## Spanish journals in sport sciences indexed in «Latindex Catalogue»

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Resumen: Este artículo analiza las revistas españolas de Ciencias del Deporte que recoge el Catálogo Latindex. Se examinan las principales características editoriales de dichas publicaciones, el contenido que ofrecen en Internet y la evolución de la presencia de las revistas españolas en el Catálogo desde 2004. También se analiza el cumplimiento de siete indicadores básicos para valorar la calidad editorial de las publicaciones, seleccionados de entre los criterios del Sistema Latindex. Los datos obtenidos permiten trazar un panorama de la situación de estas revistas en España, destacando la mejora producida durante los últimos años en su normalización, indización en bases de datos y adaptación a la edición electrónica.

**Palabras clave**: Publicaciones periódicas. Estudios de evaluación. Deporte. Educación Física. España.

**Abstract**: This article analyses Spanish Sports Science journals included in the Latindex Catalogue. Specifically, editorial features of these publications, on-line content and evolution of Spanish journals since 2004 are examined. In order to assess the editorial quality of those journals, we also considered the fulfilment of seven basic indicators within the criteria provided by Latindex. The data obtained provide a scenario of Spanish journals, emphasizing an improvement in their normalization, indexation and adaptability to electronic edition in last years.

**Keywords**: Periodicals. Evaluation. Studies. Sport. Physical education. Spain.

## 1 INTRODUCTION

Scientific journals are communication tools that investigators routinely use both to disseminate their work and to know the work of their colleagues. Journals thus reflect the activity performed in different areas of knowledge and may be used as an indicator of the scientific development of a discipline or science and technology system of a country.

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Although this communicative function of journals is well defined in the cycle of science, publishing features such publications have been changing at a rapid pace recently, mostly due to technological advances and the variety of available bibliographic support (PESET; FERRER-SAPENA; BAIGET, 2008). Furthermore, in the Spanish context of sports science, journals have been transformed by the increase of scientific production as a result of the normalization of its academic community in the university system as of 1990. Another factor that has boosted Spanish journals, including sports science journals, has been the institutional assessment of the research, which uses the contributions in such publications as one of the main indicators of merit of the researchers.

This value added to the role performed by journals in the publishing system has attracted the interest in the situation of periodical publications that was, until recently, unheard of in Spain. Both publishers and authors themselves worry about knowing the characteristics of the different publications and position in relation to each other, the former aiming to set up ways for improvement and the latter aiming to choose the destination of their work. A similar interest is detected in other countries such as Brazil, perhaps because of its extensive experience and tradition in the evaluation of scientific journals, which have also begun to publish studies on the journals of the field of Physical Education (JOB, 2007; FERREIRA NETO; NASCIMENTO, 2002).

Data from earlier studies and assessments of the overall quality of Spanish sports science journals come from this decade (DEVÍS; ANTOLÍN VILLAMÓN; MORENO, VALENCIANO, 2003; DEVÍS; VILLAMÓN; ANTOLÍN; VALENCIANO, MORENO, 2004; VILLAMÓN; DEVÍS; VALENCIANO, 2005; VILLAMÓN; DEVÍS; VALENCIANO, 2006). In them, although the various aspects that shape the quality of a scientific journal were addressed, formal characteristics have been particularly highlighted, as they indicate the quality of content and a are pre-requisite to be evaluated and selected for inclusion in international indexes and databases (DB), and, as pointed out by Ferreira Neto and Nascimento (2002), because formal aspects are easier to modify in a journal. More recently, we studied the characteristics and distribution of this group of publications (VILLAMÓN; DEVÍS; VALENCIA; VALENCIANO, 2007) and compared, assessed and classified (VALENCIANO; DEVÍS; VILLAMÓN, 2008; VALENCIANO, VILLAMÓN, DEVÍS, 2008). However, given the rapid changes and amendments made in the edits of journals for the reasons discussed above, it is advisable to update the outlook of journals in the work described above.

To analyze the current situation of Spanish sports science journals, we started based on a highly representative group, the journals included in the Latindex Catalog<sup>1</sup>. The selection of journals in the Catalog was made pursuant to the implementation of a series of editorial quality criteria met by each of them. The Latindex System was created by a group of scientists and information professionals, concerned about the low international visibility of journals from Latin American countries, with the main objective of providing these journals with a greater international presence and diffusion. Although it results in a distribution of journals, including meeting those that meet the requirements and those that do not, the Catalog is not intended as an evaluation system, but as a tool for understanding the situation of journals and promoting editorial quality in all disciplines of knowledge (ALONSO; CETTO, 2003; ROMÁN; VÁZQUEZ; URDÍN, 2002).

This study aims to present the situation of Spanish sports science journals in the Latindex Catalog, through analysis of its main editorial features: time course, publisher and place of publication, periodicity, DB visibility and current adaptation to new technologies (electronic publishing, dual digital-paper edition, full text in PDF format, availability of articles, summaries, etc.).. It also examines the presence of Spanish sports science journals in the Catalog since 2004 and, finally, it analyzes the performance of seven key indicators for assessing the quality of journals, selected from the editorial quality criteria established by the Latindex System.

#### 2 METHODOLOGY

We delimited the journals under study based on the Latindex Catalog, which has, since 2002, provided a selection of relevant publications, from the scientific and technical standpoint in all areas of knowledge in Spain, Portugal, Latin America, and the Caribbean. The search was initiated through the fields contained in the catalog. First, we picked the topic "Sports" (subset of the Social Sciences area) and obtained a total 38 titles. We examined them one by one and identified 17 Spanish journals. Following that, we conducted another search by "Title", entering the name of 20 Spanish journals that were not found in the first search and were included in the inventory made by Devís et al. (2003) or subsequent updates (VALENCIANO et al., 2008; VILLAMÓN et al., 2005; VILLAMÓN et al., 2007), or, in some cases, were known by the research team. It

<sup>&</sup>lt;sup>1</sup> Available at: <a href="http://www.latindex.org">http://www.latindex.org</a>>. Retrieved: April 2, 2009.

was noted then that some journals are not included under "Sports", but are scattered in other areas such as "Education" or "Psychology". In this second search, we retrieved 3 journals, in a total of 20 titles found. Finally, the study sample was reduced to 19 journals; one journal was excluded since its record was closed.

In the first part of the study, we analyzed the main editorial features of the journals identified (age, periodicity, publisher and visibility). To this end, we assessed the Latindex records of each of the 19 journals, which were also checked and completed by direct consultation of the copies of the journals and their websites. These precautions are due to the desire to offer more information adjusted to reality, considering the considerable difference observed between the information on the DB in the Latindex and the information presented in the journals themselves. On the other hand, by comparing the DB and other indices, we discarded information services whose coverage is too comprehensive and/or poorly selective, generally not adding a discrimination factor to the journals. In particular, we did not include information on Rebiun, Dialnet, Universia SportDoc the ISSN database, Ulrich's Directory, and the documentary network SportDoc, which produced the database Heracles and the directory Argo, as it ceased operations in June 2005.

Although the database DICE, made by the National Scientific Research Council, has been included, we should make a clarification on it. The information relating to this DB has caused confusion among the academic community as journals of questionable quality are contained therein. Above all, another contribution to this confusion is the fact that many journals of questionable quality have announced that the articles published therein have been rated positively by the National Agency for Quality Assessment and Accreditation (ANECA) for teacher evaluation. DICE also points it out more precisely, by reporting that the ANECA uses this database as a reference for the quality of Spanish publications in its faculty evaluation processes. However, it should be noted that DICE is a comprehensive, non-selective platform, aiming to provide knowledge and research with some of the editorial features of Spanish journals, so that evaluators have information from all publications that may appear in the curricula submitted to the ANECA. That is, DICE may be a useful tool for knowing the specifics of the journals, yet the fact that a journal is covered by DICE is not a sign of quality, and it does not necessarily mean that an article published in it should be considered positively by evaluators.

The second part of the study is analyzes the journals included in the Catalog in order to track trends and identify the weaknesses of that group of publications. To this end, we selected seven indicators from the editorial quality criteria applied by the Latindex System, which were checked in the files of each journal in the Catalog. The indicators selected relate to the classic dimensions of quality of scientific journals (standardization, quality of content, and diffusion).

The collection of information and research involving all methodological procedures described were performed in the first fortnight of April 2009.

## **3 RESULTS**

This section first describes major editorial features and the visibility of Spanish sports science journals in the Latindex Catalog. Second, it examines the compliance of the journals with some indicators of the evaluation model of the Catalogue.

# 3.1 EDITORIAL FEATURES AND VISIBILITY OF THE JOURNALS

Table 1 shows the 19 Spanish Sports Science journals included Latindex included in the catalog. Each title includes attached its ISSN, start year, publisher, place of publication and periodicity.

Table 1. Spanish Sports Science journals included in the Latindex Catalog.

| Title                                                             | Start<br>year | Publisher – City –Periodicity                                                                                                                                                                    |
|-------------------------------------------------------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ágora para la educación física y el<br>deporte<br>ISSN: 1578-2174 | 2001          | Publisher: Foro para la Educación Física, la Actividad Física Recreativa y el Deporte de Castilla y León. Valor Educativo de la Motricidad <u>City:</u> Valladolid <u>Periodicity:</u> Triannual |
| Apunts. Educación Física y Deportes ISSN: 1577-4015               | 1985          | Publisher: INEFC/Generalitat de Catalunya City: Barcelona Periodicity: Quarterly                                                                                                                 |
| Archivos de Medicina del Deporte<br>ISSN: 0212-8799               | 1984          | Publisher: Federación Española de Medicina del Deporte (FEMEDE City: Pamplona Periodicity: Bimonthly                                                                                             |
| Cuadernos de Psicología del Deporte ISSN: 1578-8423               | 2001          | Publisher: F. de Psicología, Universidad de Murcia/Dirección Gral. de Deportes de la CARM <u>City:</u> Murcia <u>Periodicity:</u> Semiannual                                                     |
| Cultura, Ciencia y Deporte<br>ISSN: 1696-5043                     | 2004          | Publisher: Universidad Católica San Antonio City: Murcia Periodicity: Semiannual                                                                                                                 |
| Habilidad Motriz<br>ISSN: 1132-2462                               | 1992          | Publisher: Colegio de Licenciados en E.F. y en CCAFD de Andalucía City: Córdoba Periodicity: Semiannual                                                                                          |
| Journal of Human Sport and Exercise ISSN: 1988-5202               | 2006          | <u>Publisher:</u> Grupo de Investigación en Ciencias de la Actividad<br>Física y el Deporte                                                                                                      |

|                                       | l       | C'ess Alisants                                                     |  |  |  |  |  |
|---------------------------------------|---------|--------------------------------------------------------------------|--|--|--|--|--|
|                                       |         | City: Alicante                                                     |  |  |  |  |  |
|                                       |         | Periodicity: Semiannual                                            |  |  |  |  |  |
| Kronos                                | • • • • | Publisher: Universidad Europea de Madrid                           |  |  |  |  |  |
| ISSN: 1579-5225                       | 2002    | City: Madrid                                                       |  |  |  |  |  |
|                                       |         | Periodicity: Semiannual                                            |  |  |  |  |  |
| Materiales para la Historia del       |         | Publisher: Wanceulen                                               |  |  |  |  |  |
| Deporte                               | 2007    | <u>City:</u> Sevilla                                               |  |  |  |  |  |
| ISSN: 1887-9586                       |         | Periodicity: Annual                                                |  |  |  |  |  |
| Motricidad. European Journal of       |         | Publisher: Asociación Española de Ciencias del Deporte             |  |  |  |  |  |
| Human Movement                        | 1995    | City: Cáceres                                                      |  |  |  |  |  |
| ISSN: 0214-0071                       |         | Periodicity: Semiannual                                            |  |  |  |  |  |
|                                       |         | Publisher: Federación Española de Asociaciones de Docentes de      |  |  |  |  |  |
| Retos                                 | 2002    | E.F.                                                               |  |  |  |  |  |
| ISSN: 1579-1726                       | 2002    | City: Murcia                                                       |  |  |  |  |  |
|                                       |         | Periodicity: Semiannual                                            |  |  |  |  |  |
|                                       |         | Publisher: Universitat de les Illes Balears y Universitat Autònoma |  |  |  |  |  |
| Revista de Psicología del Deporte     | 1000    | de Barcelona                                                       |  |  |  |  |  |
| ISSN: 1132-239X                       | 1992    | City: Palma de Mallorca                                            |  |  |  |  |  |
|                                       |         | Periodicity: Semiannual                                            |  |  |  |  |  |
| Revista Española de Educación Física  |         | Publisher: CGICO de Licenciados en E. F. y en CCAFD                |  |  |  |  |  |
| y Deportes                            | 2004    | City: Madrid                                                       |  |  |  |  |  |
| ISSN: 1133-6366                       | 200.    | Periodicity: Semiannual                                            |  |  |  |  |  |
| Revista Iberoamericana de Psicología  |         | Publisher: Wanceulen                                               |  |  |  |  |  |
| del Ejercicio y del Deporte           | 2006    | City: Sevilla                                                      |  |  |  |  |  |
| ISSN: 1886-8576                       |         | Periodicity: Semiannual                                            |  |  |  |  |  |
|                                       |         | Publisher: Asociación Madrileña de Derecho y Gestión del           |  |  |  |  |  |
| Revista Internacional de Derecho y    |         | Deporte                                                            |  |  |  |  |  |
| Gestión del Deporte                   | 2008    | City: Madrid                                                       |  |  |  |  |  |
| ISSN: 1989-256X                       |         | Periodicity: Quarterly                                             |  |  |  |  |  |
| Revista Internacional de Ciencias del |         | Publisher: Ramón Cantó Alcaraz                                     |  |  |  |  |  |
| Deporte. RICYDE                       | 2005    | City: Madrid                                                       |  |  |  |  |  |
| ISSN: 1885-3137                       | 2003    | Periodicity: Quarterly                                             |  |  |  |  |  |
| Revista Internacional de Medicina y   |         | Publisher: C. V. CC. Deporte (Red IRIS) y Universidad              |  |  |  |  |  |
| Ciencias de la Actividad Física y del |         | Autónoma de Madrid / Vicente Martínez de Haro                      |  |  |  |  |  |
| Deporte                               | 2000    | City: Madrid                                                       |  |  |  |  |  |
| ISSN: 1577-0354                       |         | Periodicity: Quarterly                                             |  |  |  |  |  |
| Tándem. Didáctica de la Educación     |         | Publisher: Editorial Graó                                          |  |  |  |  |  |
| Física                                |         | City: Barcelona                                                    |  |  |  |  |  |
| ISSN: 1577-0834                       | 2000    | Periodicity: Triannual                                             |  |  |  |  |  |
| The International Journal of Medicine |         | Publisher: Asociación Didáctica Andalucia                          |  |  |  |  |  |
| and Science in Physical Education     |         | City: Jaén                                                         |  |  |  |  |  |
| _                                     | 2005    |                                                                    |  |  |  |  |  |
| and Sport                             |         | Periodicity: Quarterly                                             |  |  |  |  |  |
| ISSN: 1989-1245                       |         |                                                                    |  |  |  |  |  |

The age of the publications reveals that only two journals began their activity before the 1990s. Although the journal of the official college of Physical Activity and Sports Science graduates "Revista Española de Educación Física y Deportes" was founded in 1949, it has gone through several stages and interruptions and, for the purposes of this work, 2004 was considered as the start date of its current stage. Another three journals were created prior to 2000. The remaining 14 journals were created after 2000. Two of them are emerging as they have less than three years old.

Of the 19 journals analyzed, we observe that 9 publications (47.4%) are published by associations, scientific societies and professional organizations, 6 journals (31.6%) are published by universities and public institutions, and the other 4 titles (21.0%) by private publishers.

Regarding the place of publication, we found a remarkable concentration of publishing activity in Madrid, with 5 journals published. Another highlight is Murcia, with 3 journals published, which does not correspond to its size or population, and Barcelona and Seville with 2 each.

With respect to periodicity, we observe that only one journal (5.3%) is bimonthly and one is annual, two (10.5%) are triannual, five journals (26.3%) are quarterly, and 10 (52, 6%) are semiannual.

One aspect of key periodical publications for information dissemination and diffusion is the visibility through the Internet and indexing in databases, preferably among journals internationally certified for their quality. This information is presented in Table 2, which details, for each journal, the level of Internet presence and the DB and other interest indices where they are included.

Table 2. Internet and DB visibility of Spanish Sports Science journals included in the Latindex Catalog.

| Title and URL                                                                                                                           | Internet Content                                                                               | DB and other indices(*)  -  SIRC/SportDiscus; Qualis (B4); ISOC; IN-RECS; DICE; RESH                                                                            |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| Ágora para la educación física y el deporte<br>http://dialnet.unirioja.es/servlet/revista?tipo_busqueda=CODI<br>GO&clave_revista=8668   | All articles in PDF format though Dialnet                                                      |                                                                                                                                                                 |  |  |  |
| Apunts. Educación Física y Deportes<br>http://www.revista-apunts.com/index.php?id_pagina=25                                             | Summaries, abstracts and<br>articles in PDF format<br>Restriction on the five latest<br>issues |                                                                                                                                                                 |  |  |  |
| Archivos de Medicina del Deporte<br>http://www.femede.es/page.php?/Publicaciones/RevistaAMD<br>http://www.femede.es/revista/deporte.asp | Summaries and abstracts of some editions No updates                                            | Embase/Excerpta Médica;<br>SIRC/SportDiscus; Qualis<br>(B1); IME; IBECS                                                                                         |  |  |  |
| Cuadernos de Psicología del Deporte<br>http://psicodeporte.net/cuadernos.aspx                                                           | Full version in PDF format<br>Free access                                                      | Ebsco; ISOC-Psicología; IN-<br>RECS; DICE; Psicodoc;<br>IBECS; Océano; Psicodeporte                                                                             |  |  |  |
| Cultura, Ciencia y Deporte<br>http://www.ucam.edu/ccd/index.htm                                                                         | Full version in PDF format<br>Free access                                                      | Qualis (B4); ISOC; DICE; IN-<br>RECS                                                                                                                            |  |  |  |
| Habilidad Motriz<br>http://www.colefandalucia.com/login.aspx?ReturnUrl=%2fin<br>dex.aspx%3fid%3d100&id=100                              | None                                                                                           | IN-RECS; DICE; RESH                                                                                                                                             |  |  |  |
| Journal of Human Sport and Exercise http://www.jhse.ua.es/index.php/jhse                                                                | E-journal                                                                                      | DOAJ; Google Scholar; Index<br>Copernicus; Scientific<br>Commons; O Alster; DICE;<br>Recolecta                                                                  |  |  |  |
| Kronos<br>http://www.revistakronos.com/kronos                                                                                           | Electronic version<br>No updates                                                               | DICE                                                                                                                                                            |  |  |  |
| Materiales para la Historia del Deporte<br>http://www.wanceulen.com/index.php                                                           | Nome                                                                                           | DICE                                                                                                                                                            |  |  |  |
| Motricidad. European Journal of Human Movement http://www.cienciadeporte.com/revista.html                                               | Summaries and articles<br>Restriction on the two latest<br>issues                              | ISOC; DICE                                                                                                                                                      |  |  |  |
| Retos<br>http://www.retos.org                                                                                                           | Full version in PDF format<br>Free access                                                      | ISOC; IN-RECS; DICE                                                                                                                                             |  |  |  |
| Revista de Psicología del Deporte<br>http://www.rpd-online.com                                                                          | Electronic version<br>Restriction on the two latest<br>issues                                  | ISI WoS (Thomson-Reuters);<br>Scopus; PsycINFO; Ebsco;<br>SIRC/SportDiscus; SciELO;<br>Qualis (B4); ISOC-Psicología;<br>IBECS; Psicodoc; IN-RECS;<br>DICE; RESH |  |  |  |
| Revista Española de Educación Física y Deportes<br>http://www.consejo-colef.es                                                          | Full version in PDF format<br>Restriction on the two latest<br>issues                          | IN-RECS; DICE; RESH                                                                                                                                             |  |  |  |

| Revista Iberoamericana de Psicología del ejercicio y del deporte http://www.webs.ulpgc.es/riped                               | Summaries                                         | ISOC; IN-RECS                                                                                                                                                                           |  |  |
|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| International Journal of Sports Law and Management www.amdeged.es/revista                                                     | E-journal                                         | DICE                                                                                                                                                                                    |  |  |
| International Journal of Sports Science, RICYDE http://www.cafyd.com/REVISTA/ojs/index.php/ricyde                             | E-journal                                         | PsycINFO; SIRC/SportDiscus;<br>RedALyC; Ebsco; Qualis<br>(B3); Google Scholar; DOAJ;<br>Journal Info; Public<br>Knowledge Project; Scientific<br>Commons; Socol@r; DICE; e-<br>journals |  |  |
| International Journal of Medicine and Physical Activity and Sports Science<br>http://cdeporte.rediris.es/revista/revista.html | E-journal                                         | ISI WoS (Thomson-Reuters);<br>RedALyC; DOAJ; DICE; e-<br>journals; Revicien                                                                                                             |  |  |
| Tándem. Didáctica de la Educación Física<br>http://tandem.grao.com/revistas/presentacion.asp?ID=11                            | Summaries; articles in PDF format by subscription | ISOC; IN-RECS; DICE;<br>RESH                                                                                                                                                            |  |  |
| The International Journal of Medicine and Science in Physical Education and Sport http://www.ms-pes.com                       | E-journal                                         | IN-RECS; e-journals                                                                                                                                                                     |  |  |

(\*) We excluded distribution services indicated in the methodology. To avoid repetition, we also excluded the Latindex Catalog, in which all journals are indexed, as expressed by the title of the table.

Of the 19 publications studied, only one journal indexed by the Latindex Catalog; 10 publications (52.6%) are indexed by Spanish databases, in addition to the Latindex Catalog, and the remaining 8 journals (44.5%) are indexed by both Spanish and international databases. Altogether, including the Latindex Catalog, 30 databases index one or more journals in this set, with 18 international and 12 national databases. The main highlights, considering their importance, are multidisciplinary databases ISI Web of Science (Thomson-Reuters), which index two journals, and Scopus, which indexes one. Among other international databases, unidisciplinary databases stand out, such as PsycINFO, which indexes two journals, EMBASE/Excerpta Médica, which indexes one journal and SIRC/SportDiscus, specific for the area, indexing four publications, Similarly, albeit due to different reasons, it should be noted that five journals are included in Qualis of Brazil's CAPES and two in Google Scholar.

Particular analysis of each of the journals highlighted the visibility of three publications. One of them is the "Revista de Psicología del Deporte", which is indexed by the two major international databases (ISI Web of Science and Scopus) and both unidisciplinary databases relating to sports psychology (PsycINFO and SportDiscus). Another journal that stands out, especially for its inclusion in the ISI Web of Science, is the "International Journal of Medicine and Physical Activity and Sports Science". Another highlight is the "International Journal of Sports Science, RICYDE", included in many databases and other interest indices.

With respect to the content of journals available on the Internet, it should first be noted that it was difficult to make a categorization, given the variety of situations that arise.

Five of the titles analyzed (26.3%) are exclusively electronic journals: "Journal of Human Sport and Exercise", "International Journal of Sports Law and Management", "International Journal of Sports Science, RICYDE", "International Journal of Medicine and Physical Activity and Sports Science" and "The International Journal of Medicine and Science in Physical Education and Sport."

Four publications (21.0%), "Cuadernos de Psicología del Deporte", "Cultura, Ciencia y Deporte", "Retos" and "Revista Española de Educación Física y Deportes", have dual electronic-paper versions. That is, they offer full content on the Internet, but not as in pure electronic journals, but as documents in PDF format, as well as edited versions in printed form. Of these, the "Revista Española de Educación Física y Deportes" does not allow access to the two latest issues.

Six other journals (31.6%) are published on paper while offering the full text of the articles online: "Ágora para la Educación Física y el Deporte", "Apunts. Educación Física y Deportes", "Kronos", "Motricidad: European Journal of Human Movement", "Revista de Psicología del Deporte" and "Tándem: Didáctica de la Educación Física". However, we should point out some of their particularities. "Ágora para la Educación Física" offers the contents of all articles through the Dialnet resources and documentary services platform, yet it has no website. "Kronos" has not released any issue since 2007. "Tándem" allows access to all numbers but only by subscription. As for the other three publications, they allow free access after a restriction period of between one and two years.

The remaining 4 publications (21.0%) are published on paper. Of these, only the "Revista Iberoamericana de Psicología del Ejercicio y del Deporte" has an updated website which offers free access to summaries and information about the publication. "Archivos de Medicina del Deporte", in turn, may be accessed through two separate websites, but neither is up-to-date, and only Summaries and Abstract of older issues may be accessed. The other two journals, "Habilidad Motriz" and "Materiales para la Historia del Deporte", do not provide any content or information on their publishers' websites.

These data imply that, of the 19 titles analyzed, 14 journals (73.7%) offer free versions on the Internet with the full text of their articles, although four of them included a period of restriction.

#### 3.2 JOURNALS ACCORDING TO THE LATINDEX CATALOG

The number of Spanish sports science journals in the Latindex Catalog has increased significantly over recent years, as seen in Table 3, which shows publications included in the Catalog today and in the years 2004, 2006, and 2007, according to data from previous studies by Devís et al.

Table 3. Spanish Sports Science journals in the Latindex Catalog.

| Journal                                                                           | 2004 | 2006 | 2007 | 2009 |
|-----------------------------------------------------------------------------------|------|------|------|------|
| Ágora para la educación física y el deporte                                       |      |      |      | X    |
| Apunts. Educación Física y Deportes                                               | X    | X    | X    | X    |
| Archivos de medicina del deporte                                                  | X    | X    | X    | X    |
| Cuadernos de Psicología del Deporte                                               |      | X    | X    | X    |
| Cultura, Ciencia y Deporte                                                        |      | X    | X    | X    |
| Habilidad Motriz                                                                  |      |      |      | X    |
| Journal of Human Sport and Exercise                                               |      |      |      | X    |
| Kronos                                                                            |      |      |      | X    |
| Materiales para la Historia del Deporte                                           |      |      |      | X    |
| Motricidad                                                                        |      |      | X    | X    |
| Retos                                                                             |      | X    | X    | X    |
| Revista de psicología del deporte                                                 | X    | X    | X    | X    |
| Revista Española de Educación Física y Deportes                                   |      |      |      | X    |
| Revista iberoamericana de psicología del ejercicio y el deporte                   |      |      |      | X    |
| International journal of sports law and management                                |      |      |      | X    |
| International journal of medicine and physical activity and sports science        |      |      |      | X    |
| RICYDE: International journal of sports science                                   |      |      | X    | X    |
| Selección(*)                                                                      | X    | X    | X    | X    |
| Tándem. Didáctica de la Educación Física                                          |      | X    | X    | X    |
| The International Journal of Medicine and Science in Physical Education and Sport |      |      |      | X    |
| Total                                                                             | 4    | 8    | 10   | 20   |

#### (\*) Journal lost

We observe that, since 2002, the start year of the Catalog, until 2004, only four journals have been included. In the two following years, that figure was doubled and keeps rising in 2007. However, over the last two years, there has been a huge growth in journals indexed, and their figure has doubled.

Although several Spanish periodical publications in the field have disappeared during the period 2000-2009, only one, included in the Latindex Catalog, has ceased activity: "Selección: Revista Española e Iberoamericana de Medicina de la Educación Física y el Deporte". This quarterly journal was first published in Madrid in 1989 and released its last issue in the second quarter of 2007, when it had begun offering free access to articles through the Internet and was indexed by international databases such as Scopus.

As anticipated in the methodology, to determine the status of the journals included in the Catalogue Latindex, we have analyzed the compliance of seven selected indicators from the editorial quality criteria applied by the Latindex System for the selection of journals, the results of which are shown in Table 4.

Table 4. Compliance of indicators by Spanish Sports Science journals in the Latindex.

| Journal                                                                              |   | Compliance with indicators(*) |   |   |   |   |   | Total             |
|--------------------------------------------------------------------------------------|---|-------------------------------|---|---|---|---|---|-------------------|
|                                                                                      |   | 2                             | 3 | 4 | 5 | 6 | 7 | indicators<br>met |
| Agora para la educación física y el deporte                                          | X |                               | X | X |   | X | X | 5                 |
| Apunts. Educación Física y Deportes                                                  | X |                               | X |   | X | X | X | 5                 |
| Archivos de Medicina del Deporte                                                     |   |                               |   | X | X | X | X | 4                 |
| Cuadernos de Psicología del Deporte                                                  | X | X                             |   | X | X | X | X | 6                 |
| Cultura, Ciencia y Deporte                                                           | X | X                             | X |   | X | X | X | 6                 |
| Habilidad Motriz                                                                     |   |                               |   |   |   | X | X | 2                 |
| Journal of Human Sport and Exercise                                                  | X | X                             | X | X | X | X | X | all               |
| Kronos                                                                               | X | X                             | X |   |   | X | X | 5                 |
| Materiales para la Historia del Deporte                                              |   |                               |   |   |   | X | X | 2                 |
| Motricidad                                                                           | X | X                             | X | X | X | X | X | all               |
| Retos                                                                                | X |                               | X |   |   | X | X | 4                 |
| Revista de Psicología del Deporte                                                    | X | X                             |   | X | X | X | X | 6                 |
| Revista Española de Educación Física y Deportes                                      |   |                               |   |   |   | X | X | 2                 |
| Revista Iberoamericana de Psicología del Ejercicio y el Deporte                      | X | X                             | X | X | X | X | X | all               |
| International Journal of Sports Law and Management                                   | X | X                             | X |   |   | X | X | 5                 |
| International Journal of Medicine and Physical Activity and Sports Science           | X | X                             | X | X | X | X | X | all               |
| RICYDE: International Journal of Sports Science                                      | X | X                             | X | X | X | X | X | all               |
| Tándem. Didáctica de la Educación Física                                             | X |                               |   | X | X | X | X | 5                 |
| The International Journal of Medicine and Science in<br>Physical Education and Sport | X |                               | X | X |   | X | X | 5                 |
| Número de casos en que el indicador no se cumple                                     | 4 | 9                             | 7 | 8 | 8 | 0 | 0 |                   |

<sup>(\*)</sup> Indicators: 1) Institutional affiliation of the editorial council members; 2) Reception and acceptance of the manuscripts; 3) External reviewers; 4) Editorial opening; 5) Information services (DB); 6) Abstract in two languages; 7) Keywords in two languages.

We observe that the indicator less met by the journals is the "Reception and acceptance of manuscripts", with 9 publications (47.4%) not including this information. This is followed by the "Editorial opening" and inclusion in "Information services", which are not met in 8 cases (42.1%), and the use of "External reviewers", not met by 7 journals (36.8%). By contrast, the criteria for increased compliance are the inclusion of the abstract and key words in two languages, which are inserted in all the journals.

With respect to the journals, we observe that 5 publications (26.3%) meet all indicators indexed by the Latindex Catalog: "Journal of Human Sport and Exercise", "Motricidad", Revista Iberoamericana de Psicología del Ejercicio y del Deporte", "International Journal of Medicine and Physical Activity and Sports Science" and "International Journal of Sports Science, RICYDE". Other 3 journals (15.8%) met all criteria except one. "Cuadernos de Psicología del Deporte" and "Revista de Psicología del Deporte" do not explicitly specify the existence of external reviewers and "Cultura,

Ciencia y Deporto" provides insufficient exterior opening of the editorial board. A group of eight journals (42.1%) meet four or five of the seven indicators measured. Among the journals that meet the least criteria, 3 journals (15.8%) meet 2 of the parameters assessed, including only the abstract and keywords in two languages: "Habilidad Motriz"; "Materiales para la Historia del Deporte" and "Revista Española de Educación Física y Deportes".

## **4 DISCUSSION**

Most of the journals analyzed (73.7%) were founded as of the year 2000 and the average survival is 9.1 years, indicating a relatively short history compared to periodical publications in more traditional areas of knowledge. Only two publications were founded prior to the 90s, a decade in that consolidated sports science colleges in Spain, turning the career "physical education teacher" into "Licentiate of Physical Education" first and "Licentiate of physical activity and sports science" later. Very few have continued over the years, as they do not have the historical reputation, which is an important aspect in different journals assessment methodologies (KRZYZANOWSKI, FERREIRA, 1998; GÓMEZ, 1999; ROMAN; GIMÉNEZ, 2000). In return, these recent publications have started their projects with the support of modern technology and a historical moment in which research in the field allowed them to sustain themselves and raise their level to become journals indexed in international databases.

The 13 titles (68.4%) published between scientific associations and private publishers, compared with 6 journals (31.6%) produced by universities and public institutions, means a similar percentage (65.4% and 34.6%) to that in the first study in 2000 (DEVÍS et al., 2003).

The geographical distribution has undergone numerous changes in recent years, albethey only in the number of Autonomous Communities that publish journals in this field, which is nine and were eight in the first inventory. The most significant data is that Murcia, which did had publication, now publishes three journals (15.8%), alongside the significant decrease of Catalonia and the remarkable concentration of publishing activity in Madrid.

As for periodicity, semiannual periodicity predominates (52.6%), followed by quarterly periodicity (26.3%). It is a type of distribution for humanities and social sciences journals, contrasting with the profile exhibited by journals of the scientific and technical areas, dominated by short and intermediate periodicities. Simultaneously, periodicity

may be interpreted as an indirect indicator of the collection of manuscripts by a journal. According to Delgado (2001), this situation might show that our area does not have a very high production. The fact that more than half of the journals have a semiannual periodicity might indicate an excess of journals and/or low number of original articles. Based on this fact, it could be argued that the supply of journal titles in the field of sports science is excessive. Authors such as Oliveira (2005) suggest that having most journals as semiannual publications is an obstacle to their inclusion in databases. Concordantly, Lilacs Brasil (2005) recommends that the periodicity of a journal be, at least, quarterly. SciELO Brasil (2004), in turn, noted that periodicity is an indicator related to the timing and velocity of communication, and an indicator of scientific production flow, which depends upon the specific subject area covered by the journal. In the case of the Humanities, the minimum periodicity for journals allowed by that database is semiannual, although quarterly is desirable.

Of the 19 titles analyzed, 8 journals (42.1%) are indexed by an international database. Of the remaining 11 journals, one is not indexed by any database (except for the Latindex Catalog), and the remaining 10 publications (52.6%) are indexed by one or more Spanish databases, in addition to the Catalog Latindex. The most striking fact when examining international databases that index these Spanish journals, is that two of them have been included in the Social Science Citation Index and one of them has also been included in Scopus, which are the two most prestigious multidisciplinary databases worldwide. Other databases that stand out for their rigorous selection procedures are unidisciplinary databases PsycINFO (psychology), which indexes two journals, and EMBASE/Excerpta Médica (Health Sciences), which indexes the contents of one journal. Surely the indexing in databases is the main element to consider, among other requirements, to assess the quality of a journal, as inclusion provides the articles published in it with more visibility, thus increasing the chance of being read and cited (OHIRA; SOMBRIO; PRADO, 2000). According to Mueller (1999), a scientific journal is considered of good quality in that it publishes good articles, maintaining the periodicity set and being easily obtained. However, these features are dependent on each other and their fulfillment is what allows it to be included in international selective databases.

It should be noted that, currently, the international distribution of journals has been expanded and spread not only through databases but also over the Internet. However, for this to take place, they are required to adapt their publishing to new technologies,

adopting a web page where they can offer their content to readers. The results of this study confirm the significant change in the outlook of scientific journals that has been produced with electronic publishing, as the percentage of journals with electronic publishing is now only 26.3% of all journals analyzed, compared to 21.0% that offer their content exclusively on paper. But perhaps the most significant data is that 78.9% of the publications on the Internet offer free versions to the full text of articles, although they also maintain in many cases their paper version. As pointed out by Alcaín and Lascurain (2002), this situation will significantly improve future dissemination, visibility and quality of journals, which have not yet had a good international dissemination, by appearing listed in databases and other services.

The 19 Spanish sports science journals included in the Catalogue Latindex in 2009 represent a large percentage of the total of 32 journals identified in a recent listing (VILLAMÓN; DEVÍS, VALENCIA, VALENCIANO, 2007). This figure shows, one first, the interest of those responsible for editorial improvement of this group of publications and, second, the knowledge that there are an increasing number of Latindex products.

The editorial quality indicator assessed that had the largest non-compliance is the lack of publication of dates of "Reception and acceptance of manuscripts". The inclusion of these data comprises the journals, as it shows the delays in the review process of the manuscripts and, in general, the effectiveness of the management of publications. These dates can indirectly estimate the velocity of the editorial process, when the time intervals between receipt, acceptance and publication are short. However, as pointed out by Delgado (2001), achieving tight deadlines is difficult unless the management of journals is professionalized. Nevertheless, there are other difficulties as the reviewers having to meet the deadlines set by the journals or the commitment to those requiring a higher speed. It should be noted that the work of the reviewers is largely altruistic and is insufficiently recognized to be assumed that the evaluation of the work of colleagues is part of academic tasks.

Other quality indicators with a high percentage of non-compliance are "Editorial opening" and inclusion in "Information services", which have already been mentioned. With respect to editorial opening, according to Giménez and Román (2001), it is important that the composition of the editorial board is plural, i.e. that it has members from diverse institutional and ideological backgrounds. Failure to meet this criterion means the clear prevalence of local editorial teams over national and international

publishers, which also implies, inter alia, reduced attractiveness of foreign original authors.

Finally, the use of "External Reviewers" by the journal is another unfulfilled indicator. The rigor and objectivity of the selection process of articles, through independent external evaluation (peer review) prior to publication, is the primary requirement upon which the scientific publishing system is based. It should also be taken into account, however, that the Latindex requires indication of the arbitration system. That is, the publication should not only count on external evaluators, but it should also show it explicitly.

#### 5 CONCLUSIONS AND RECOMMENDATIONS

The situation of Spanish sports science journals shows that there has been a substantial improvement in standards over recent years with important progress in their visibility through its indexation in databases and their adaptation to electronic publishing. We observe in a very remarkable that two journals have managed to become part of the database ISI Web of Knowledge from Thomson-Reuters: "Revista de Psicología del Deporte" and the "International Journal of Medicine and Physical Activity and Sports Science". However, in general, there are still aspects of standardization that are easily remediable and should be urgently addressed. In addition, it is important to take action to improve their contents, which includes review of the articles by arbitrators. It is not only to be strict, but above all to provide comments and suggestions to the authors so they may improve their manuscripts. The task of the reviewers, often little known, is essential to raise the level of publications in the field. Finally, the biggest challenge to achieve the full internationalization of Spanish journals comprises attracting manuscripts from foreign authors, as their content is now easily accessible from anywhere in the world through electronic publishing.

### As revistas espanholas em Ciências do esporte incluidas no "Catálogo Latindex"

Resumo: Este artigo analisa as revistas espanolas em ciências do esporte incluídas no Catálogo Latindex. Se examinam as principais características editoriais das publicações, o conteúdo que oferecem na Internet e a evolução da presença das revistas espanholas no catálogo desde 2004. Também são analisados sete indicadores básicos para avaliar a qualidade editorial das publicações, selecionados dentre os Critérios Latindex. Os dados obtidos permitem traçar um panorama da situação destas revistas na Espanha, destacando a melhora produzida durante os últimos anos en sua normalização, indexação em bases de dados e adaptação à editoração eletrônica.

**Palavras-chave**: Publicações Periódicas. Estudos de avaliação. Esportes. Educação física. Espanha.

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