

# Pain research: bibliometric analysis of scientific publications of a Brazilian Research Institution\*

*Pesquisa em dor: análise bibliométrica de publicações científicas de uma Instituição de Pesquisa do Brasil*

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## ABSTRACT

**BACKGROUND AND OBJECTIVES:** Bibliometric analyses of scientific publications on pain are scarce in the literature. This study aimed at analyzing the scientific production on pain of a Research Institute.

**METHOD:** This is a retrospective cohort study analyzing articles published in indexed journals, by professionals affiliated to a Research Institute of a non-for-profit general hospital of the city of São Paulo, from 2008 to 2011. Searched databases were Medline, SCOPUS, Web of Science, Scielo and LILACS.

**RESULTS:** During the analyzed period, 47 articles have addressed pain, with mean of 11 articles/year in ascending trend. As to intellectual authorship, these publications have involved 258 authors, with predominance of physicians (77%). Twenty-four studies were carried out in collaboration with other institutions and 24 and, from them, 22 in partnership with Universities. Migraine (25.7%) and headache (14.9%) were most studied sub-themes, and epidemiological designs were the most observed (47%). Most researches (71%) were published by journals with impact factor, being 27 articles (57.4%) published by eight pain specialist journals. Mean impact factor of publications was 2.32. Twenty articles were quoted (42.4%): 102 by Web-of-Science and 135 by SCOPUS. Two articles were quoted twice by Scielo.

**CONCLUSION:** Although studies on pain are still a small part of total production of the analyzed institute, they show potential for growth. Most articles were published by international journals with impact factor and quotations which indicate quality of produced knowledge.

**Keywords:** Bibliometric indicators, Pain, Scientific publications.

## RESUMO

**JUSTIFICATIVA E OBJETIVOS:** Análises bibliométricas das publicações científicas sobre dor são escassas na literatura. O objetivo foi analisar a produção científica sobre a temática da dor de um instituto de pesquisas.

**MÉTODO:** Estudo de coorte retrospectivo que analisou artigos publicados em periódicos indexados, de profissionais afiliados a um instituto de pesquisas de um hospital geral, filantrópico, da cidade de São Paulo, no período de 2008 a 2011. As bases de dados utilizadas foram Medline, Scopus, Web of Science, Scielo e LILACS.

**RESULTADOS:** No período analisado 47 artigos abordaram a temática da dor, com média de 11 artigos/ano em linha de tendência ascendente. Quanto à autoria intelectual, essas publicações envolveram 258 autores, com predominância da categoria profissional médica (77%). Foram realizados em colaboração com outras instituições 24 estudos e, 22 desses, em parceria com universidades. Enxaqueca (25,7%) e cefaleia (14,9%) foram os subtemas mais estudados e desenhos epidemiológicos foram os mais observados (47%). A maioria das pesquisas realizadas (71%) foi publicada em periódicos com fator de impacto, sendo 27 artigos (57,4%) divulgados em oito revistas especializadas em dor. A média do fator de impacto das publicações foi de 2,32. Receberam citações 20 artigos (42,4%): 102 na Web of Science e 135 na Scopus. Dois artigos receberam cinco citações na Scielo.

**CONCLUSÃO:** Embora os estudos sobre a temática da dor constituam pequena parcela da produção total do instituto analisado, estes demonstram potencial de crescimento. A maioria dos artigos foi publicada em periódicos internacionais e com fator de impacto e citações que indicam a qualidade do conhecimento produzido.

**Descritores:** Dor, Indicadores bibliométricos, Publicações científicas.

## INTRODUCTION

Pain follows humankind history and medicine itself. Ancient reports show the concern not only with understanding the painful phenomenon, but also with finding resources to effectively manage and control it.

Theories have been proposed along time and, as from the 1970s, pain investigations have gained new breath with the creation

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of the International Association for the Study of Pain (IASP). Painful mechanisms and different treatments have been addressed by scientific publications, in addition to research results which are spread throughout international events, increasing the production of knowledge in this area<sup>1</sup>.

Scientific production means each and every type of research and text production developed for gains in technological, social and human progress. It is through their publication that scientific works gain more expression and continuity, since they disclose their process of knowledge production as from any paradigm being considered<sup>2</sup>.

Producing and communicating knowledge may assure the exercise of investigation, the exchange of ideas and potential solutions for human problems, especially to relieve pain and its consequent distress.

Study groups have stood out in recent decades in scientific research, as well as in teaching and assistance in specialized centers, in a multidisciplinary perspective. A bibliometric analysis of the period 1990-2001 shows pain among the five most researched topics by controlled and randomized clinical trials<sup>3</sup>.

In Brazil, the Brazilian Society for the Study of Pain (SBED), founded by a group of physicians in 1982, has a long time gathered professionals from different specialties interested in studying and managing pain. In addition, major health assistance excellence centers have given special attention to pain management, be it by incorporating it as the fifth vital sign, which assumes regular and systematic pain evaluation, be it by available treatments or even by generating knowledge of their research centers investigators.

However, publications on the profile and evolution of the scientific literature about pain, even international, are scarce<sup>1</sup>, which makes difficult to further grasp the contribution of Brazilian researchers, especially those generated outside public universities. The advancement of knowledge produced by researchers should be translated into accessible information for the scientific community. Bibliometry is a way to place the production of a country in the international context, of an institution in its country and even of scientists with regard to their own communities. There are still many pain knowledge gaps, especially in Brazil, so it is necessary to establish the state of the art of its knowledge, mapping human resources, assistance and research to know where knowledge is.

The institution being studied has major influence in spreading knowledge because it is an excellence center in research and assistance, with pain management centers (Chronic Pain Group, Pain Group, Headache Group, Spine Group). In addition, it fosters research being acknowledged in 2012 with the SciVal Brasil Award, which recognizes Brazilian teaching and research institutions which stand out by the excellence of their scientific production, receiving the Citations per document category award.

The question posed by this study is: would locally generated knowledge cause any impact on pain scientific production state of the art or would it be limited to the resolution of isolated issues of the assistance practice of the center where it has been originated? So, this study aimed at analyzing and characterizing the scientific production on pain of a private teaching and research institute.

## METHOD

This is a retrospective cohort study carried out by checking the production of articles published in indexed journals, by researchers and/or assistance professionals and clinical staff acting in the research institute of a general non-for-profit hospital of the city of São Paulo. This research institute was founded in 1998 with the mission of "being reference in research, generation and disclosure of knowledge about health, for the benefit of society". It is responsible for managing institutional scientific production both of its group of researchers and of the institution's clinical staff and multidisciplinary team.

Articles published from 2008 to 2011 were analyzed in January 2012. Data were obtained from the publications monitoring carried out by the research center library.

Publications were monitored by an alert sign with query syntaxes or strategies by researchers name and institutions name, in all their variations. Query strategies were recorded in Medical Literature Analysis and Retrieval System Online (Medline), Scopus, Institute of Scientific Information Web of Knowledge Database (Web of Science), Scientific Electronic Library Online (SciELO) and Latin American and Caribbean Literature in Health Sciences (LILACS) databases, which stratify by researchers and institutions affiliated to these publications. By means of electronic daily or weekly notifications received from these databases, results were compared and each element of recovered records (author, title, source, pagination, etc.) was made consistent to prevent data duplication.

Recovered records were processed and indexed in a database which, in addition to bibliographic information, generates information about citations, impact factor, participation of other institutions, direct access to the electronic article and links to research projects approved by the institution.

Only scientific articles published in national and international journals indexed in respective databases were considered. Duplications and other publications, apart from scientific articles, were excluded.

The scientific production was analyzed according to: number of articles/year; number of authors; professional category of authors; cooperation with other institutions; sub-themes and types of study; journal impact factor (Journal Citation Reports – JCR – Web of Science); Qualis classification/Coordination of Improvement of Higher Level Education Personnel (Capes) and number of citations (Web of Science, Scopus, SciELO). Data were analyzed by the Microsoft Excell 2007 program and by descriptive statistics.

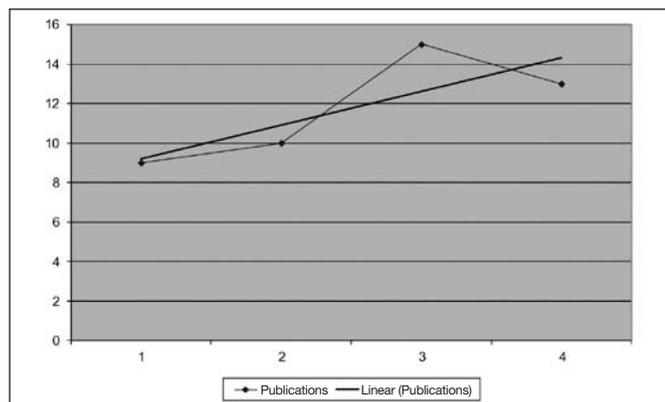
This study was approved by the Committee Research Institutional sob nº 1651/2012.

## RESULTS

### Scientific production and intellectual authorship

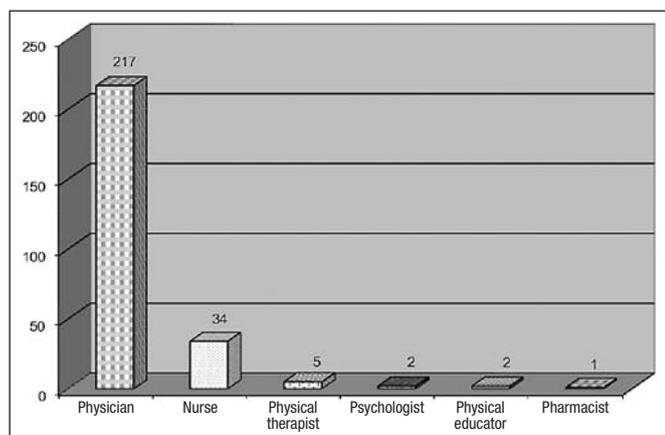
During the analyzed period of four years, total production of the institution corresponded to 1366 articles. From these, 47 (3.4%) addressed pain. Production distribution per year is shown in graph 1, where data indicate that scientific pro-

duction on pain, although small (mean of 11 articles/year), is growing as reflected by the trend line.



Graph 1 – Distribution of scientific articles by publication year in the period between 2008 and 2011. São Paulo, 2012.

With regard to intellectual authorship, these publications have involved 261 authors distributed by professional category, as shown in graph 2.



Graph 2 – Distribution of authors by professional category (2008-2011). São Paulo, 2012.

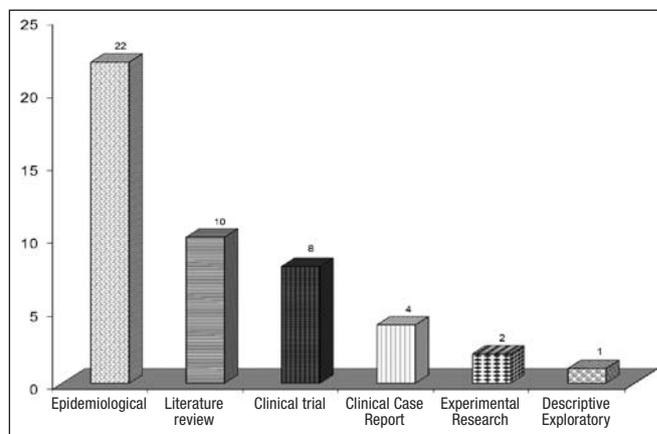
Physicians have participated in 36 articles, nurses in 13 articles and only three publications have evidenced the presence of other professionals (physical educator, physical therapist, psychologist and pharmacist). Multidisciplinary teams were responsible for 14 articles; 24 studies (51%) were carried out in cooperation with other institutions, being 22 (46%) in partnership with national and international universities.

**Sub-themes and types of study**

As to the distribution of studied themes, the most common were: migraine (25.7%); headache (14.9%); pharmacological treatment (10.7%); postoperative pain (8.6%); pelvic pain (6.5%); pain evaluation (4.2%) arthritis (4.2%); and musculoskeletal pain (4.2%). In a smaller extent, other 10 themes were addressed: coping and pain; endometriosis; fibromyalgia; genetics; non-pharmacological treatment; cancer pain; pediatric pain; placebo; painful procedures; and spirituality and pain

(21%; 2.1% for each theme).

As to study designs, it has been observed a larger number of epidemiological studies (47%) corresponding to cohort, case control and transversal studies, as shown in graph 3.



Graph 3 – Distribution of published studies design (2008-2011). São Paulo, 2012.

**Journals, impact factor and language**

Articles were published in 24 journals, most of them international, the distribution, Qualis classification and impact factor of which are shown in table 1. As to language, 73% were pub-

Table 1 – Distribution of articles per journal and impact factor of scientific production on pain (2008-2011). São Paulo, 2012.

Journals	QUALIS	IF	f	%
Arthritis Care & Research	A1	4.851	1	2.1
Cephalalgia*	A1	3.430	5	10.7
European Journal of Neurology	A2	3.692	1	2.1
Journal of Rheumatology	A2	3.695	1	2.1
Anesthesia and Analgesia*	A1	3.286	1	2.1
Clinical Journal of Pain*	A2	2.813	1	2.1
Headache*	A2	2.524	3	6.5
Journal Orthopaedic Sports & Physical Therapy	B1	3.000	1	2.1
Journal of Headache and Pain*	B1	2.427	3	6.5
Journal of Rehabilitation Medicine	B1	2.049	1	2.1
Current Pain and Headache Reports*	B2	1.662	5	10.7
Medical Hypotheses	B2	1.150	1	2.1
Midwifery	A1	1.777	1	2.1
Journal of Midwifery & Womens Health	A1	1.163	1	2.1
Pediatrics International	B2	0.626	1	2.1
Arquivos de Neuro-Psiquiatria	B1	0.722	2	4.2
Acta Paulista de Enfermagem	A2	0.273	2	4.2
Journal of Pain Research*	A1	-	1	2.1
Expert Review of Neurotherapeutics	A2	-	1	2.1
Handbook of Clinical Neurology	B1	-	1	2.1
São Paulo Medical Journal	B1	-	1	2.1
Revista Dor*	B2	-	8	17.1
Einstein	B3	-	3	6.5
Pediatria (São Paulo)	B3	-	1	2.1
<b>Total</b>			<b>47</b>	<b>100</b>

IF = impact factor; \* Pain-related journals. Source: 2011 JCR Science Edition.

lished in English, 19% in Portuguese and English, and 8% in Portuguese.

Most published studies (6%) were published in journals with impact factor, with emphasis on 27 articles (57.4%) published in eight of (approximately) 40 journals specialized in pain. Mean impact factor of publications was 2.32 (variation from 0.273 to 4.851).

Although the impact factor or any other journal classification aims at assuring the quality of the journal and of the review process by peers, it not always reflects the quality of the individual article. Quantitative pain indicators may be seen merely as the scientific interest in developing research activities in this field and need to be complemented with indicators qualifying the merit of the content, such as citations analysis<sup>1</sup> shown in table 2. Twenty articles (42.5%) have received citations: 102 in Web of Science and 135 in Scopus. Two articles were cited in Scielo (total of five citations).

## DISCUSSION

The analysis of scientific publications on pain produced by this institution shows an alignment of the organizational structure with regard to strategic assistance groups, but also observes that it follows international publications trend and profile.

Data have shown that the Brazilian production in 1977 was of three articles; in 1987, two articles; in 1997, 40 articles, and in 2007, 95 articles. The increasing production made Brazil jump to the 15<sup>th</sup> place in the international ranking (with emphasis in orofacial pain, which does not reflect the Brazilian reality for being linked to state of the art researchers and groups in this area), according to data published in 2010 about the evolution of scientific literature on pain during 30 years (1976-2007)<sup>1</sup>. However, these results may be improved. A retrospective cohort study evaluating the 348 studies presented in the 9<sup>th</sup> Brazilian Congress on Pain has identified that only 31 were published

Table 2 – Distribution of articles with citations in Web of Science and Scopus databases. São Paulo, 2012.

Artigos	Web of Science	Scopus
Chappell AS, Littlejohn G, Kajdasz DK, et al. A 1-year safety and efficacy study of duloxetine in patients with fibromyalgia. <i>Clin J Pain</i> . 2009;25(5):365-75.	19	20
Vieira DS, Masruha MR, Gonçalves AL, et al. Idiopathic intracranial hypertension with and without papilloedema in a consecutive series of patients with chronic migraine. <i>Cephalalgia</i> . 2008;28(6):609-13.	18	19
Queiroz LP, Peres MF, Piovesan EJ, et al. A nationwide population-based study of tension-type headache in Brazil. <i>Headache</i> . 2008;49(1):71-8.	17	17
Fukui PT, Gonçalves TR, Strabelli CG, et al. Trigger factors in migraine patients. <i>Arq Neuropsiquiatr</i> . 2008;66(3A):494-9.	14	19
Ruperto N, Lovell DJ, Li T, et al. Pediatric Rheumatology International Trials Organisation (PRINTO); Pediatric Rheumatology Collaborative Study Group (PRCSG). Abatacept improves health-related quality of life, pain, sleep quality and daily participation in subjects with juvenile idiopathic arthritis. <i>Arthritis Care Res (Hoboken)</i> . 2010;62(11):1542-61.	7	5
Fukuda TY, Rossetto FM, Magalhães E, et al. Short-term effects of hip abductors and lateral rotators strengthening in females with patellofemoral pain syndrome: a randomized controlled clinical trial. <i>J Orthop Sports Phys Ther</i> . 2010;40(11):736-42.	5	6
Tanuri FC, de Lima E, Peres MF, et al. Melatonin treatment decreases c-fos expression in a headache model induced by capsaicin. <i>J Headache Pain</i> . 2009;10(2):105-10.	4	4
Podgaec S, Gonçalves MO, Klajner S, et al. Epigastric pain relating to menses can be a symptom of bowel endometriosis. <i>Sao Paulo Med J</i> . 2008;126(4):242-4.	4	6
Valença MM, Medeiros FL, Peres MF, et al. Neuroendocrine dysfunction in fibromyalgia and migraine. <i>Curr Pain Headache Rep</i> . 2009;13(5):358-64.	4	3
Kiche MT, Almeida FD. Therapeutic toy: strategy for pain management and tension relief during dressing change in children. <i>Acta Paul Enferm</i> . 2009;22(2):125-30.	2	2
Conforto AB, Lois LA, Amaro E Jr, et al. Migraine and motion sickness independently contribute to visual discomfort. <i>Cephalalgia</i> . 2010;30(2):161-9.	2	2
Fukushima FB, Barros GA, Marques ME, et al. The neuraxial effects of intraspinal amitriptyline at low concentrations. <i>Anesth Analg</i> . 2009;109(3):965-71.	1	1
Masruha MR, Lin J, de Souza Vieira DS, et al. Urinary 6-sulphatoxymelatonin levels are depressed in chronic migraine and several comorbidities. <i>Headache</i> . 2010;50(3):413-9.	1	1
Peres J, Gonçalves A, Peres M. Psychological trauma in chronic pain: Implications of PTSD for fibromyalgia and headache Disorders. <i>Curr Pain Headache Rep</i> . 2009;13(5):350-7.	1	1
Paiva ES, Costa ED, Scheinberg M. Fibromyalgia: an update and immunological aspects. <i>Curr Pain Headache Rep</i> . 2008;12(5):321-6.	1	1
Lucchetti G, Peres MF. The prevalence of migraine and probable migraine in a brazilian favela: results of a community survey. <i>Headache</i> . 2011;51(6):971-9.	0	1
Peres MF, Lucchetti G, Mercante JP, et al. New daily persistent headache and panic disorder. <i>Cephalalgia</i> . 2011;31(2):250-3.	0	1
Jorge LL, Feres CC, Teles VE. Topical preparations for pain relief: Efficacy and patient adherence. <i>J Pain Res</i> . 2011;4(1):11-24.	0	1
Speciali JG, Peres M, Bigal ME. Migraine treatment and placebo effect. <i>Expert Rev Neurother</i> . 2010;10(3):413-9.	0	2
Queiroz LP, Peres MF, Piovesan EJ, et al. A nationwide population-based study of migraine in Brazil. <i>Cephalalgia</i> . 2009;9(6):642-9.	0	16

(8.9%), mostly in Brazilian journals (64.5%), being considered much lower than the international mean. The author has also pointed the need to encourage professionals dealing with pain to publish their studies, since this is the best way to expose their ideas and experiences to the scientific world<sup>4</sup>.

It is observed, however, that Brazilian production in general faces major challenges, not only quantitative but also qualitative, because the quality of such production – measured by the number of citations generated by an article in studies of other scientists, after being published – is still below the international mean.

Although there are no comparative data in the literature aimed at professional categories, it is believed that the authorship profile in other countries has similar distribution. The participation of a larger number of medical researchers has been observed when the subject is research involving clinical issues. It is also believed that other professionals, such as those dedicated to orofacial pain, have not appeared in this study due to strategic peculiarities of a quaternary hospital where our research institute is inserted, not characterizing a specific demand for this professional in such a limited group of investigators of this theme in the institution.

In the current Directory of Research Groups in Brazil, of the National Council of Scientific and Technological Development (CNPq), the search for the theme pain, stratified by area (within the broad Health Sciences area), shows the following distribution: 62 Medicine groups, 26 Dentistry groups, 21 Physical Therapy and Occupational Therapy groups, 17 Nursing groups and 8 Pharmacy groups.

Cephalic pain was the most widely studied theme and follows a world trend that shows its frequency. Approximately half to three quarters of adults aged between 18 and 65 years, refer having experienced headache in the last year. This is shown in studies from all continents, except Africa, where estimated prevalence in one year is lower than 22%. Migraine is reported by more than 10% of adults in this age group, also except for Africa and Western Mediterranean. Headache for more than 15 days in a month affects 1.7% to 4% of the world adult population. In many regions, data are uncertain due to the scarcity of good epidemiological studies<sup>5</sup>.

In Brazil, a pain epidemiological study developed in the city of São Paulo has shown that from 2401 participants 22% have lower limbs pain, 21% back pain and 15% headache, for which many of them do not look for medical assistance. Headache/migraine was also pointed as the second more frequent co-morbidity in chronic pain individuals (31.2%)<sup>6</sup>.

In our study, epidemiological designs have prevailed, followed by literature reviews. The analysis of studies published by Pain – IASP has shown that this type of study has remained stable for 30 years and pharmacological studies (animal behavior) had the highest growth. It is not known, however, whether the number of clinical trials is lower due to a lower number of researchers in this area or if such studies are less submitted or accepted by editorial guidelines<sup>7</sup>.

To evaluate research and researchers, the impact factor has been widely used and is a criterion to grant sponsorships to universi-

ties. It has also been used as a major indicator of the decision-making process during post-doctorate programs<sup>8</sup>.

World impact factor mean of the literature on pain is 3.11, and national mean of the 20 countries with the largest production has varied from 1.89 to 3.73. In 2006, Brazilian impact factor mean was 3.00<sup>9</sup>. Although the mean of this study has remained slightly below (2.32) available international and national means, it is worth highlighting that the studies were published by relevant journals and by a limited number of researchers, that is, production quantitatively compatible with the limited number of researchers dedicated to the theme, however with high scientific quality.

From 1995 to 2004, Brazilian neuroscientists have published in two worthy journals among the top-20, Cephalalgia and Headache<sup>10</sup>, trend which is also observed among researchers of the studied institution, with eight published articles. The analysis of 6360 articles on pain has shown a distribution of publications in 1071 journals, being Pain the journal with the highest number of publications (294), closely followed by Headache (278) and Cephalalgia (235)<sup>9</sup>.

One should also stress that the international literature has also several local journals, such as the *Revista Dor*, of the Brazilian Society for the Study of Pain (SBED), in which eight articles were published. These national journals, even if not published in English, are important for being a critical link among high level researchers and health professionals directly acting on assistance<sup>1</sup>. In this sense, the analyzed production shows a distribution of articles directed both to the international scientific community (62%) and to qualification/update of health students and professors in Brazil (38%).

Brazil has also a model created by Capes, called Qualis, which classifies scientific journals and is used for intellectual production disclosure of *strictu sensu* post-graduation programs. This system has played an induction role in the choice of where the researcher linked to the academic environment should publish, because it is the most important item in the process of programs analysis. The classification adopts seven extracts: A1, A2, B1, B2, B3, B4, B5 and C, where A1 has the highest weight (100) and C the lowest weight (zero), which ends up having a conductor role to where the researcher should publish<sup>11</sup>. What is observed is that journals with higher impact factor also correspond to those best classified by Capes.

Web of Science has been for a long time the primary tool to evaluate scientific production evolution worldwide. Based on publications referenced by it, many bibliometric indicators were developed to evaluate the production of countries, regions, universities, departments or laboratory and individual investigators. In 2004, the publishing house Elsevier B.V. has introduced Scopus in the market which, although not having the international impact of Web of Science, has been considered a good alternative. Scopus is a database with more than 33 million records extracted from more than 15 thousand journals with peer review from 4 thousand publishing houses and includes more than 1200 Open Access Journals and 500 Conference Proceedings, more than 600 Trade Publications and 200 Books Series. The difference between both databases may be

related to journal inclusion policies which are overtly different, and also to the classification of documents as articles, congress presentation summaries, etc. For citation analysis, Scopus has 20% more coverage as compared to Web of Science<sup>12</sup>.

To better evaluate local realities, some authors even recommend the evaluation of scientific disclosure in national databases such as Scielo<sup>1</sup>, among other alternative databases, taking into account the limitations of the inclusion of journals in Web of Sciences database and the criticisms from both developed and developing countries<sup>8,13</sup>. Databases, in general, have their own evaluation criteria for the indexation of journals and vary as a function of the evaluation objective and area of knowledge<sup>11</sup>.

In the literature, citation analysis has been primarily focused on the so-called classic citations, such as the Gate Theory, published by Science in 1965, with 154 citations. Other important data indicate that the total number of citations of all published studies is decreasing, however the number of articles is increasing<sup>7</sup>. It is possible to infer that the higher the number of articles, the citations of authors of studies with less scientific relevance or with lower impact tend to be lower for being diluted among other available articles. However, our study has observed a high number of citations (237 when both major databases were added), which emphasizes the reach of such publications outside the institution and their contributions not only for the important award mentioned in the introduction to this article, but also for the international scientific community.

It is worth stressing that all classification methods discussed have limitations. Multidimensional evaluations on the impact of knowledge generation are difficult and represent a challenge. Measurements of the evaluation of social implications of new knowledge also have to be developed and are a field to be explored.

The major limitation of our study is that the analysis of the publications represents a small number of researchers of a same institution, although 51% of the studies had the participation of other primarily academic institutions. The qualitative analysis of knowledge generation and of major scientific contributions of each publication should be explored in further evaluations and a national multicenter study should also be the target of investigators of the theme, maybe headed by specialized pain centers and/or in partnership with SBED.

Nevertheless, results show the importance of knowing the interest on the development of studies in this area, in different contexts, including those where other research lines prevail.

Brazil lacks data showing how pain research is being developed outside specialized centers, which also account for a significant part of assistance to painful patients who deserve a more accurate attention. This study hopes to have contributed to this.

## CONCLUSION

Although studies on pain are just a small part of total production of the analyzed institute, they show potential to grow. Predominant professional category of the intellectual authorship is made up of physicians, which indicates the need for further engagement of the multidisciplinary team in the study of pain to generate specific knowledge for each area.

Epidemiological designs have prevailed and were aimed at the study of cephalic pains. Most articles were published in international journals with impact factor and citations, indicating the high quality of the knowledge produced, which suggests that the generated knowledge has contributed to the state of the art of scientific production on pain without being limited to loco-regional issues.

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