Scientometric Analysis of Scientific Publications on Physical Therapy in Individuals with Cerebral Palsy

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ABSTRACT

The escalating volume of scientific publications underscores the growing need for public policies that support the evaluation of academic journals and the coordination of scientific research endeavors. Scientometric studies facilitate the identification and measurement of publication productivity, not only within physical therapy but also across diverse health-related disciplines. Consequently, this study aimed to delineate the profile of scientific publications concerning physical rehabilitation in individuals with cerebral palsy. The methodology involved a search for scientific articles in databases such as Web of Science and PubMed, encompassing publications in English, Portuguese, and Spanish. The initial search yielded 1,986 journals/publications, from which 690 were selected for analysis. The analysis revealed a predominance of publications in English, originating from developed countries (or nations). A total of 79 distinct physical therapy approaches were identified, disseminated across 196 different journals. This study highlights the importance of identifying the most frequently employed interventions and the platforms through which such research is disseminated.

Keywords: cerebral palsy; physical therapy; scientific production; scientific impact; scientometrics.

INTRODUCTION

Cerebral palsy (CP) refers to a group of permanent disorders affecting movement and posture, caused by non-progressive disturbances in the developing brain. Although CP is primarily a motor condition, it is frequently associated with sensory, cognitive, perceptual, communicative, and behavioral impairments, as well as secondary musculoskeletal complications (Gincota *et al*., 2021).

The epidemiology of CP has changed over time. Incidence rates range from 1.5 to 3 cases per 1,000 live births, with substantial disparities across countries with varying economic levels and geoChartic regions. Higher prevalence rates are typically observed in low-income countries (Patel *et al*., 2020; Paul *et al*., 2022).

CP results from a static, permanent, and non-progressive lesion in the central nervous system. Nevertheless, the limitations and secondary conditions stemming from this injury may evolve over time, leading to progressive changes in impairments and disabilities throughout the individual's growth and development (Schmidt; Gerzson; Almeida, 2020).

According to the literature, physical therapy seeks to restore motor function, support participation in activities and voluntary movement, and improve quality of life. Research on physical rehabilitation for individuals with CP, as a global scientific field, encompasses a wide range of data and therapeutic strategies. A comprehensive review of this literature is therefore valuable to both novice and experienced researchers, offering important insights across levels of expertise (Chen *et al*., 2022).

Scientometric analysis is a bibliometric method used to assess academic performance related to a specific field of knowledge and to evaluate researchers' productivity, quality, and scientific impact. Measuring research quality and influence is essential not only for assessing individual academic standing but also for evaluating the return on investment in scientific research (Honavar, 2021).

Scientometrics relies primarily on published literature, especially journal articles, to construct a broad picture of scientific and technological production within a particular discipline, country, or region. This approach enables researchers to trace the development and application of knowledge in a given field (Camargo; Barbosa, 2019).

Scientific studies contribute to a better understanding of the scope and direction of research efforts across disciplines, while also offering tools to assess scientific growth and information flow (Noronha; Población; Santos, 2000; Vanti, 2002). Accordingly, scientometric studies are essential for identifying research trends and tracking the evolution of knowledge (Spinak, 1998).

Given this context, filtering the ever-growing volume of scientific output is crucial for establishing both quantitative and qualitative indicators to guide scientometric evaluations in the field (Klawonn; Klamar; Turk, 2020). In this light, the present study aims to perform a scientometric analysis of the scientific literature on physical rehabilitation in individuals with CP.

METHODOLOGY

This study employed a scientometric approach based on metadata analysis, with a descriptive and exploratory focus on physical rehabilitation in individuals with CP. The research analyzed journals and publications indexed in the Web of Science database, accessed remotely via the CAPES/MEC platform, and in PubMed. The search strategy on the Web of Science platform utilized the following combination of keywords: Physiotherapy AND Cerebral Palsy.

For article retrieval in PubMed, the search terms were: ((“Cerebral Palsy/rehabilitation”[Mesh] OR “Cerebral Palsy/therapy”[Mesh])) AND “Physical Therapy Modalities” [Mesh], which were identified through searches in the Medical Subject Headings (MeSH) terms used to index PubMed content. **Figure 1** presents the number of publications identified in each database, along with the applied filters.

Figure 1 – Article/publication selection process

Keywords	Applied Filters	N
((“Cerebral Palsy/rehabilitation”[Mesh] OR “Cerebral Palsy/therapy”[Mesh])) AND “Physical Therapy Modalities”[Mesh]	Clinical Trial	515
Physiotherapy AND Cerebral Palsy	Articles, Conference papers, early access, English, Spanish and Portuguese	1471
	Total	1986

Source: Developed by the authors, 2022.

The inclusion criteria were as follows: articles/publications addressing physical therapy in individuals with CP and written in English, Portuguese, or Spanish.

The exclusion criteria were: articles that did not include the specific terms in the title, abstract, or keywords; and articles that investigated or analyzed only other forms of rehabilitation not related to physical therapy.

The journals/publications were selected in May 2022 based on the review of their abstracts. They were then organized into a Microsoft Excel® spreadsheet containing information such as authors, titles, year of publication, impact factor, Qualis ratings for Interdisciplinary and Physical Education areas, journal and study locations, languages, and physical therapy approaches.

Subsequently, all abstracts were reviewed and concisely quantified according to the eligibility criteria. A total of 690 publications were selected. The remaining items were excluded either due to duplication or for focusing on rehabilitation methods other than physical therapy.

Quantitative analysis of the selected publications was conducted using SPSS® (Statistical Package for the Social Sciences) software, version 25.0. To characterize the sample, descriptive statistics were employed, including measures of central tendency, variability, and absolute and relative frequencies.

ANALYSIS AND DISCUSSION OF RESULTS

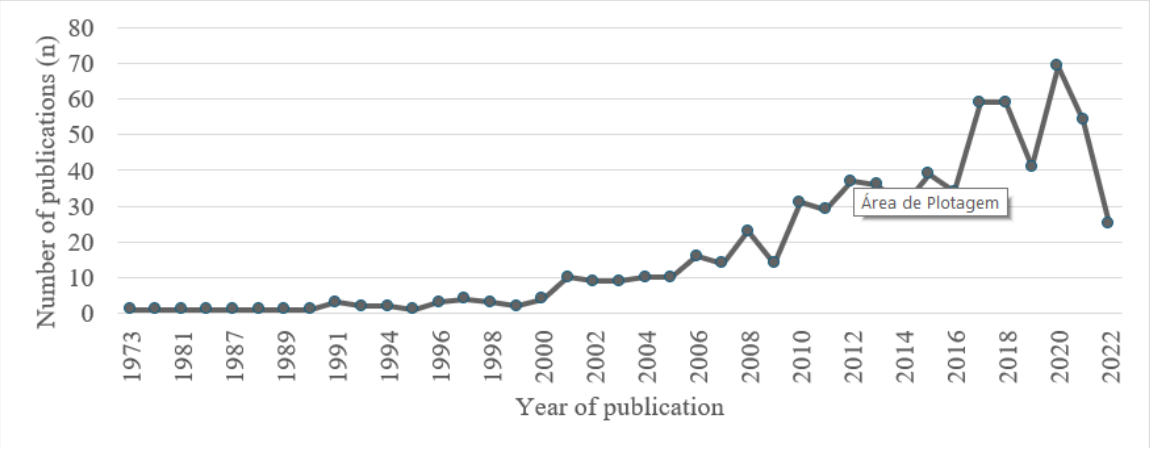
The study identified 1,986 publications through searches conducted on the Web of Science and PUBMED platforms, of which 138 were duplicates. After duplicate removal, 1,848 records remained for analysis and selection. Based on the review of titles and abstracts, 1,158 publications were excluded – 1,136 addressed other forms of rehabilitation unrelated to physical therapy, and 22 were published in languages outside the study's inclusion criteria. Consequently, 690 records met all eligibility requirements and were included in the scientometric analysis.

Chronological Development

The earliest online-available publication addressing physical therapy in individuals with cerebral palsy (CP) dated to 1973. No significant increase in output occurred until 1999. From 2000 onward, a moderate upward trend emerged, with a 0.6% annual growth. The number of publications rose from 4 to 10 in 2001 (1.4%), representing a growth rate of over 65%.

The highest number of publications occurred in 2020 (n = 69; 10%), followed by 2017 and 2018, each with 59 publications (8.6%). Before this period, output remained limited, as shown in **Chart 1.**

Chart 1 – Distribution of publications over the years



Source: Developed by the authors, 2022.

These results align with those reported by Danis and Kutluk (2021) in their bibliometric analysis, which found that early publications focused on identifying motor impairments and understanding the etiopathogenesis of CP. Subsequent studies shifted toward classification systems and functional assessments for multidisciplinary use, contributing to increased publication volume.

The surge in publications in 2020 may be associated with the emergence of SARS-CoV-2 (COVID-19), declared a global pandemic by the World Health Organization (WHO) on March 11, 2020. This event disproportionately affected individuals with pre-existing conditions, who often faced barriers to accessing health information, implementing preventive measures – particularly among low-income families – and participating in daily activities due to mandated social isolation (Brandenburg; Fogarty; Sieck, 2020; Lai *et al*., 2022).

One direct consequence of COVID-19 was social distancing, which led to prolonged interruptions in rehabilitation services for individuals with CP due to their heightened risk of infection. In response, telemedicine was adopted to help mitigate the adverse effects on functionality, mental health, and psychological well-being (Cankurtaran *et al.*, 2021).

Telemedicine also served as a communication channel connecting healthcare professionals, caregivers, and patients. A specific branch, telerehabilitation, aims to deliver rehabilitation-related services including evaluation, monitoring, intervention, education, and prevention. Although its use expanded during this period, the proportion of individuals who did not receive therapy also increased (Ben-Pazi; Beni-Adani; Lamdan, 2020; Cristinziano *et al.*, 2022; Sutter *et al.*, 2021).

As a result, research began to examine the effects of suspending in-person care. Bhaskar, Gad, and Rathod (2022) reported that 56% of individuals interrupted their therapy sessions, leading to declines in functional outcomes for those with CP.

According to the Observatory for Science, Technology and Innovation (OCTI), via the Center for Management and Strategic Studies (2021), global scientific output grew by 27.1% in 2020 compared to 2015. More than 11 million articles were indexed in the Web of Science, indicating that the pandemic contributed to an overall increase in article production and submission.

Following this peak, there was a general decline in publication volume, dropping from 7.8% in 2021 to 3.6% in 2022. As research evolved, the focus shifted away from prevalence and trend studies toward early intervention and emerging treatment approaches (Badawi; McIntyre; Hunt, 2021).

Publication Profile

English has become the lingua franca of the scientific community, enabling researchers worldwide to communicate in a shared language. Studies indicate that over 90% of scientific articles are indexed and published in English (Abad *et al*., 2020; Di Bitetti; Ferreras, 2017). This observation aligns with the findings of the present study, wherein 99.6% of the publications

(687 records) were in English, while only 0.4% were in Spanish (3 records).

Prior investigations have noted the predominance of English in articles indexed in the Web of Science database. Portuguese is the second most common language in these publications, with Spanish playing a smaller, yet significant role. Linguistic diversity often facilitates knowledge exchange at the local or national scientific level. Moreover, international collaboration can enhance research impact (Santos *et al*., 2021).

Language can significantly affect a journal's visibility and its likelihood of inclusion in international databases such as the ISI (Institute for Scientific Information, ISI Thomson). Moreover, articles published in high-impact factor journals are often perceived as being of higher quality than those in lower-impact journals (Abad *et al*., 2020; Ogden; Bartley, 2008).

The primary metric used to evaluate scientific journals is the impact factor, which ranks journals globally. It is calculated by dividing the total number of citations received in the previous two years by the number of articles published in the same period (Marziale; Mendes, 2002; Pinto; Andrade, 1999).

The impact factor indicates the relative influence of a journal within the scientific community. A higher impact factor generally suggests more rigorous and influential research, enhances a journal's credibility among researchers and readers, and supports its use in academic evaluations (Law; Leung, 2019).

In this scientometric analysis, 596 journals had a mean impact factor of 3.22 and a median of 3.02. In contrast, 94 journals lacked an assigned impact factor. Despite its limitations, the impact factor remains a central criterion in journal selection and reflects the journal's influence within its academic field.

In Brazil, one of the systems used to evaluate graduate programs is Qualis, managed by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES). This system assesses journals based on publications from the past four years authored by graduate students and faculty. However, Qualis does not directly measure the quality or credibility of a journal; if no Brazilian researchers publish in a given journal during the evaluation period, it may be excluded from the Qualis database (Barata, 2016; Brasil, 2021).

Currently, Qualis classifies journals into eight tiers based on their impact factor and relevance to specific fields, ranked from highest to lowest: A1, A2, B1, B2, B3, B4, B5, and C (no academic weight) (Barata, 2016; Garcia; Duarte, 2017).

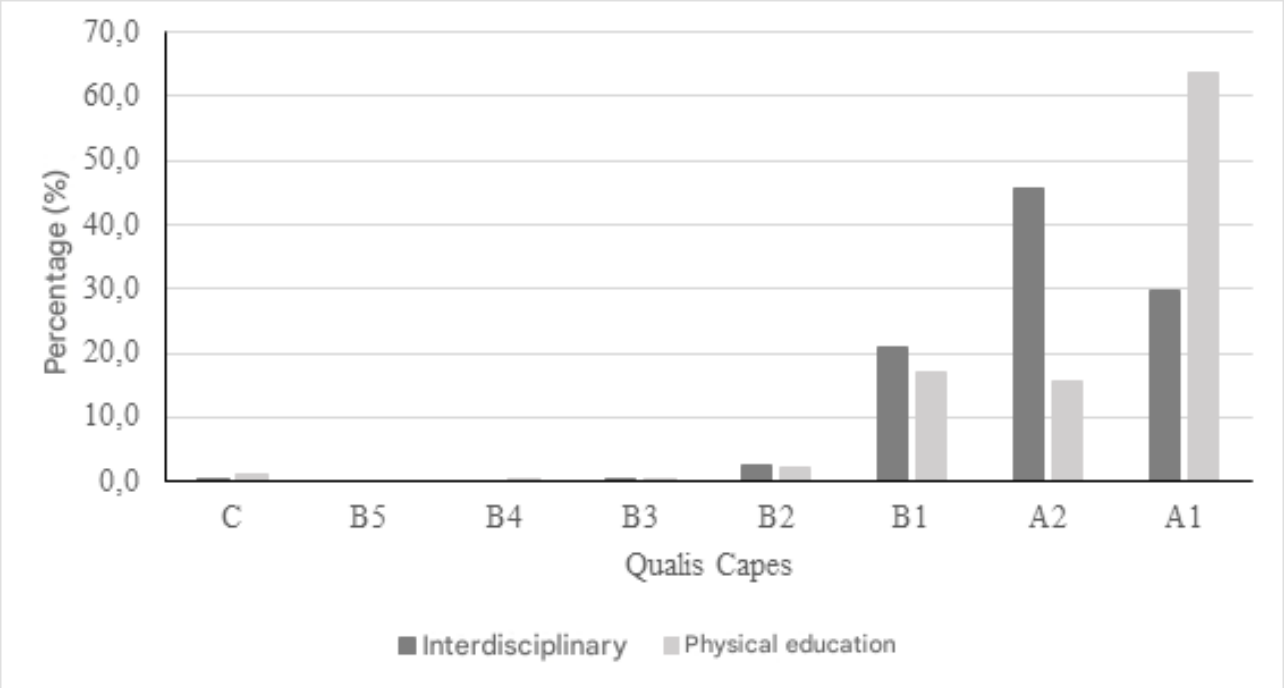
This study found that 207 journals were not included in the Qualis evaluation metric. The majority of articles were published in Qualis Physical Education A1 journals, totaling 308 (63.8%). The remaining articles were published in the following categories: Qualis B1, 82 (17.0%); Qualis A2, 75 (15.5%); Qualis B2, 10 (2.1%); Qualis C, 6 (1.2%); and Qualis B3 and B4, each with 1 (0.2%).

In contrast, the Qualis Interdisciplinary area exhibited a higher prevalence in the A2 category, with 171 articles (45.6%), followed by Qualis A1 with 112 (29.9%), Qualis B1 with 79 (21.1%), Qualis B2 with 10 (2.7%), Qualis C with 2 (0.5%), and Qualis B3 with 1 (0.3%). Additionally, the Qualis Interdisciplinary area had a greater number of journals absent from

the evaluation metric (n = 315). Notably, no article or publication was classified under the B5 metric in either the Physical Education or Interdisciplinary categories.

Chart 2 displays the percentage of studies published in scientific journals within the Interdisciplinary (n = 375) and Physical Education (n = 483) evaluation areas, according to the Qualis classification.

Chart 2 – Percentage of studies published in scientific journals according to Qualis classification in the Interdisciplinary and Physical Education areas



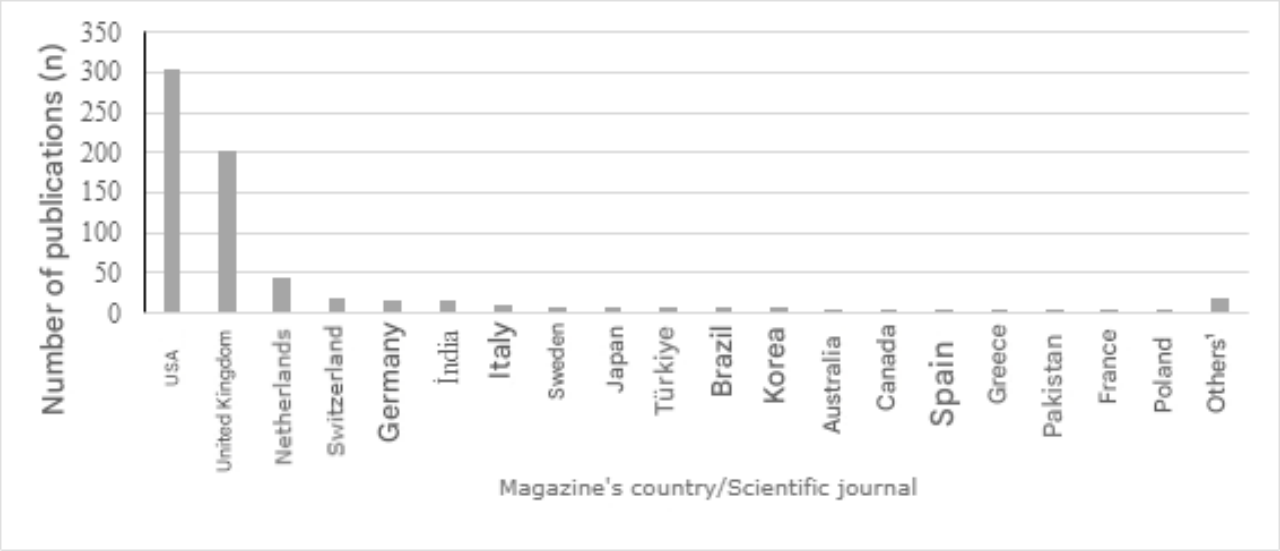
Source: Developed by the authors, 2022.

Country distribution

The United States accounted for 303 publications (43.9%), followed by the United Kingdom with 203 publications (29.4%). The remaining countries and their respective publication counts are presented in Chart 3 below.

Additionally, countries such as Bulgaria, China, Ethiopia, Iran, Lithuania, Mexico, and Thailand each contributed two publications (0.3%). Argentina, Cyprus, Ireland, Israel, and Singapore each contributed one publication (n = 1, 0.1%).

CHART 3 – Distribution of journal countries



Source: Prepared by the authors, 2022.

Note: Others[1]: Bulgaria, China, Ethiopia, Iran, Lithuania, Mexico, Thailand, Argentina, Cyprus, Ireland, Israel, and Singapore.

The results of this study are consistent with those of the systematic review by Pintér, Gál, and Molnár (2022), which indicates that research has become increasingly frequent on an international scale. The countries with the highest collaboration in scientific journals were the United States, United Kingdom, Australia, and Canada. The Netherlands, Switzerland, and Germany were also listed as collaborators, albeit with lower participation rates.

Conversely, the United States, France, Finland, Canada, and the Netherlands stood out as the primary producers when considering publication impact. Between 2008 and 2017, Brazil and the Republic of Korea were among the top producers, although a decline was observed in subsequent years. A general trend toward increased production over time is evident across all countries (Carballo-Costa *et al*., 2022).

According to the National Science Board (White, 2019) of the NSF (National Science Foundation), scientific contributions correlate with a country's economy. High-income countries such as the United States account for up to 56% of published articles. Middle-income countries like Brazil contribute 34%, while low-income countries such as Pakistan produce 9%.

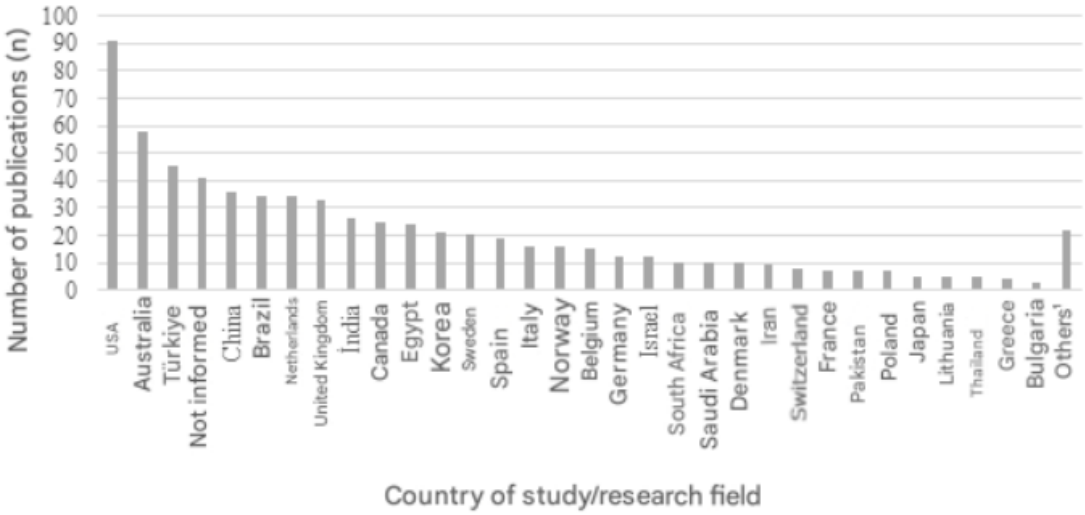
This study found that articles were published in journals from 31 different countries. However, the studies themselves were conducted in 48 countries, based on the 690 selected publications.

The ten most productive countries in conducting those researches were: the United States with 91 publications (13.2%), followed by Australia with 58 (8.4%), and Turkey with 45 (6.5%). In fourth place were publications that did not specify the study location (n = 41, 5.9%). China ranked fifth with 36 publications (5.2%), followed by Brazil and the Netherlands with 34 each (4.9%), the United Kingdom with 33 (4.8%), India with 26 (3.8%), and Canada with 25 (3.6%).

These results indicate the presence of multicenter studies, cooperative research conducted across multiple institutions, also known as megatrials. Such studies necessitate coordinated measures to ensure consistency across all centers, producing comparable data for combined analysis (Ferraz, 2020).

In total, 13 countries conducted multicenter studies. Belgium, along with France, Italy, and the United States, each accounted for 0.3% (n = 2). Israel, together with Jordan (n = 1, 0.1%), and Hungary, involving more than one research center, each conducted one study (0.1%). The remaining countries are presented in CHART 4 below.

CHART 4 – Distribution of countries where studies were conducted



Source: Prepared by the authors, 2022.

Note: Others[1]: Belgium *et al.,* Finland, Ireland, Jordan, Mexico, Bolivia, Chile, Colombia, Slovakia, Estonia, Georgia, Hungary *et al.*, Israel *et al.*, Malaysia, Portugal, and Romania.

According to the bibliometric analysis conducted by Danis and Kutluk (2021) covering the period from 1980 to 2019, the ten most active countries in scientific production were the United States, United Kingdom, Australia, Canada, Sweden, the Netherlands, Norway, Germany, France, and Italy, which is consistent with the findings of this study. Moreover, economic development is a significant factor influencing scientific output.

Wu *et al*. (2020) support the findings of this bibliometric analysis, noting that developing countries require greater attention in the care of individuals with CP, particularly due to financial constraints, which directly affect patient quality of life.

Although developing countries such as Turkey, Brazil, and Israel are among the 25 most productive in conducting research, studies on interventions involving individuals with CP are primarily driven by North American and European regions. Additionally, collaboration among countries (authors and institutions) has become increasingly prominent in this field (Pintér; Gál; Molnár, 2022).

Multicenter studies, however, have prompted differing opinions. While they enable rapid sample accumulation, they often necessitate the involvement of multiple centers. Variability between centers may influence study outcomes, as the personal and population characteristics of each research site must be considered (Kestle; Riva-Cambrin, 2019; Seifirad; Alquran, 2021).

International scientific collaboration has grown exponentially, leading researchers to seek global connections. This co-authorship network offers researchers from developing countries opportunities to publish in high-impact international journals (Wagner; Whetsell; Leydesdorff, 2017).

In this context, the number of internationally published articles by Brazilian authors is on the rise. However, the number of articles published in Brazilian journals with international collaboration remains low. In 2019, 38.9% of Brazilian researchers involved in international collaboration published in the Web of Science (McManus *et al*., 2020).

According to Martinez and Sá (2020), Brazil has periodically assumed a leadership role in scientific production in Latin America. Nevertheless, on a global scale, its contribution remains relatively below average. There is a noticeable lack of research highlighting Brazilian researchers as collaborators in globally prominent and high-impact topics that drive scientific advancement.

Physiotherapeutic Approaches

This study identified 79 distinct physiotherapeutic approaches. Conventional physiotherapy or interventions without specific descriptions accounted for the largest share of publications (n = 202, 29.27%). Virtual reality ranked second, with 58 articles (8.41%). The remaining approaches are listed in **Table 1**.

Table 1 – Physiotherapeutic approaches in the studies

Physiotherapeutic approach		Number of articles (n)	Percentage (%)
1	Conventional physiotherapy / unspecified	202	29,27%
2	Virtual reality	58	8,41%
3	Constraint-induced movement therapy	56	8,12%
4	Electrical stimulation	53	7,68%
5	Progressive resistance exercise / Anaerobic exercise / Strength training	30	4,35%
6	Aerobic exercise / Endurance training	21	3,04%
7	Kinesiotherapy	19	2,75%
8	Bobath / Neurodevelopmental therapy	18	2,61%
9	Bimanual therapy	18	2,61%
10	Hippotherapy	17	2,46%

11	Kinesiotherapy + Robotic training	16	2,32%
12	Treinamento locomotor / Gait training	15	2,17%
13	Vibration therapy	12	1,74%
14	Physiotherapy respiratória	11	1,59%
15	Electrical stimulation + Physiotherapy	9	1,30%
16	Transcranial stimulation	9	1,30%
17	Manual therapy	8	1,16%
18	Aquatic exercise / Hydrotherapy	7	1,01%
19	Kinesio Taping	7	1,01%
20	Estimulação proprioceptiva / Treino de equilíbrio	6	0,87%
21	Physiotherapy + Gait training/mobilidade	6	0,87%
22	Telerreabilitação	5	0,72%
23	Vibration therapy + Physiotherapy	5	0,72%
24	Conductive education	4	0,58%
25	Virtual reality + Physiotherapy	4	0,58%
26	Mirror therapy	4	0,58%
27	Functional training	4	0,58%
28	Vojta approach	3	0,43%
29	Treadmill training + Physiotherapy	3	0,43%
30	Adeli suit	2	0,29%
31	Physiotherapy + Therapeutic taping/Kinesio Taping	2	0,29%
32	Electrical stimulation + ciclismo	2	0,29%
33	Physiotherapy + Conductive education	2	0,29%
34	Physiotherapy + Treino de biofeedback	2	0,29%
35	Physiotherapy + Treino de equilíbrio	2	0,29%
36	PediaSuit	2	0,29%
37	Terapia do espelho + Physiotherapy	2	0,29%
38	Terapia robótica	2	0,29%
39	Treinamento pliométrico	2	0,29%
40	Vojta approach + Bobath	1	0,14%
41	Aculaser terapia	1	0,14%
42	Acupuncture + Physiotherapy	1	0,14%
43	Acupuncture a laser + Physiotherapy	1	0,14%
44	Adeli suit + Neurodesenvolvimento	1	0,14%
45	Bobath + Kinesio Taping	1	0,14%
46	Bobath + Conductive education	1	0,14%

47	Bobath + Pilates modificado	1	0,14%
48	Bobath + Physiotherapy	1	0,14%
49	Bobath + Reflexology	1	0,14%
50	Cycling estacionário	1	0,14%
51	Motor dexterity	1	0,14%
52	Eletroacupuntura	1	0,14%
53	Electrical stimulation + Kinesio Taping	1	0,14%
54	Electrical stimulation + Laser therapy	1	0,14%
55	Transcranial stimulation + Constraint-induced movement therapy	1	0,14%
56	Physiotherapy + Acupuncture	1	0,14%
57	Physiotherapy + Cycling estacionário	1	0,14%
58	Physiotherapy cardiorrespiratória	1	0,14%
59	Physiotherapy respiratória + Treino de equilíbrio	1	0,14%
60	Neurobehavioral intervention	1	0,14%
61	Osteopathy + Acupuncture	1	0,14%
62	Osteopathy + Myofascial release + Acunpuntura	1	0,14%
63	Osteopathy craniana	1	0,14%
64	Proprioceptive Neuromuscular Facilitation (PNF)	1	0,14%
65	Virtual reality + Treino em esteira	1	0,14%
66	Reflexology + Physiotherapy	1	0,14%
67	Non-conventional balance therapy	1	0,14%
68	Terapia de espelho + Bimanual therapy	1	0,14%
69	Constraint-induced movement therapy + Estimulação elétrica	1	0,14%
70	Constraint-induced movement therapy + Virtual reality	1	0,14%
71	Constraint-induced movement therapy modificada + Treinamento bimanual	1	0,14%
72	TheraSuit	1	0,14%
73	Trampolim + Physiotherapy	1	0,14%
74	Treinamento bimanual + Transcranial stimulation	1	0,14%
75	Strength training + ciclismo	1	0,14%
76	Treadmill training + Strength training	1	0,14%
77	Treadmill training + ciclismo	1	0,14%
78	Treadmill training com suporte de peso corporal	1	0,14%
79	Oral motor training	1	0,14%

Source: Prepared by the authors, 2022.

Physiotherapeutic interventions for individuals with CP aim to improve motor control quality and functionality. Although publications on this topic are extensive, a consensus regarding the initial prioritization of activities and approaches to enhance motor acquisition remains elusive (Das; Ganesh, 2019).

The literature presents varying levels of scientific evidence (weak, moderate, and strong) for these approaches. In the systematic review by Novak *et al*. (2020), motor interventions demonstrated effectiveness in improving motor performance in individuals with CP. These patients particularly benefited from training-based interventions such as constraint-induced movement therapy, bimanual training, task-oriented training, mobility training, and body weight-supported treadmill training.

A notable increase in publications concerning hippotherapy, virtual reality, and vibration therapy has been observed. The application of these interventions should be tailored based on clinical judgment, individual preferences, motor control, and functional abilities (Das; Ganesh, 2019; Szturm *et al*., 2022).

Physiotherapy, frequently implemented in conjunction with other approaches, was commonly reported in the study. Combined training can positively influence patient participation; however, evidence regarding its effects on muscle strength and/or aerobic fitness remains limited. Conversely, stronger evidence supports strength training and functional/task-specific training (Moral-Munoz *et al*., 2018; Ryan *et al*., 2017).

Moreover, the environment in which the patient is situated plays a crucial role in performance, acting as a modulator of care. Interventions should be aligned with daily tasks and activities, emphasizing self-initiated movements aimed at achieving a specific goal (Novak *et al*., 2020).

Following the analysis, 196 distinct journals were identified. The five primary journals contributing to the literature between 1973 and 2022, each with more than 20 articles, were: Developmental Medicine and Child Neurology (11.59%), Clinical Rehabilitation (3.91%), Pediatric Physical Therapy (3.77%), BMC Pediatrics (3.62%), and Developmental Neurorehabilitation (3.62%). The remaining journals are listed in **Table 2**.

Table 2 – Journals publishing on physiotherapeutic treatment in individuals with CP (1973 to 2022)

Journal		Number of articles (n)	
1	*Developmental Medicine and Child Neurology*	**80**	**11,59%**
2	*Clinical Rehabilitation*	**27**	**3,91%**
3	*Pediatric Physical Therapy*	**26**	**3,77%**
4	*BMC Pediatrics*	**25**	**3,62%**
5	*Developmental Neurorehabilitation*	**25**	**3,62%**
6	*Disability and Rehabilitation*	**25**	**3,62%**

7	*Physical & Occupational Therapy in Pediatrics*	**22**	**3,19%**
8	*Research in Developmental Disabilities*	**21**	**3,04%**
9	*Physiotherapy Theory and Practice*	**19**	**2,75%**
10	*American Journal of Physical Medicine & Rehabilitation*	**18**	**2,61%**
11	*Neurorehabilitation*	**18**	**2,61%**
12	*Archives of Physical Medicine and Rehabilitation*	**16**	**2,32%**
13	*Neurorehabilitation and Neural Repair*	**14**	**2,03%**
14	*Journal of Pediatric Rehabilitation Medicine*	**13**	**1,88%**
15	*BMC Neurology*	**9**	**1,30%**
16	*BMJ Open*	**9**	**1,30%**
17	*Physical Therapy*	**9**	**1,30%**
18	*European Journal of Paediatric Neurology*	**7**	**1,01%**
19	*Journal of Rehabilitation Medicine*	**7**	**1,01%**
20	*Gait & Posture*	**6**	**0,87%**
21	*Games For Health Journal*	**6**	**0,87%**
22	*Journal of Child Neurology*	**6**	**0,87%**
23	*Journal of Physical Therapy Science*	**6**	**0,87%**
24	*Pediatrics*	**6**	**0,87%**
25	*Child Care Health and Development*	**5**	**0,72%**
26	*European Journal of Physical and Rehabilitation Medicine*	**5**	**0,72%**
27	*European Journal of Physiotherapy*	**5**	**0,72%**
28	*Journal of Alternative and Complementary Medicine*	**5**	**0,72%**
29	*Complementary Therapies in Clinical Practice*	**4**	**0,58%**
30	*International Journal of Environmental Research and Public Health*	**4**	**0,58%**
31	*Journal of Musculoskeletal & Neuronal Interactions*	**4**	**0,58%**
32	*Journal of Neuroengineering and Rehabilitation*	**4**	**0,58%**
33	*Neuropediatrics*	**4**	**0,58%**
34	*Pediatric Neurology*	**4**	**0,58%**
35	*Physiotherapy Canada*	**4**	**0,58%**
36	*Plos One*	**4**	**0,58%**
37	*Sensors*	**4**	**0,58%**
38	*Turkish Journal of Physiotherapy Rehabilitation-Turk Fizyoterapi Ve Rehabilitasyon Dergisi*	**4**	**0,58%**
39	*BMC Musculoskeletal Disorders*	**3**	**0,43%**
40	*Brain & Development*	**3**	**0,43%**
41	*Brazilian Journal of Physical Therapy*	**3**	**0,43%**

42	*International Journal of Therapy and Rehabilitation*	**3**	**0,43%**
43	*Journal of Back and Musculoskeletal Rehabilitation*	**3**	**0,43%**
44	*Physiotherapy Research International*	**3**	**0,43%**
45	*Somatosensory and Motor Research*	**3**	**0,43%**
46	*Technology and Health Care*	**3**	**0,43%**
47	**Other journals (with 1 or 2 publications on the subject)**	**186**	**26,95%**

Source: Prepared by the authors, 2022.

Bibliometric studies have demonstrated that the most relevant articles are published in journals with a neurological focus, such as Developmental Medicine and Child Neurology and Journal of Child Neurology (Mu *et al*., 2012). Both of these journals ranked among the top 5 in the current study.

Wu *et al*. (2020) also highlighted Developmental Medicine and Child Neurology, NeuroImage: Clinical, and Pediatrics as key journals providing insight into the diagnosis, underlying mechanisms, and treatment of individuals with CP.

Moreover, the journals with the highest number of publications between 1980 and 2019 corroborate previous findings. Developmental Medicine and Child Neurology, Journal of Pediatric Orthopedics, Journal of Child Neurology, Developmental Neurorehabilitation, and Pediatric Physical Therapy were among the most influential sources, each publishing over 100 articles during that period. Researchers interested in CP-related physiotherapy are advised to follow these journals closely (Danis; Kutluk, 2021).

CONCLUSION

Although CP originates in childhood, its impact endures throughout the individual's lifespan. Therefore, identifying the most frequently employed intervention types and the platforms where related publications can be found is essential. This study underscores the importance of these factors by demonstrating that publications are predominantly in English and originate primarily from developed countries – particularly in North America and Europe.

Moreover, the data reveal a significant evolutionary trend in scientific output over the past two decades. This notable growth in recent years reflects not only an increase in volume but also a likely maturation and recognition of the relevance of this field of study.

Despite the substantial body of information produced on the subject, Brazil still exhibits a low frequency of publications. To expand scientific production in Brazil, the development of multicenter studies is recommended, particularly through publication in Brazilian journals.

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