

# THEMATIC AND BIBLIOMETRIC ANALYSIS OF PUBLICATIONS IN NATIONAL PERIODICALS ON PHYSICAL EDUCATION

## ANÁLISE TEMÁTICA E BIBLIOMÉTRICA DE PUBLICAÇÕES EM PERIÓDICOS NACIONAIS DE EDUCAÇÃO FÍSICA

**Marina Luiza Resende Abritta** - mluizaresende@hotmail.com

Acadêmica do curso de Medicina da Universidade Estadual de Montes Claros - Unimontes. Aluna de iniciação científica do Programa Institucional de Iniciação Científica e Tecnológica - PIBIC/FAPEMIG.

**Maria das Graças Jezini Meira** - maria.jezini@soufunorte.com.br

Acadêmica do curso de Fonoaudiologia da Faculdade de Saúde e Humanidades Ibituruna - FASI. Aluna de iniciação científica do Programa Institucional de Bolsas de Iniciação Científica do Centro Universitário Funorte.

**Daniel Antunes Freitas** - danielmestradounincor@yahoo.com.br

Doutor em Ciências da Saúde pela Universidade Estadual de Montes Claros - Unimontes. Docente do Departamento de Saúde Mental e Saúde Coletiva da Unimontes.

**Renato Sobral Monteiro Júnior** - renato.monteiro@unimontes.br

Doutor em Medicina (Neurologia-Neurociências) pela Universidade Federal Fluminense. Docente do Departamento de Educação Física e do Desporto da Unimontes.

**Wellington Danilo Soares** - wdansoa@yahoo.com.br

Doutor em Ciências da Saúde pela Universidade Estadual de Montes Claros - Unimontes. Docente do Departamento de Educação Física e do Desporto da Unimontes. Professor orientador do Programa Institucional de Iniciação Científica e Tecnológica - PIBIC/FAPEMIG e do Programa Institucional de Bolsas de Iniciação Científica do Centro Universitário Funorte.

**Abstract: Introduction:** Scientific analysis is important because it aims to guide researchers to explore more necessary areas and direct health policies towards a more equitable and dynamic society. Thus, it is necessary that articles be carefully analyzed in order to understand the course of scientific production in the country. **Methodology:** This is a quantitative, descriptive and cross-sectional study. Analysis of articles published in full form in the journals *Motriz* and *Motricidade*, from 2018-2022, was carried out. The study deals with the application of bibliometric properties in order to infer the most used methodology, the most published type of article, most frequent language, as well as the institution of origin. These parameters allow us to understand the trend of the publications made in these journals and direct the study to areas that are still little explored. **Results:** A total of 519 articles were analyzed, of which 369 were from public institutions, 440 were published in English, and 354 had quantitative methodology. Furthermore, it was noted that most of the articles, 458, were original and 255 were written by more than five authors. Moreover, the most frequent themes are those involving subjects such as: muscle strength; physical activity; quality of life and health. **Conclusion:** It is observed that articles in Spanish and other languages are not so frequent, so it is important to stimulate scientific

production in several languages for a greater global reach. In summary, it is noted that scientific production is rich, but it can be boosted by expanding the language, methodologies, and types of studies.

**Keywords:** Bibliometrics, Physical Education, Higher Education.

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## INTRODUCTION

The term bibliometrics was first used in 1917, but coined by Otlet in 1934. Pritchard, in the 1960s, based on the knowledge of Hulme and Lotka, proposed the modernized bibliometric study, which has as its concept the use of statistical and mathematical methods for the analysis of studies. In addition, it is known that knowledge must be constantly improved, in order to advance in search of new theories. In this way, the scientific methodology is important in this scenario, because it is necessary that there is scientific rigor<sup>(1)</sup>.

The central point of the bibliometric study is the use of quantitative methods in order to objectively perform analyses on a desired aspect. In addition, this type of study has three basic laws - Lotka, Bradford and Zipf -, the first of which is related to the number of authors who produce a certain study and, from this, to evaluate productivity; the second is based on determining the relevance of the subjects studied; and the third seeks an association of words with the theme of the research<sup>(1-2)</sup>.

It is noted that, in the last decade, this type of study has been more used, mainly, in the area of physical education, with national and international exponential. In this way, it is understood that the use of this rigorous and mathematical methodology makes the study more scientific and objective<sup>(2)</sup>. Thus, the objective of the bibliometric study is to quantify results, map scientific production, as well as create productivity indicators. In addition, the identification of knowledge gaps can also be made and is important for the recognition of the need to study less explored topics. Thus, the scientific study aims to guide researchers to explore more necessary areas and direct health policies in favor of a more equitable and dynamic society<sup>(3)</sup>.

Physical Education has a primary role not only in understanding the movement of the body, but in several other areas, such as neurosciences, special education, learning, pedagogical aspects. Therefore, it is noticed that it is possible to understand it not only as an area of knowledge established

in the curriculum, but also as scientific, allowing the establishment of its relationship with the development of new technologies<sup>(4-6)</sup>.

Thus, it is understood that scientific production is the key point for the growth of the area, improvement in health and construction of critical and active citizens. In this sense, understanding the social, political and cultural demands directs the studies done and guides new research to be carried out<sup>(3,7)</sup>.

## METHOD

This is a quantitative, descriptive and cross-sectional study, with application of bibliometric properties. An analysis was carried out of articles published in full in the journals of the two main journals in the area of physical education, *Motriz* and *Motricidade*, between the years 2018 and 2022. The choice of magazines is directly related to the importance they have in the middle and due to the large number of publications made.

The journals were accessed virtually, through the electronic portals and were analyzed according to the following items: number of articles, authors, institution of origin, funding, language of the article, category, methodology, theme of the article. Through the analysis of these criteria it is possible to understand which themes are more and less prevalent, in order to direct efforts to less explored themes. In addition, the institution of origin and the funding criterion are important, because they show the origin of the studies and the need for investment in research. The other criteria, such as language, category, authors and methodology are valuable, since, through these items, the trend of Brazilian publications is understood.

519 articles were evaluated and the data were tabulated manually, through the Microsoft Office Excel program. It is noteworthy that, in this methodology, the items were not analyzed: number of references, citations, co-citation analysis, co-authorship, cowords.

## RESULTS

Table I refers to the articles of the magazine *Motricidade*. 207 articles were analyzed, among them, 160 (77.2%) come from public institutions and 47 (22.8%), private. Regarding the number of authors, it is noted that 107 (51.69%) were written by more than 5 (five) authors, 18 by up to 2 (two) authors and 82 articles between 2 (two) and 5 (five) authors. 61 articles declared funding, 145 there were no information about funding and 1 (one) declared not to obtain funding. In addition, it is noticed that the articles analyzed in this period were written in English and Portuguese, most of them in

Portuguese. The works, in large part, 192, are original, 4 (four) are experience reports, 8 (eight) reviews and 3 (three) belonging to another category. 172 articles belong to the quantitative methodology, 30 used the qualitative methodology and 5 (five) enjoyed both methods.

**Table 1 – Motor Magazine**

Number of articles	N = 207	% = 100%
<b>Home institution</b>		
Public	160	77,2%
Private	47	22,8 %
<b>Authors</b>		
Up to 2 authors	18	8,69%
2-5 authors	82	39,61%
>5 authors	107	51,69%
<b>Financing</b>		
Informed financing	61	29,4%
No funding	1	0,48%
No funding information	145	70%
<b>Language</b>		
Portuguese	130	62,80%
English	77	37,19%
Spanish	0	
>1 language	0	
<b>Category</b>		
Original	192	92,75%
Revision	8	3,86%
Experience report	4	1,93%
Others	3	1,44%
<b>Methodology</b>		
Qualitative	30	14,49%
Quantitative	172	83%
Quantitative-qualitative	5	2,41%
<b>Theme of the article</b>		
Sport and physical activity	73	35%
Health and chronic diseases	47	23%
Teaching and research Quality of life	10	5%
of life	21	10%
Aging	15	7%
Body image	23	11%
Others	18	9%

**Source:** Own authorship, 2022.

In relation to the articles referring to the magazine *Motriz*, it is noted that, of the 312 studies analyzed, 209 originate from public institutions and 103 are private. Of such texts, most of the scientific production is concentrated in the state of São Paulo and in second place in Minas Gerais. 148 articles were written by more than 5 (five) authors, 133 by 1 (one) to 5 (five) authors and 31 articles were made by up to 2 (two) authors. In addition, it is noticed that most, 141, of the studies obtained funding. The predominant language was English, so about 74.67% of the articles were written in that language. It is noted that only 2 (two) articles were written in more than 1 (one) language and only 77 were written in Portuguese. Regarding the type of study, 266 articles were published as originals and 33 published as a review. 182 articles discuss the subject in a quantitative way, 66 qualitative and 64 in a mixed way.

**Table 2** – Motor Magazine

Number of articles	N = 312	% = 100%
<b>Home institution</b>		
Public	209	67%
Private	103	45%
<b>Authors</b>		
Up to 2 authors	31	9,9%
2-5 authors	133	42,6%
>5 authors	148	47,4%
<b>Financing</b>		
Informed financing	141	45%
No funding	117	37,5%
No funding information	54	17,3%
<b>Language</b>		
Portuguese	77	24,6%
English	233	74,67%
Spanish	0	0%
>1 language	2	0,64%
<b>Category</b>		
Original	266	85%
Revision	33	10,5%
Experience report	0	0%
Others	13	4,16%

<b>Methodology</b>		
Qualitative	66	21,15%
Quantitative	182	58,3%
Quantitative-qualitative	64	20,5%
<b>Theme of the article</b>		
Sport and physical activity	104	33%
Health and chronic diseases		
Teaching and research		
Quality of life	132	42%
Aging		
Body image	32	10%
Others	6	1,91%
	13	4,15 %
	6	1,91%
	19	6 %

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**Source:** Own authorship, 2022.

## DISCUSSION

A On the one hand, it is noted that in both journals the largest scientific production is located in public spaces. However, it is worth mentioning that this production is still in the process of growth, because Brazilian universities are young, they were consolidated years after decolonization, so until the mid-twentieth century scientific research still lacked much more stimulus and individual effort from researchers. However, in the face of the expansion of collective needs, there was greater growth and stimulus to scientific investigations<sup>(8)</sup>.

On the other hand, it is noticed that there is a scientific concentration in the state of São Paulo, where greater allocation of resources is developed and where some of the main faculties in the country are located. However, the state of Minas Gerais is also a major scientific producer and it is worth mentioning that scientific development is interconnected with socioeconomic development, so the concentration of scientific resources in a given region promotes the perpetuation of social inequality, since there is a positive correlation between science and the Human Development Index (HDI). It is noteworthy that socioeconomic development, through public policies and private investment, for decades, has been concentrated exclusively in the southeastern and southern regions, leading the rest of the country to have a smaller number of universities and research centers<sup>(3,9)</sup>.

In addition, it appears that the scientific production has English as the dominant language, since it is the most spoken language, studied and defined as a language policy, especially in the area of

health. Thus, for the exercise of global citizenship, with regard to educational updating, it is important to have knowledge of this language. However, it is necessary to remember that Brazil is a country that still lacks many resources and still has great social inequality, so many are on the margins of all this knowledge and, consequently, of power. In addition, it is perceived that the privileged teaching of English in the country should reduce the socio-educational discrepancy, but it should be questioned whether this teaching is effective. Therefore, it is essential that the dissemination of language is a social agenda<sup>(10-12)</sup>.

Increasing scientific production in other languages is important in order to make knowledge more democratic. In view of this, making writing in more than 1 (one) language a habit can have a substantial impact on the reach of publications and generate social change in a more emphatic way<sup>(11)</sup>.

With regard to studies in physical education, they permeate several other areas, which makes it evident that knowledge is multidisciplinary. Thus, research related to themes such as body image, chronic diseases, physical activity, quality of life, among others, are very frequent. In addition, issues related to the aging process have grown in the scientific community, because in several countries there is an inversion of the age pyramid, given that a greater number of elderly people has become frequent when compared to the number of young people<sup>(12-13)</sup>.

The study of chronic diseases and comorbidities, such as systemic arterial hypertension, diabetes mellitus, obesity, stroke, Parkinson's and Alzheimer's has a large space in scientific studies, since these diseases are frequent in the general population, especially obesity, even affecting children. In addition, they are widely studied due to the sequelae they can cause and due to the high number of deaths they can cause, due to their complications, generating an impact on the quality of life of the individual and economic for the state<sup>(14-15)</sup>.

## CONCLUSION

In short, it is noticed that each item analyzed has its importance, in order to make research more scientific and democratic. Through this analysis it is possible to understand in which aspect it is necessary to have changes and improvements.

Understanding the research that is carried out is of paramount importance in the scientific scenario. It is observed that articles in Spanish and other languages are not frequent, so it is important that there is a stimulus to scientific production in several languages for greater global reach. It is noted that scientific production is rich, but it can be driven through the expansion of linguistic policies, methodologies and types of various studies.

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