

Bibliometric analysis of safety in sport in the EBSCO Host database**Análisis bibliométrico de la seguridad en el deporte en base de datos EBSCO Host**

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Abstract

It is generally known that safety is paramount for every human being, there is a close relationship between the practice of sports and the risks that may arise, however, the management of them is an influential factor to reduce them, avoid them or minimize them. In this document, an extraction of bibliometric data is carried out to systematically review the research domain regarding this topic. A bibliographic search was carried out using the EBSCO Host database, a total of 294 published documents were identified, of which exact repeated publications were excluded, the final sample 225 documents were listed analyzing characteristics such as: publication modality, most productive countries, scientific journals, language, relationship with other keywords, this search was carried out between 1983 and April 15th, 2023. Based on bibliometric data, network analysis was carried out to understand the relationship between countries, keywords, language, trend through the years and authors. "Sport" and "security" and "risk management" are mainly found in publications in the United States, Australia and France. Subsequently, the text extraction of publication keywords is used to identify the relationship with other terms. In addition, recommendations are given for future research based on the results of the bibliometric analysis.

Resumen

Es de conocimiento general que la seguridad es primordial para todo ser humano, existiendo una relación estrecha entre la práctica deportiva y los riesgos que pueden surgir, sin embargo, la gestión de ellos es un factor que influyente para disminuirlos, evitarlos o minimizarlos. En este documento, se realiza una extracción de datos bibliométricos para revisar de manera sistemática el dominio de investigación respecto a este tema. Se realizó una búsqueda bibliográfica utilizando la base de datos EBSCO Host, se identificaron un total de 294 documentos publicados, de los cuales se excluyeron publicaciones repetidas exactas, la muestra final se enlistaron 225 documentos analizándose características tales como: modalidad de publicación, países más productivos, revistas científicas, idioma, relación con otras palabras clave, dicha búsqueda se realizó entre 1983 y el 15 de abril de 2023. En base a datos bibliométricos, el análisis de redes se llevó a cabo para comprender la relación entre países, palabras clave, idioma, tendencia a través de los años y autores. "Sport" and "security" and "risk management" se encuentran principalmente en publicaciones de Estados Unidos, Australia y Francia. Posteriormente, se utiliza la extracción de texto de palabras clave de publicación para identificar la relación con otros términos. Además, se dan recomendaciones para futuras investigaciones basadas en los resultados del análisis bibliométrico.

Regulations, Risks, Research productivity**Normativas, Riesgos, Productividad de investigación**

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Introduction

Sport has been consolidated as one of the activities that are present in people's daily lives (Latorre, 2008). According to Bentley and Page (2008), it is assumed that injuries are an inherent part of sports practice, being responsible coaches, physical trainers, doctors, physiotherapists, psychologists, etc., to ensure that sports practice is carried out in an optimal way through the application of protocols to reduce or avoid possible risks. Therefore, the proper management of pre-existing risks considering their multifactorial origin of risks, requires a multidisciplinary approach in the application of prevention protocols.

It is important to reiterate that the multifactorial origin of risks complicates the identification and search for prevention strategies. Van Mechelen in 1992, published the sequential model for injury prevention, providing new analysis criteria from the scientific perception, with the aim of achieving effectiveness and efficiency in his model, as a first step to define the magnitude of the situation or problem.

However, according to Kissler (2012), preventive actions in diseases or risks are widely documented unlike risk prevention in sports practice. On the other hand, Dallinga et al. (2012), mention that people who have had an injury due to sports practice, in addition to the suffering, economic expense, derive a side effect turning sports practice into something unpleasant.

In relation to the pyramid of human needs proposed by Maslow (1943), security occupies the second place, being the base of the pyramid the physiological needs, if this is not enough, the declaration of the third article of the United Nations (1948) mentions that: "Everyone has the right to life, liberty and security of person".

Therefore, it is important to emphasize that according to Gómez Calvo (2020), the issue of safety is a right of users and workers, therefore, the administrators of sports venues and / or entities of physical-sports activities have the legitimate duty to ensure it. The absence can imply violation of rights and infractions that imply an administrative or monetary penalty, as well as legal responsibility.

We could summarize that sport is a right and that institutions have the obligation to carry out an analysis of the different aspects related to risk management. As a result, risk can be defined as a threat, affecting the interests of sports institutions, which must be measured by its effect and the probability of its occurrence. In other words, risks can be measured by degrees.

In short, the benefits of risk forecasting in sport will serve to identify possible risks in sports practice, the purpose of which will be to reduce, eliminate or prevent risks while safeguarding the integrity of participants, spectators and workers.

On the other hand, the purpose of this article is to have a macro perspective by accepting the annual production, the geographical distribution, the leading journals, the general situation in terms of collaborative networks. Likewise, Li and Hale (2016), explain that bibliometric analysis is an art where a macroscopic perspective of a large amount of academic literature is provided by means of a quantitative analysis regarding the information of publications through the years, their characteristics and how scientific production can be mapped within a specific field.

Method

The EBSCO Host database was used to search and identify the documents. This process was carried out from 1983 to April 15, 2023 using the following search algorithm: "sport" AND "security" AND "risk management" linked to article title, abstract and keywords. Initially, 294 results were found and the following document types were recorded: academic publications, journals, professional publications, news, reports, books, reviews and e-books. Subsequently, exact repeated publications were excluded. Thus, the final sample included 225 documents, which were divided into 102 (45.3%) academic publications, 76 journals (33.7%), 23 (10.2%) professional publications, 10 (4.4%) news items, 6 (2.6%) reports, 6 (2.6%) reports, and 2 (2.6%) articles, 6 (2.6%) reports, 4 (1.7%) books, 2 (.8%) reviews and 2 (.8%) e-books.

With the extracted documents, a database was created in Microsoft Excel that included the following data: type of publication, year of publication, language, correlation of keywords, country of publication. This information made it possible to perform a descriptive analysis and to identify the countries, journals and institutions that are publishing the most on the subject.

Results

The results of the research are presented below. In Figure 1 of the analysis on the literature on security in VOSviewer software. The minimum occurrence of 5 was selected; therefore, of the 1401 keywords met this criterion consisting of 44 groups. They can be seen in different colors that group the various relationships of the concepts and in which the co-citation networks can be visualized. The size of the bubble indicates the number of occurrences and the total strength of the links to other elements/keywords. The top five keywords were "risk management", "security management", "risk management in business", "safety", "sports facilities", which occurred 66, 55, 47, 43 and 20 times, respectively.

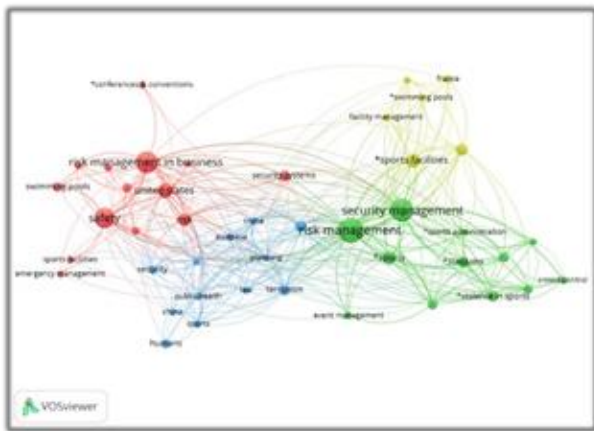


Figure 1 Co-occurrence analysis of keywords: "sport" AND "security" AND "risk management" of the VOS visualization software.

As for Figure 2, the analysis of the authorship pattern shows that, out of the 365 authors, only 20 of them have at least 2 documents and, taking this data as a reference, the total strength of the links was calculated.

the total strength of co-authorship links with other authors was calculated. of co-authorship links with other authors was calculated. The visualized density of the co-authorships with the strongest relationship. Taylor- Tracy and Toohey- Kristine with greater strength than all the others.

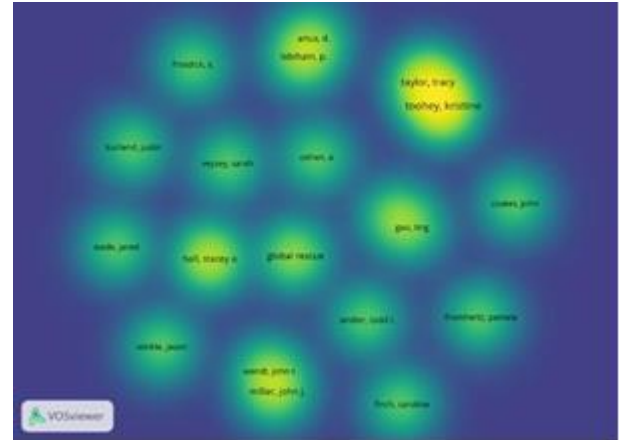
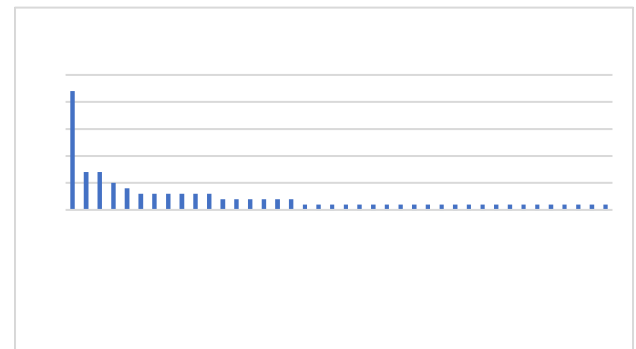


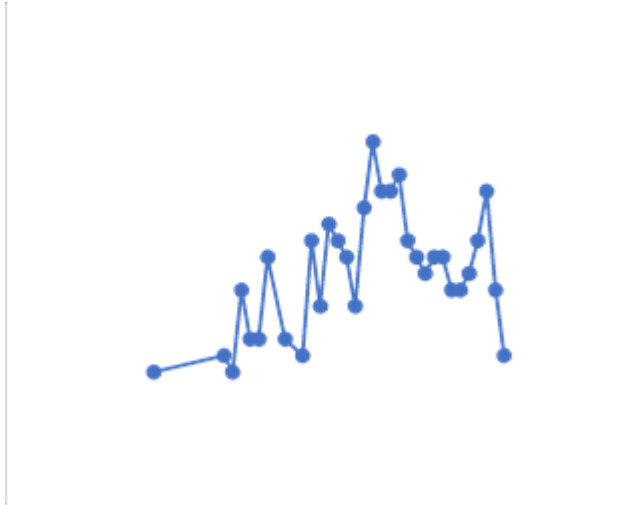
Figure 2 Density of co-authorship of the main authors.

With respect to Table 1 indicates the countries that produced literature on the keywords worldwide. The United States tops the list with 22 publications, followed by Australia and France with 7 publications, while Spain and Poland are the countries with the fewest publications.



Graphic 1 Number of publications by country

Figure 3 shows the trends and variations in the number of publications per year from 1983 to April 15, 2023 in the EBSCO Host database, as shown by the starting points, from 1983 to 1991, with seven years between the beginning of the period and the end of the period. 1991 passing seven years of distance between the first and second publication, however, the peak is shown in 2008-20011 with an increase in the number of publications (15-13 publications per year), then a decline occurs in 2012-2020 to 2012-2020 to 2023. a decline in 2012-2020 and then again in 2022 with an upturn in publications. publications. However, it can be observed that there is a considerable variation in the number of publications over time.



Graphic 2 Evolution of the number of publications per year.

However, as shown in Table 1, publications related to safety in sport stand out with 45.3% being academic publications, followed by 33.7% in journals, while e-books and reviews do not add up to the total number of publications. 33.7% of publications in journals, while e-books and reviews do not add up to 2% of the publications. 2% of the publications.

Type of documents	Quantity	%
Academic publications	102	45.3
Journals	76	33.7
Professional publications	23	10.2
News	10	4.4
Reports	6	2.6
Books	4	1.7
Reviews	2	0.8
E-books	2	0.8

Table 1 Type of publications related to safety in sport

In terms of language of publication (Table 3), 89.7% of the 225 articles are in English (n=203), well above the other languages of publication, such as French (n=13 publications; 5.7% of the total), Chinese (n=8; 3.5%), Korean (n=1; .4%), and Spanish (n=1; .4%).

Language	Quantity	%
English	203	89.7
French	13	5.7
Chinese	8	3.5
Korean	1	0.4
Spanish	1	0.4

Table 2 Language in which the published scientific papers are available

Conclusions

The main conclusions of this article are summarized as follows, bibliometrics is a citation visualization analysis method developed on the basis of scientometrics and data visualization, which has good analysis and prediction of research status and development trend in knowledge mapping.

As an effective tool for mapping discipline documents, bibliometrics can quantify collaborations, citations, research topics and research trends in a research field. It refers to a research method applied in library and information science that uses statistical and quantitative analysis to characterize dissertations on a particular topic, field, institution or country.

As mentioned by Fernandez (2002), bibliometrics is considered as the set of quantitative techniques applied to the analysis of documentary sets, producers and consumers, and as the tool through which the state of science and technology can be observed through the global production of scientific literature at a given level of specialization.

The United States is the country with the largest number of published papers containing the keywords: sport AND security AND risk managemet. The relationships analyzed by means of the keywords show how it remains a challenge to account for interdisciplinarity in a concentrated field of knowledge.

Finally, it will be interesting in future studies to perform this analysis in other databases such as Google Scholar and Dimensions and to pose a series of questions

What other variables should be cross-referenced? What is the likely future of bibliometric studies in the field of sport safety? How can they contribute to disciplinary and professional strengthening? What criticisms or problems can be raised?

Finally, bibliometric studies have been shown to be tools that contribute to the evaluation of the disciplinary field of sport safety. At the same time, they also make it possible to assess research and knowledge production trends by obtaining measurable indicators. In this way, the different studies and reports can become real supports for the elaboration and definition of policies related to psychological research, which, in fact, is beginning to be visualized in this way.

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