© Yoshin Academy

"Ido Movement for Culture Journal of Martial Arts Anthropology", Vol. 24, no. 2 (2024), pp. 75–83

DOI: 10.14589/ido.24.2.9

BIBLIOMETRICS

LEONARDO MAMEDE FERREIRA DA CRUZ^{1(ABCF)}, UMBERTO CESAR CORREA^{2(ADE)}

1 ORCID: 0000-0003-4102-2479

Universidade de Sao Paulo, Escola de Educacao Fisica e Esporte, Sao Paulo (Brazil)

2 ORCID: 0000-0002-3465-0437

Universidade de Sao Paulo, Escola de Educacao Fisica e Esporte, Sao Paulo (Brazil)

Corresponding author: Umberto Cesar Correa, Laboratorio de Comportamento Motor, Universidade de Sao Paulo, Av. Mello Moraes, 65, Cidade Universitaria, Sao Paulo, SP, Brazil, CEP 05508-030, e-mail: umbertoc@usp.br; Tel. 55-11-3091 3136;

Fax: 55-11-3813 5921

Trends in studies on capoeira: a bibliometric analysis

Submission: 3.06.2022; acceptance: 10.09.2022

Key words: capoeira, martial art, area of knowledge, scientific production, article

Abstract

Background. Over the last few decades, capoeira has been highlighted as one of the most fascinating human activities. Parallel to the growing number of practitioners worldwide, capoeira has increasingly been the focus of academic concerns, particularly in university contexts.

Problem and aim. This study aimed to identify how capoeira has been addressed academically. For this purpose, it sought to develop a bibliometric analysis of published articles on capoeira over the last decade.

Material and methods. 353 articles written in the Portuguese, English, Spanish and French languages were identified in the Pubmed (n = 27), Web of Science (n = 176), and Scopus (n = 150) databases, from 2010 to 2020, using the word "capoeira". After that, 227 articles were removed because they were repeated, with unavailable access or dealt with another matter, resulting in 126 records for analysis. They were analysed based on the relative frequency of occurrences considering: (i) area of knowledge, (ii) authorship, (iii) type of research, and (iv) journal.

Results. The articles on capoeira belonged in the disciplines of Social Sciences, Life Sciences and Biomedicine, and Arts and Humanities. The most frequent subareas were Sport Science, Education Educational Research, Hospitality Leisure Sport Tourism, and Social Sciences Interdisciplinary. The main journals were: Movimento, Archives of Budo, Ido Movement for Culture, Revista de Artes Marciales Asiaticas, and Periferia. Qualitative research was the method most utilised. Furthermore, most articles were published in co-authorship, which involved authors from different institutions from the same and different countries.

Conclusions. These findings contribute to clarifying the state of research into the set of capoeira and as an important step for the researcher to raise questions, select research methods and define publication targets.

Introduction

Capoeira refers to a Brazilian game, also recognized as a martial art, in which two individuals interact in opposition through attack, defense, and counter-attack movements that include kicks, sweeps, dodges, threats, feints, swings, jumps and acrobatics. This opposition develops constrained by individuals who surround it by singing and playing instruments. It is the ways of playing an instrument called *berimbau* and chants that

For citation – in IPA style:

Ferreira da Cruz L.M., Correa U.C. (2024), *Trends in studies on capoeira: a bibliometric analysis*, "Ido Movement for Culture Journal of Martial Arts Anthropology", vol. 24, no. 2, pp. 75–83; doi: 10.14589/ido.24.2.9. In other standard – e.g.:

Ferreira da Cruz, L. M., Correa, U. C. Trends in studies on capoeira: a bibliometric analysis. *Ido Mov Cult J Martial Arts Anthrop*, 2024, 24 (2): 75–83 DOI: 10.14589/ido.24.2.9

determine the form and purpose in which individuals oppose, characterizing the capoeira as fight, play, dance or art [Areias 1983; Miranda 2012; Rosa 2012; Lipiainen 2015]. For instance, the fight occurs when individuals seek to win; the play emerges when an individual constantly seeks to deceive the other, leading him/her to perceive a situation when, in truth, it is another one; art/dance arises when the opposition is placed in the background, giving way to beauty and spectacle.

There is still a lot of uncertainty about the origin of the capoeira in Brazil, mainly due to the lack of documentation on the subject [Campos 2001; Assuncao 2005; Dettmann 2013; Capoeira 2015]. However, some hypotheses have been developed suggesting that: (i) it was created by quilombolas (runaway slaves who lived in communities called quilombos) in the Brazilian colonial period (1530-1822), as they did not have sufficient military resources to oppose the Portuguese empire. The quilombolas would have developed the capoeira based on the movements of animals and the structures of the dances and combat games they brought from Africa [Areias 1983; Campos 2001]. The etymology of the word capoeira is inserted in this context, since it referred to a type of undergrowth existing in the place where the runaway slaves practiced capoeira and to a bird named Uru (Odontophorus capueira) which, during the rite of struggle, female performs movements that were mimicked in capoeira [Areias 1983; Silva 2002]; (ii) on the other hand, capoeira would have emerged in the first half of the 19th century as a predominantly urban phenomenon. The urban slaves had some social mobility that allowed them a certain autonomy, which would have been essential for the interaction with other slaves and, consequently, the development of the capoeira [Assuncao 2005; Brasil 2007; Soares 2008; Lussac, Tubino 2009; Silva, Vasconcelos 2014; Assuncao 2019].

The status of the capoeira has evolved from the beginning of the last century, from an activity practiced by marginalized people to its recognition as cultural heritage [Fonseca, Vieira 2014; Correa, Walter 2016]. Over the last few decades, its polysemic and polymorphic characteristics have increasingly highlighted the capoeira as one of the fascinating human activities [Assuncao 2005; Ugolotti 2015; Correa, Walter 2016]. It has been practiced in more than 100 countries on five continents, in different contexts (e.g., schools, gyms, leisure areas, and official competitions) and by individuals of different ages, needs, and expectations (e.g., children, athletes and disabled people) [Jasinski 2008; Burt, Butler 2011; Aceti 2013; Correa, Walter 2016; Mocarzel 2016; Jordan et al. 2019; Teixeira, Mota 2018].

Interestingly, parallel to the growing number of practitioners worldwide, capoeira has increasingly been the focus of academic concerns, particularly in university contexts [Campos 2001; Silva 2002; Brito *et al.* 2018; Assuncao 2019; Lima, Brasileiro 2020]. This study aimed

to identify how capoeira has been addressed academically. For this purpose, it sought to develop a bibliometric analysis of the published articles on capoeira over the last decade. This refers to a method of quantitative analysis that has emerged as a reliable way for investigating the trends during the scientific research development [Pendlebury 2008; Salini 2016].

A bibliometric analysis was chosen because it allows for identifying trends in the evolution of knowledge, estimating the coverage of scientific journals, identifying the most productive authors and institutions, investigating relationships between disciplines and areas of knowledge, and evaluating scientific production [Stork, Astrin 2014]. In addition, it makes possible the establishment of inclusion and exclusion of criteria for (i) accessing the availability of specific data, (ii) choosing publication types, a field and time frame, (iii) deciding on the type of measure to use as numerical dependent variable, and (iv) filtering and comparative data analysis [Pendlebury 2008]. In recent years, this method has been used to identify trends in studies on various martial arts or combat sports such as jiu-jitsu [Perez-Gutierrez et al. 2021], judo [Peset et al. 2013], taekwondo [Perez-Gutierrez et al. 2015], boxing, fencing, and wrestling [Franchini et al. 2018], to name a few. For instance, a study by Perez-Gutierrez et al. [2015] developed a bibliometric analysis of one-hundred-seventy-six articles on taekwondo published from 1989 to 2013 in journals indexed in the Web of Science. They revealed that the highest percentage of articles were published in the sport sciences area; Willy Pieter was the main author; South Korea, the United States of America and Turkey were the countries that produced the most articles; and Journal of Strength and Conditioning Research was the journal that published the majority of taekwondo articles.

Notwithstanding the importance of the knowledge from books and chapters of books, this study focused on articles because, in addition to their importance, they made it easier to access publications. Obviously, this procedure limited the conclusions to publications of articles. Finally, there is no doubt that many important works have been published since the first half of the last century [e.g., see those seminals by Marinho (1945) and Pastinha (1964)]. However, the aim of the present study was not to highlight the important authors or publications on capoeira, but to contribute to the understanding of how it has been addressed in the scientific literature by considering the foregoing increasing of academic interest. For this reason, this bibliometric analysis considered the articles published in the last ten years as a sample that allowed enough data to characterize the publication tendencies on capoeira by answering the following questions: how many and which journals have the articles about capoeira published? What is the distribution of these journals in terms of areas of knowledge? Who are the authors that publish about capoeira, and where are

they from? In addition, a content analysis of the types of research allowed its bibliometric analysis.

Method

Data collection

The identification, screening, eligibility and inclusion processes were based on Pendlebury's (2008) rules for bibliometric analysis (Figure 1). The first phase involved identifying articles in specific databases (Pubmed, Web of Science and Scopus) using the word "capoeira". It is an unambiguous term about the phenomena of combat sports and martial arts, and it is easily retrieved from databases (Perez-Gutierrez *et al.* 2011). For this purpose, searches considered articles written in Portuguese, English, Spanish, and French languages, from 2010 to 2020. Then, the articles' titles and abstracts were analysed in the screening phase. Here, the articles whose access was not available were excluded, and those in more than one database were also removed in order to remain just one.

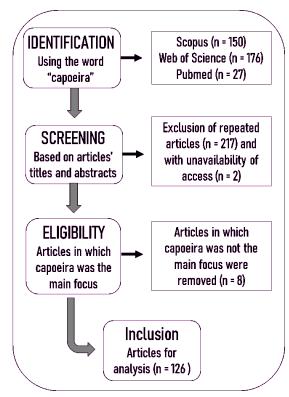


Fig. 1. Flow chart summarizing the data collection procedures.

In the third phase, eligibility criteria for the articles were defined. In this case, all articles were read, and those not about capoeira itself were removed. In this case, although the word capoeira appeared in some parts of the text, it did not refer to the phenomenon under analysis. For example, although the word capoeira is in the article "Parkour as acrobatics: an existential phenomenological study of movement in parkour", the latter is

the focus and not capoeira. Finally, the resulting articles were considered for analysis.

Therefore, to be included an article should have capoeira or one of its dimensions (e.g., art, dance, combat sport, martial art) as the main focus of study. On the other hand, articles that (i) did not address capoeira as the main focus of study/analysis, (ii) were inaccessible, or (iii) referred to capoeira as another phenomenon (e.g., grass-capoeira) were excluded.

In summary, 353 articles were obtained from the initial identification (Scopus = 150; Web of Science = 176; Pubmed = 27). The screening allowed identifying 217 repeated articles and 2 others with unavailable access. Finally, based on the eligibility criteria 8 articles were removed, resulting in 126 records for analysis. Figure 1 presents a flow chart summarizing these procedures.

Data analyses

The articles were analysed based on the relative frequency of occurrences considering: (i) area of knowledge, (ii) authorship, (iii) type of research, and (iv) journal. These variables were also analysed regarding distribution over the years.

The Web of Science's research areas were utilized for the classification of the areas of knowledge (https://images. webofknowledge.com/images/help/WOS/hp_research_ areas_easca.html; accessed on 04/15/2022). They are: (1) Arts & Humanities, (2) Life Sciences & Biomedicine, (3) Physical Sciences, (4) Social Sciences, and (5) Technology. In addition, given the complex nature of these areas, the articles were also classified according to their subarea of knowledge. The foregoing database provides 153 subareas of knowledge by considering the following distribution: Arts & Humanities (n = 14), Life Sciences & Biomedicine (n = 76), Physical Sciences (n = 17), Social Sciences (n = 17)25), and Technology (n = 21). It is important to highlight that some articles were classified in more than one area. For example, an article by Hedegard (2013) was classified in the areas of Social Sciences and Arts & Humanities; Levin (2016) was classified in the areas of Life Sciences & Biomedicine and Social Sciences. In this case, both areas were registered. Still, for some articles the Web of Science database identified a subarea that did not belong to any of the areas listed. This was the case of the Hospitality Leisure Sport Tourism subarea.

The authorship was analyzed in relation to the number of authors per article, collaboration between authors from different institutions in the same and different countries, and main authors and their origins.

Regarding the types of scientific research, they were [Ader, Mellenbergh 2000; Thomas *et al.* 2015]: historical, philosophical, synthesis, descriptive, experimental and quasi-experimental, qualitative, surveys, epidemiological, and mixed-methods research.

Finally, five articles were randomly selected for reanalysing in order to verify the intra- and inter-analyzer reliability. This procedure involved two analysers (experi-

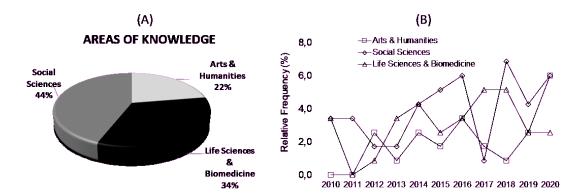


Fig. 2. Distribution of articles by area of knowledge.

Table 1. Distribution of articles by subarea of knowledge and year.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sport Sciences	1.7	0.0	0.9	2.6	2.6	2.6	2.6	3.4	2.6	1.7	0.0
Education Educational Research	1.7	0.9	0.0	0.9	1.7	2.6	1.7	0.0	4.3	2.6	2.6
Hospitality Leisure Sport Tourism	0.9	0.0	0.0	1.7	2.6	1.7	1.7	2.6	0.0	2.6	0.9
Social Sciences Interdisciplinary	1.7	0.9	0.0	0.9	1.7	1.7	0.9	0.9	0.9	0.9	0.0
Sociology	0.0	0.0	1.7	1.7	1.7	1.7	0.0	0.0	0.9	0.0	0.0
History	0.0	0.0	0.0	0.0	0.9	0.9	1.7	0.0	0.0	0.9	1.7
Humanities Multidisciplinary	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.9	1.7	1.7
Music	0.0	0.0	0.0	0.9	0.9	0.9	0.0	0.9	0.0	0.0	0.9
Anthropology	1.7	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.9
Theater	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7
Public Environ. Occup. Health	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.9	0.9
Psychology Multidisciplinary	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.9
Environmental Sciences	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9

enced *capoeiristas* and academics, one being a professor at a local university) and the results indicated a strong positive correlation (r = 0.89 and r = 0.83, respectively) [Levin *et al.* 2012].

Results

Regarding the areas of knowledge, the results showed that the articles on capoeira belonged to Social Sciences (44%), Life Sciences and Biomedicine (34%), and Arts and Humanities (22%) (Figure 2A). Results also showed that, although there was a hierarchy among these areas, all of them showed an increasing trend in the relative number of publications over the years (Figure 2B).

Thirty-nine subareas of knowledge were identified relative to the published papers. From them, those most frequent were Sport Sciences (21%), Education Educational Research (19%), Hospitality Leisure Sport Tourism (15%), and Social Sciences Interdisciplinary (11%) (Figure 3). It is interesting to note that the relative frequencies of publication in these subareas have decreased in the last years, giving way to an increase in other sub-areas (e.g., History, Humanities Multidisciplinary, Theater, and Anthropology) (Table 1).

The articles about capoeira were published in 100 journals. Among them, the following journals presented

the highest relative frequencies: Movimento (6%), Archives of Budo (5%), Ido Movement for Culture and Revista de Artes Marciales Asiaticas (4%), Periferia (3%), Journal of Exercise Physiology, Loisir et Societe/Society and Leisure, Nuances-Estudos sobre Educacao, Patrimonio e Memoria, Qualitative Research, Revista Inclusiones, Sport, Education and Society, Staps, Sciences et Techniques des Activites Physiques et Sportives and Urdimento-Revista de Estudos em Artes Cenicas (2%). The other journals obtained 1% of publications (Figure 4).

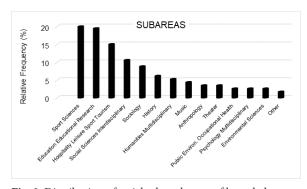


Fig. 3. Distribution of articles by subareas of knowledge.

In relation to the types of research, Figure 5 shows that the qualitative one was the main methodological trend with 52% of articles. It is also interesting to note that the second-largest type of research (descriptive)

obtained less than a third of qualitative research (17%). However, this latter was the type of research with the clearest growth tendency over the years (Figure 5B).



Fig. 4. Distribution of articles by journal.

Regarding authorship, it was composed by two hundred and sixty authors. The results showed that articles

on capoeira involved from one to ten authors. In terms of a specific number of authors per article, figure 6A shows that those most frequent were with one author (39%) followed by articles published with 3 (23%) and 2 (19%) authors. Therefore, although the percentage number of articles with one author stands out from the others, the results show that most of them were published with more than one author (61%).

Considering articles published with more than one author, the results revealed that most of them (61%) involved authors from different institutions (Figure 6B). Specifically, 39% of co-authored articles involved authors from the same institution; in 14% of the articles the authors belonged to different institutions in the same country; and, in 47% the authors belonged to institutions from different countries.

Results also showed that authors were from 17 countries (Figure 6C). Most authors were from Brazil (55%),

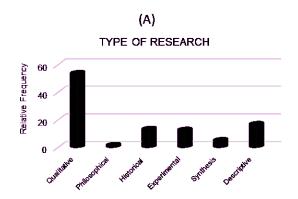
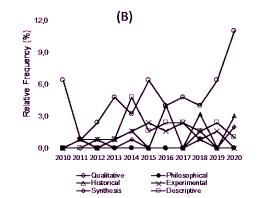
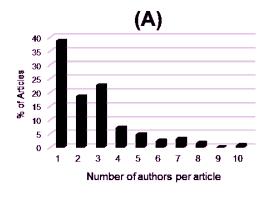
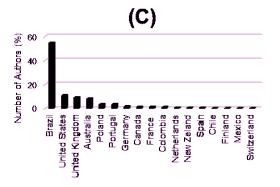
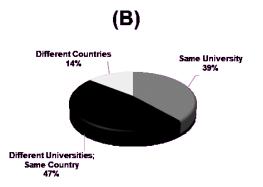


Fig. 5. Distribution of articles by type of research.









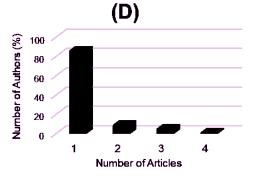


Fig. 6. Distribution of articles in relation to authorship.

which was followed by less than a third by authors from the United States of America (11%), the United Kingdom (9%) and Australia (8%). It was also revealed that the number of articles per author varied from 1 to 4. As Figure 6D shows, 86% of authors published 1 article, 9% published 2 articles, 5% published 3 articles and 1% published 4 articles. Table 2 presents the main authors in terms of number of articles. It shows that Neil Stephens (Cardiff School of Social Sciences, United Kingdom) and Sergio Moreira (Federal University of Vale do Sao Francisco, Brazil) are those with the highest number of articles.

Table 2. Authors who published the most articles on capoeira.

Table 2. Hadrors who published the me	
Author	4 Articles 3 Articles
Neil Stephens, Cardiff School of	X
Social Sciences, United Kingdom	
Sergio Moreira, Federal University of	X
Vale do Sao Francisco, Brazil	
Ana Rosa Jaqueira, University of	X
Coimbra, Portugal	Λ
Benjamin K Weeks, Griffith	X
University, Australia	Λ
Diego P. Jeronimo, Campinas State	V
University, Brazil	X
Fabiano F. da Silva, Instituto Federal	
de Educacao, Ciencia e Tecnologia,	X
Brazil	
Greg Downey, Macquarie University,	37
Brazil	X
Landulfo S. Junior, Universidade	37
Camilo Castelo Branco, Brazil	X
Renato Souza, Instituto Federal de	
Educacao, Ciencia e Tecnologia,	X
Brazil	
Robison P. Costa, Instituto Federal	
de Educacao, Ciencia e Tecnologia,	X
Brazil	
Sara Delamont, Cardiff University,	37
United Kingdom	X
Sergio Gonzalez Varela, Universidad	
Autonoma de San Luis Potosi,	X
Mexico	
Wellington Carvalho, Instituto	
Federal de Educacao, Ciencia e	X
Tecnologia, Brazil	
Alfredo A Teixeira-Araujo, Federal	
University of Vale do Sao Francisco,	X
Brazil	

Discussion

In general, scientific journals are born from the need for discussion, reflection, organization, and dissemination of knowledge about a given phenomenon. Furthermore, they reflect the concepts and methods adopted by different scientific communities. Historically, the phenomena have been grouped into categories that reflect their nature or specificity, called areas of knowledge. Analyzing the

articles by areas of knowledge, it was found that the Social Sciences were that with the largest number of articles. It may be that the different sociocultural meanings that have emerged throughout the development of capoeira, as well as the social implications of its practice, constituted the main recent focuses of researchers [e.g., Joseph 2012; Rosa 2012; Varela, Gonzalez 2013; Wulfhorst *et al.* 2014; Lipiainen 2015; Mom *et al.* 2019].

However, it is important to note that studies developed under the Life Sciences and Biomedicine and Arts and Humanities areas also showed a tendency of increasing over the years. One could say this has occurred because of the polysemic and polymorphic characteristics of the capoeira [Correa, Walter 2016]. In this case, one might think that the researchers have also been increasingly concerned with understanding capoeira from its different dimensions, implications, and contexts.

It is also interesting to note the subarea with the highest number of articles did not belong to Social Sciences. According to the Web of Science categorization, Sport Sciences subarea belongs to Life Sciences and Biomedicine. This finding is similar to the trends of studies on *jiu jitsu* [Perez-Gutierrez *et al.* 2021] and taekwondo [Perez-Gutierrez *et al.* 2015], which showed a significant number of publications in journals related to Sport Sciences. Perhaps this is related to the growth of capoeira in the sporting dimension as well. In addition to being recognized as a martial art, capoeira has been practiced as a competitive sport linked to official institutions (e.g., World Capoeira Federation; International Federation of Capoeira), whose objectives involve transforming it into an Olympic sport [Correa, Walter 2016].

There was also a similar number of articles in the Education Educational Research subarea, with a noticeable increase in the number of publications over the years. This may have resulted from the growing presence of capoeira in the school environments [Nogueira et al. 2014; Radicchi et al. 2019; Abma et al. 2020]. In fact, the pedagogical dimension has been focused on since the first publications on capoeira, mainly by the propositions of gymnastic methods [Marinho 1945].

The observed tendency of diminishing of the number of articles in these subareas in the last year may reflect the foregoing growing focus on other dimensions of capoeira. For instance, the fact of articles in the Theater subarea to have increased in the last few years may signify that attention has been paid on capoeira's dimensions of art/dance and spectacle. This can occur by focusing on the Angola game that involves tradition, memory, playfulness, malice and trickery; Amazonas and the Samba de Roda that involve dance, exhibition, beauty and party; or the Iuna with an emphasis on concentration, death, fusion and recreation from all other games [Areias 1983].

Regarding the type of research, it was found that qualitative research clearly increased over the years,

which was also the most used type. This is probably because field observations, case studies, ethnography or narrative accounts are methods present in studies of subareas of different areas of knowledge as Anthropology [Downey 2010], Development Studies [Kraft, Prythercch 2016], Environmental Sciences and Public Environmental Occupational Health [Abma 2020], History [Siqueira, Zanirato 2019], and Sport Sciences [Jordan *et al.* 2019].

The results also showed that articles on capoeira were published in a significant number of journals: one hundred. Despite this diversity, the journals with the most publications can be classified into two main groups: journals specific to martial arts/combat sports (Archives of Budo, Ido Movement for Culture, and Revista de Artes Marciales Asiaticas) and Brazilian sociocultural-oriented journals (Movimento and Periferia). It seems reasonable to think that this may be related to the fact that capoeira has been recognized as a martial art [Silva 2002; Assuncao 2005;] and to its intrinsic relationship with Brazilian political and social development [Mello 1996], respectively. It is important to highlight that these martial arts/ combat sports-oriented journals are among those with a significant number of publications on other martial arts [Perez-Gutierrez et al. 2015, 2021].

There was also a diversity of authors. There were 260 authors from 17 countries from Europe (United Kingdom, Poland, Portugal, Germany, France, Netherlands, Spain, Finland, and Switzerland), North America (United States of America, Mexico, and Canada), South America (Brazil, Colombia, and Chile), and Oceania (Australia and New Zeland). This may reflect the recognition of capoeira as an intangible heritage of humanity by UNESCO or as a cultural heritage of humanity [Lussac, Tubino 2009; Correa, Walter 2016].

Despite this diversity, most authors are Brazilian, which may be related to the sociocultural value that capoeira has for Brazilians. Although there are several gaps about the origin of capoeira, there seems to be a certain consensus that it is a Brazilian cultural manifestation, whose role has been mainly significant in Brazil's political and social history throughout the twentieth century [Capoeira 2015]. It is interesting to note that the Brazilians are among the authors that publish most. Other authors in this category are from United Kingdom, Portugal, Australia, and Mexico. It is also interesting to note that despite some hypotheses about the African influence on capoeira [Assuncao 2005], no author linked to a research institution on the African continent was found in our research.

It appears that studies on capoeira present the scientific tendency of collaboration through co-authorship [Woolley *et al.* 2015; Haddow *et al.* 2017]. It was verified there were co-authorship involving authors from the same institution (e.g., universities), different institutions in the same country, and mainly institutions from different countries. As stated by Perez-Gutierrez *et al.* [2015], collaboration refers to the

interactions between authors who might work together or not. On the one hand, these collaborations can have occurred because researchers seek help or contributions from their peers to build their knowledge. One could say that this is a basic procedure of the scientific enterprise. On the other hand, such collaborations may happen in search of increasing of number of citations, productivity, and impact [Haddow *et al.* 2017]. These results are like those of studies on other martial arts (e.g., *jiu jitsu* and *taekwondo*), which showed tendencies of publications involving collaborations [Perez-Gutierrez *et al.* 2015, 2021].

In conclusion, as with any complex phenomenon the comprehension of capoeira demands investigations at different levels of analysis (e.g., from biochemical to sociocultural), methods (e.g., qualitative and quantitative) and theoretical backgrounds. Our findings contribute not only by showing the main research trends as a scenario composed by areas and subareas of knowledge, types of research, journals, and authorship characteristics, but for clarifying the research state of the art on the capoeira as an important step for a researcher to raise questions, select research methods and define the publication target. There seems to be some recognition on the part of the scientific community about the value of publications in the form of an article, mainly because it involves peer review and easier accessibility. However, this is not the only way to publish and access knowledge. In fact, over the last few years the quality of publications of books and book chapters has been increasingly valued by the academic community, including in the elaboration of rankings of scientific publishers for the evaluation of scientific production [Ugrinowitsch et al. 2021]. Based on the above, it can be thought that not having analyzed the publications of books and book chapters can be characterized as a limitation to be considered in future studies.

Disclosure statement

The authors reported no potential conflict of interest.

References

- Abma T., Lips S., Schrijver J. (2020), Sowing seeds to harvest healthier adults: the working principles and impact of participatory health research with children in a primary school context, "International Journal of Environmental Research and Public Health", vol. 17, pp. 451; doi: 10.3390/ijerph17020451.
- Aceti M. (2013), Becoming and remaining a capoeira practitioner in Europe: Giving a meaning to one's commitment, "Loisir et Societe / Society and Leisure", vol. 36, pp. 145-160; doi: 10.1080/07053436.2013.836318.
- 3. Ader H.J., Mellenbergh G.J. (2000), Research Methodology in the Social, Behavioural and Life Sciences: Designs, Mod-

- els and Methods, SAGE Publications, Thousand Oaks, CA.
- 4. Areias A. (1983), *What is Capoeira*, Brasiliense, Sao Paulo [in Portuguese].
- Assuncao M.R. (2019), Capoeira: from slave combat game to global martial art, "Oxford Research Encyclopedia of Latin American History. History of Brazil, vol. 1824–c. 1880", pp. 3-21; doi: 10.1093/acrefore/9780199366439.013.293.
- 6. Assuncao M.R. (2005), Capoeira: The History of an Afro-Brazilian Martial Art, Routledge, London.
- 7. Brasil (2007), *Dossier: Inventory for Recording and Safe-guarding Capoeira as a Cultural Heritage of Brazil*, Governo Federal do Brasil, Brasilia [in Portuguese].
- 8. Brito E.J.C., Pimentel C.S., Santana, U.M.S. (2018), *Aphrodiasporic studies in Brazil: survey of theses (2000-2017)*, "Revista de Estudos da Religiao / Religion Studies Journal", vol. 18, pp. 301-327; doi: 10.23925/1677-1222.2018vol18 i1a14 [in Portuguese].
- Burt I., Butler S.K. (2011), Capoeira as a clinical intervention: Addressing adolescent aggression with Brazilian martial arts, "Journal of Multicultural Counseling and Development", vol. 39, pp. 48-57; doi: 10.1002/j.2161-1912.2011.tb00139.x.
- 10. Campos H. (2001), *Capoeira in the University: A Trajectory of Resistance*, Secretaria de Cultura e Turismo/Federal University of Bahia Press, Salvador [in Portuguese].
- 11. Capoeira N. (2015), *The Little Capoeira Book*, North Academic Books, Berkeley [in Portuguese].
- Correa U.C., Walter C. (2016), Motor Learning and the Teaching of Motor Skills in the Capoeira Game [in:] G. Tani, U.C. Correa [eds.], Motor Learning and the Teaching of Sport, Blucher, Sao Paulo, pp. 123-134 [in Portuguese].
- 13. Dettmann C. (2013), *History in the making: An ethnography into the roots of capoeira Angola*, "The World of Music", vol. 2, pp. 73-98.
- 14. Downey G. (2010), *Practice without theory: a neuroan-thropological perspective on embodied learning*, "Journal of the Royal Anthropological Institute", vol. 16, pp. S22-S40.
- 15. Fonseca V.L., Vieira L.R. (2014), Capoeira a Brazilian immaterial heritage: safeguarding plans and their effectiveness as public policies, "The International Journal of the History of Sport", vol. 31, pp. 1303-1311.
- Franchini E., Gutierrez-Garcia C., Izquierdo E. (2018), Olympic combat sports research output in the Web of Sci- ence: A sport sciences centered analysis, "Ido Movement for Culture. Journal of Martial Arts Anthropology", vol. 18, pp. 21-27; doi: 10.14589/ido.18.3.4.
- 17. Haddow G., Xia J., Willson M. (2017), *Collaboration in the humanities, arts and social sciences in Australia*, "The Australian Universities' Review", vol. 59, no. 1, pp. 24–36; doi: 10.3316/informit.657760962611315.
- 18. Hedegard D. (2013), Blackness and experience in omnivorous cultural consumption: Evidence from the tourism of capoeira in Salvador, Brazil, "Poetics", vol. 41, pp. 1-26.
- Jasinski T. (2008). Values and needs realized through sports and martial arts, "Ido Movement for Culture. Journal of Martial Arts Anthropology", vol. 8, pp. 98-103.
- 20. Jordan M., Wright E.J., Purser A., Grundy A., Joyes E.,

- Wright N., Crawford P., Manning N. (2019), Capoeira for beginners: Self-benefit for, and community action by, new capoeiristas, "Sport, Education and Society", vol. 24, pp. 756-769; doi: 10.1080/13573322.2018.1441145.
- 21. Joseph J. (2012), *The practice of capoeira: diasporic black culture in Canada*, "Ethnic and Racial Studies", vol. 35, no. 6, pp. 1078-1095.
- 22. Kraft K., Prytherch H. (2016), Most significant change in conflict settings: Staff development through monitoring and evaluation, "Development in Practice", vol. 26, pp. 27-37.
- 23. Levin K. (2016), *Aesthetics of hyperactivity: A study of the role of expressive movement in ADHD and Capoeira*, "American Journal of Dance Therapy", vol. 38, pp. 41-62.
- 24. Levin J., Fox J.A., Forde D.R. (2012), *Statistics for Human Sciences*, Person Prentice Hall, New Jersey.
- Lipiainen T. (2015), Cultural creolisation and playfulness: an example of Capoeira Angola in Russia, "Journal of Intercultural Studies", vol. 36, pp. 676-692; doi: 10.1080/07256868.2015.1095716.
- Lima I.T.G., Brasileiro L.T. (2020), Afro-Brazilian culture and Physical Education: a portrait of knowledge production, "Movimento / Movement", vol. 26, pp. E26022; doi: 10.22456/1982-8918.93164 [in Portuguese].
- 27. Lussac R.M.P., Tubino M.J.G. (2009), *Capoeira: the history and trajectory of a cultural heritage in Brazil*, "Journal of Physical Education", vol. 20, pp. 7-16; doi: 10.4025/reveducfis.v20i1.5815.
- 28. Marinho I.P. (1945), Subsidies for the study of capoeiragem training methodology, Imprensa Nacional, Brasilia [in Portuguese].
- 29. Mello A.S. (1996), "Esse nego e o diabo, ele e capoeira" ou da motricidade brasileira, "Discorpo", vol. 6, pp. 29-39.
- 30. Miranda M.B. (2012), *Jogo de capoeira: when actors play a 'physical dialogue'*, "Theatre, Dance and Performance Training", vol. 3, pp. 178-191; doi: 10.1080/19443927.2012.689993.
- 31. Mocarzel R.C.S. (2016), *Inclusion of people with disabilities* through fights and martial arts, "Revista de Artes Marciales Asiaticas", vol. 11, pp. 70-82, 2016; doi: 10.18002/rama.v11i2.4177.
- 32. Mom S., Coello M., Pittaway E., Downham R., Aroche J. (2019), *Capoeira Angola: An alternative intervention program for traumatized adolescent refugees from war-torn countries*, "Journal on Rehabilitation of Torture Victims and Prevention of Torture", vol. 29, n. 1, pp. 85.
- 33. Nogueira R.C., Weeks B.K., Beck B.R. (2014), *An in-school exercise intervention to enhance bone and reduce fat in girls: The CAPO Kids trial*, "Bone", vol. 68, pp. 92-99; doi: 10.1016/j.bone.2014.08.006.
- 34. Pastinha V.F. (1964), *Capoeira Angola*, Escola Grafica N. Senhora do Loreto, Salvador [in Portuguese].
- 35. Pendlebury D.A. (2008), *White paper: using bibliometrics in evaluating research*, Thomson Reuters. http://wokinfo.com/media/mtrp/UsingBibliometricsinEval_WP.pdf
- 36. Perez-Gutierrez M., Gutierrez-Garcia C., Escobar-Molina R. (2011), Terminological recommendations for improving the visibility of scientific literature on martial arts and com-

- bat sports, "Archives of Budo", vol. 7, pp. 159-166.
- Perez-Gutierrez M., Swider P., Kulpinski J., Cynarski W.J. (2021), Polish publications on jujutsu (1906-2020): bibliometric analysis, "Movimento", vol. 27, e27061; doi: 10.22456/1982-8918.111543.
- Perez-Gutierrez M., Valdes-Badilla P., Gomez-Alonso M.T., Gutierrez-Garcia C. (2015), Bibliometric analysis of taekwondo articles published in the Web of Science (1989–2013), "Ido Movement for Culture. Journal of Martial Arts Anthropology", vol. 15, pp. 8-21; doi: 10.14589/ido.15.3.4.
- Peset F., Ferrer-Sapena A., Villamon M., Gonzalez L.M., Toca-Herrera J.L., Aleixandre-Benavent R. (2013), *Scientific literature analysis of Judo in Web of Science*, "Archives of Budo", vol. 9, pp. 81-91.
- Radicchi M.R., Papertalk L., Thompson S. (2019), "It made me feel Brazilian!": Addressing prejudice through capoeira classes in a school in Western Australia, "Health Promotion Journal of Australia", vol. 30, pp. 299-302; doi: 10.1002/ hpja.219.
- 41. Rosa C. (2012), Playing, fighting, and dancing: unpacking the significance of ginga within the practice of capoeira Angola, "TDR/The Drama Review", vol. 56, pp. 141-166.
- 42. Salini S. (2016). An Introduction to Bibliometrics [in:] T. Greenfield, S. Greener [eds.], Research Methods for Postgraduates, John Wiley & Sons, pp. 130-143; doi: 10.1002/9781118763025.ch14.
- 43. Silva G.O. (2002), *Capoeira: From the Mill to the University*, CEPEUSP, Sao Paulo [in Portuguese].
- 44. Silva S.C., Vasconcelos J.G. (2014), Marginalization and heroicity of the capoeira player in the ¹9th century [in:] J.G. Vasconcelos, L.M.F. Fialho, L.R.S. Florencio [eds.], Educational practices, exclusion and resistance, Edicoes UFC, Fortaleza, pp. 87-102 [in Portuguese].
- Siqueira A.M., Zanirato S.H. (2019), Reflections on the management shared of immaterial cultural heritage: a decade of the capoeira registry, "Patrimonio e Memoria", vol. 15, no. 1, pp. 388-407.
- 46. Soares C.E.L. (2008), *The Black Guard: capoeira on the stage of politics*, "Textos do Brasil / Writings from Brazil", vol. 14, pp. 50-51 [in Portuguese].
- 47. Stork H., Astrin J. (2014), *Trends in biodiversity research a bibliometric assessment*, "Open Journal of Ecology", vol. 4, pp. 354-370. https://doi.org/10.4236/oje.2014.47033.
- 48. Teixeira B.V., Mota C.G. (2018), The practice of capoeira by people with Down syndrome: a literature review, "Acta Fisiatrica", vol. 25, pp. 40-45; doi: 10.11606/issn.2317-0190. v25i1a158836
- Thomas J.R., Nelson J.K., Silverman, S.J. (2015), Research Methods in Physical Activity, Human Kinetics Publishers, Champaign.
- Ugolotti N.M. (2015), Climbing walls, making bridges: children of immigrants' identity negotiations through capoeira and parkour in Turin, "Leisure Studies", vol. 34, pp. 19-33; doi: 10.1080/02614367.2014.966746.
- 51. Ugrinowitsch C., Correa U.C., Tani G. (2022), Proposal for the evaluation of books and book chapters for Capes area 21,

- "Movimento", vol. 27, pp. e27063, 2021; doi: 10.22456/1982-8918.112162.
- 52. Varela S., Gonzalez M. (2013), *Power and deception in Afro-Brazilian capoeira*, "Social analysis", vol. 57, no. 2, pp. 1-20.
- 53. Woolley R., Sanchez-Barrioluengo M., Turpin T., Marceau J. (2015), Research collaboration in the social sciences: What factors are associated with disciplinary and interdisciplinary collaboration?, "Science and Public Policy", vol. 42, pp. 567-582; doi: 10.1093/scipol/scu074.
- Wulfhorst C., Rocha C., Morgan G. (2014), Intimate multiculturalism: Transnationalism and belonging amongst capoeiristas in Australia, "Journal of Ethnic and Migration Studies", vol. 40, no. 11, pp. 1798-1816.

Trendy w badaniach nad capoeirą: analiza bibliometryczna

Słowa kluczowe: capoeira, sztuka walki, obszar wiedzy, produkcja naukowa, artykuł

Streszczenie.

Wprowadzenie. W ciągu ostatnich kilku dekad capoeira stała się jedną z ciekawszych sportowych aktywności. Równolegle do rosnącej liczby adeptów na całym świecie, capoeira jest coraz częściej przedmiotem zainteresowania akademickiego, szczególnie w kontekście uniwersyteckim. Problem i cel. Niniejsze badanie miało na celu określenie, w jaki sposób capoeira została potraktowana akademicko. W tym celu starano się opracować analizę bibliometryczną opublikowanych artykułów na temat capoeiry w ciągu ostatniej dekady.

Materiał i metody. W bazach danych Pubmed (n = 27), Web of Science (n = 176) i Scopus (n = 150), od 2010 do 2020 roku, przy użyciu słowa "capoeira" zostały zidentyfikowane 353 artykuły napisane w języku portugalskim, angielskim, hiszpańskim i francuskim. Następnie usunięto 227 artykułów, ponieważ powtarzały się, były niedostępne lub dotyczyły innego zagadnienia, co dało 126 artykułów do analizy. Zostały one przeanalizowane na podstawie względnej częstotliwości występowania, biorąc pod uwagę: (i) obszar wiedzy, (ii) autorstwo, (iii) rodzaj badań oraz (iv) czasopismo.

Wyniki. Artykuły na temat capoeiry należały do nauk społecznych, nauk przyrodniczych i biomedycyny oraz sztuki i nauk humanistycznych. Najczęstszymi poddziedzinami były nauki o sporcie, edukacja, badania edukacyjne, turystyka sportowa i interdyscyplinarne nauki społeczne. Movimento, Archives of Budo, Ido Movement for Culture, Revista de Artes Marciales Asiaticas i Periferia były głównymi czasopismami. Najczęściej stosowaną metodą były badania jakościowe. Większość artykułów została opublikowana we współautorstwie, w którym uczestniczyli autorzy z różnych instytucji z tego samego i różnych krajów.

Wnioski. Wyniki te przyczyniają się do wyjaśnienia stanu badań nad capoeirą, co jest ważnym krokiem dla badacza w celu postawienia pytań, wyboru metod badawczych i określenia celu publikacji.