation we obtain a considerable moderate relation ($\Phi=0,304$) but no significant ($\text{Chi-square}_2=1,296$; $p=0,523$) (see table 5).

Table 5. Percentages by linking labour relation type and gender*

Labour relation / Gender		
Contract	77,8%	22,2%
Self-employed	100%	0%
No Contract	100%	0%

* moderate relation ($\Phi=0,304$) but no significant ($\text{Chi-square}_2=1,296$; $p=0,523$)

Likewise, the type of contract of those graduates who work as a physical rehab therapist is mainly of permanent employment type (67%) (see table 6).

Table 6. Type of procurement percentages

Type of procurement	Percentage
Permanent contract	67%
Temporary contract	33%

Most of the contracts of these graduates who work as a physical rehab therapist are full-time (66,7%), while part-time contracts are 33,3%

By analysing the entities for which those graduates in Physical Activity and Sports Sciences work as a physical rehab therapist we obtain that these are different. Among these entities, private companies are the majority as they are 85,8%, followed by sports associations and federations and public bodies (mainly town-councils) which are about 7%. (see table 7)

Table 7. Entities percentages

Entity	Percentage
Company	85,8%
Sports associations or federations	7,2%
Public bodies	7%

By linking entity type and age we obtain that graduates in Physical Activity and Sports Sciences who carry out this job role and work for associations are all under the age of 30 while those who work for public bodies are between the ages of 30 and 44. By this relation we obtain a considerable relation ($\Phi=0,580$) but no significant ($\text{Chi-square}_6=4,709$; $p=0,582$) (see table 8).

Table 8. Percentages by linking entity type and age*

Entity / Age	Under the age of 30	Between the ages of 30 and 44
Company	63,6%	36,4%
Sports associations or federations	100%	0%
Public bodies	0%	100%

*considerable relation ($\Phi=0,580$) but no significant ($\text{Chi-square}_6=4,709$; $p=0,582$)

Equally, by linking type of entity and gender we obtain that graduates in Physical Activity and Sports Science who work in this function and work for associations are all men, while those who work for public bodies are all women. By this relation we obtain a considerable relation ($\Phi=0,685$) but no significant ($\text{Chi-square}=6,576$; $p=0,087$) (see table 9).

Table 9. Percentages by linking type of entity and gender*

Entity / Gender	Men	Women
Company	91,7%	8,3%
Sports associations or federations	100%	0%
Public Bodies	0%	100%

*considerable relation ($\Phi=0,685$) but no significant ($\text{Chi-square}=6,576$; $p=0,087$)

Also, the labour relations length with the entities for which they work is short as 71,4% of these graduates who work as a physical rehab therapist have been working less than 4 years for such entity and 28,6% of them between 4 and 10 years.

Most of the graduates in Physical Activity and Sports Science who work as a physical rehab therapist (63,6%) finished their degree less than 6 years ago. With regard to the specific university curricula that they have studied throughout their degree, most of them have studied some specific curricula and among these, sports training or performance have been the most frequent one.

Most of those graduates in Physical Activity and Sports Science (63,6%) consider that the education received has been appropriate and it has helped them to carry out properly the physical-sport rehabilitation by means of physical activity and sports job role that they have carried out

A high percentage (91%) of these graduates who work as a physical-sport rehab therapist have other degrees in physical activity and sports which shows the plurality of their academic education.

The 54,5% of graduates who work as a physical-sport rehab therapist have become members of the Colegio Oficial de Licenciados en Educación Física y en Ciencias de la Actividad Física y del Deporte (Official College of Graduates in Physical Education and Physical Activity and Sports Sciences).

By analysing the carrying out of different models of constant education related to sports in the last four years from those graduates in Physical Activity and Sports Sciences who work in this labour function, we obtain that those who have carried out educational courses are 90,9%. Equally, those who have attended to conferences and lectures represent the majority (90,9%) and those who have studied courses and attended to conferences or lectures are also a majority (81,8%).

By linking training courses and lectures and age we obtain that those graduates

who work as a physical-sport rehab therapist represent similar percentages of constant education in relation to those under and over 30 (about 80%). In this relation we obtain a low relation ($\Phi=0,180$) and no significant ($\text{Chi-square}_2=0,356$; $p=0,837$) (see table 10).

Table 10. Percentages by relating courses training and lectures and age*

Courses training and lectures / Age	Courses training	No courses training
Under 30	83,3%	16,7%
Between 30 and 44	80%	20%

*Low relation ($\Phi=0,180$) and no significant ($\text{Chi-square}_2=0,356$; $p=0,837$)

Likewise, by relating training courses and lectures carrying out and age we obtain that all of the female graduates in Physical Activity and Sports Science who carry out this job role attend to training courses and lectures while only 77,7% of men do. In this relation we obtain a low relation ($\Phi=0,222$) and no significant ($\text{Chi-square}_1=0,543$; $p=0,461$) (see table 11).

Table 11. Percentages by relating training courses and lectures carrying out and gender*

Training courses and lectures carrying out / Age	Courses and lectures	No Courses and lectures
Men	77,70%	22,30%
Women	100,00%	0,00%

*Low relation ($\Phi=0,222$) and no significant ($\text{Chi-square}_1=0,543$; $p=0,461$)

DISCUSSION

The percentage of graduates in Physical Activity and Sports Sciences who carry out the physical-sport rehabilitation by means of physical activity and sports job role is way much greater than the 4% obtained by Martínez del Castillo (1991), the 1,2% reached by Rivadeneyra (1998) and the 1% by Campos Izquierdo (2003), so it can be noticed as an increasing professional field which generates employment for these graduates (Alonso & Peralta, 2000; Campos Izquierdo, Lalín & González, 2010; García & Martín, 2002; Lalín, 2008; Maturuna Dos Santos, 1999).

Consequently, subjects and contents related to such professional activity must be included in a significant way in the Physical Activity and Sports Science degree curricula. Likewise, it is important to create official masters and PhD's in relation to physical-sport rehabilitation by means of physical activity and sports.

All graduates in Physical Activity and Sports Science who carry out the physical-sport rehabilitation by means of physical activity and sport job role carry it out simultaneously with other labour functions in physical activity and sports, as it is stated by Martínez del Castillo (1991), Madella (2002), Deans Conference from the Physical Activity and Sports Sciences faculties(2004) and Puig and Viñas (2006).

The most jointly carried out functions are care and maintenance of physical condition in groups, personal training and direction and organization of physical activity and sports, being the latter function due to the fact that the percentage of self-employed people (28,6%) obtained in this study is higher than the 6,3% by Martínez del Castillo (1991) and the 5% by Campos Izquierdo (2003), and due to the general level of physical activity and sports, which also corroborates the opinion of Camy, Chantelat and Le Roux (1999), Campos Izquierdo (2010) and Garrigós (2001) on the increase and importance of self-employment in this labour function. Likewise all of this must be taken into account for the curricula and perspectives of employability of these graduates in this professional activity.

By analysing the sociodemographic profile we obtain that most of the graduates in Physical Activity and Sports Science are men (81,8%) as the percentage of women who carry out the physical-sport rehabilitation by means of physical activity and sports job role is very low (18,1%) and lower than the 30,2% obtained by Martínez del Castillo (1991) and the 43,6% by Puig and Viñas (2006). Consequently it would be interesting to carry out the entrance of women into this labour market.

Likewise, most of the graduates in Physical Activity and Sports Sciences are usually young, under 30 (54,5%), a higher percentage than the 19% determined in Spain by Martínez del Castillo (1991) and the 21,7% by Camy et al. (1999) at European level, which highlights the importance of this labour function in terms of creating youth employment for those graduates in Physical Activity and Sports Sciences.

With regard to labour relations, 7,1% of the relations of those graduates who carry out the physical-sport rehabilitation by means of physical activity and sports job role reveal no type of contract whatsoever, being these all men and under 30, whose percentage is lower than the 16% obtained by Martínez del Castillo (1991), and the 52,5% by González Rivera (2008). Moreover, undeclared working constitutes a common and worrying feature in this professional and labour market (Consejo Superior de Deportes, 2000; Garrigós, 2001; Rebollo & Sánchez, 2000). Likewise, the passivity and complicity of the public bodies and specifically the passivity of the Industrial Relations Commission should be analysed.

Moreover, the recruitment of graduates in Physical Activity and Sports Science who work in this labour function is mainly of permanent type (67% of the contracts) and full-time (66,7%) as it is stated by the Deans Conference from the Physical Activity and Sports Sciences faculties (2004), Puig and Viñas (2006) and Rivadeneyra (1998).

By studying the entities for which those people who carry out the physical-sport rehabilitation by means of physical activity and sports job role work, we obtain that these are different, although they are mainly private companies (84,1%), as

it has been stated by Almeida (2007), Augustin (2003), Petry, Froberg and Madella (2008) and Heinemann (1998).

It must be highlighted that most of the graduates in Physical Activity and Sports Science (63,6%) consider that the education received has been appropriate and it has helped them to carry out properly the physical-sport rehabilitation by means of physical activity and sports job role, as it is stated by Campos Izquierdo, Pablos and Mestre (2006) and Martínez (2007).

With regard to the constant education of those graduates in Physical Activity and Sports Sciences who carry out the physical-sport rehabilitation by means of physical activity and sports job role, most of them (90%) have studied courses or postgraduate courses and have attended to conferences and lectures on physical activity and sports in the last four years, without distinction of gender and age as it is stated by Campos Izquierdo, Pablos and Mestre (2006), González Rivera (2008), Martínez (2007).

CONCLUSIONS

The physical-sport rehabilitation by means of physical activity and sports job role is becoming an increasing professional field which generates new jobs for those graduates in Physical Activity and Sports Sciences. Consequently, specific knowledge, processes, procedures and attitudes about rehabilitating and recovering by means of physical activity and sports must be included in the curricula of both undergraduate and postgraduate levels of those graduates in Physical Activity and Sports Sciences.

The multi-functionality of those graduates in Physical Activity and Sports Sciences who work as a physical-sport rehab therapist is absolute, being personal training, care and maintenance of physical condition in groups, and direction and organization of physical activity and sports their most important tasks. The latter is mainly caused by the trend towards self-employment and self-organization in this job role.

With regard to the sociodemographic profile of those graduates in Physical Activity and Sports Sciences who carry out the physical-sport rehabilitation by means of physical activity and sports job role, most of them are under 30.

Most of those graduates in Physical Activity and Sports Sciences who work as a physical-sport rehab therapist have a permanent and full-time contract. Although self-employed ones also represent a significant percentage.

The entities for which graduates in Physical Activity and Sports Sciences who carry out the physical-sport rehabilitation by means of physical activity and sports job role work are different, although they are mainly private companies and

whithin these, they are usually men under the age of 30.

Most of the graduates in Physical Activity and Sports Sciences consider that the education received has been appropriate and it has helped them to carry out properly the physical-sport rehabilitation by means of physical activity and sports job role that they have carried out.

Most of the graduates in Physical Activity and Sports Sciences without distinction of gender and age, who carry out the physical-sport rehabilitation by means of physical activity and sports job role have studied courses and have attended to lectures and conferences on physical activity and sports in the last four years.

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