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THE ROLE OF ONCOLOGY PHYSIOTHERAPY IN PALLIATIVE CARE IN CHILDREN WITH OSTEOSARCOMA

Ana Rúbia Teixeira Mendonça

- UNIFAE - Centro Universitário das Faculdades Associadas de Ensino - FAE
- Instituto de Ensino Superior Blauro Cardoso de Matos- FASERRA
Manaus- AM.
<http://lattes.cnpq.br/6851604570453167>

Daiane Tokuta Figueiredo

Faculdade Inspirar
São Paulo- SP

Josienne Santos da Silva

- Instituto de Ensino Superior Blauro Cardoso de Matos- FASERRA.
Manaus- AM

Wesley Carvalho Cunha Júnior

- Instituto de Ensino Superior Blauro Cardoso de Matos- FASERRA.
Manaus-Am

Gabriel Costa Tavera

- Faculdade Metropolitana de Manaus -
FAMETRO
Manaus - Am

Wenderson Pinto Neves

Faculdade Metropolitana de Manaus-
FAMETRO
Manaus- AM



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- Instituto de Ensino Superior Blauro Cardoso de Matos- FASERRA.
Manaus- AM

Magda de Andrade Santana

- Instituto de Ensino Superior Blauro Cardoso de Matos- FASERRA.
Manaus- AM

Alexandre Cesar de Almeida Cardoso Junior

- Instituto de Ensino Superior Blauro Cardoso de Matos- FASERRA.
Manaus- AM

Eduardo Alejandro Mastins Castelo

- Faculdade Metropolitana de Manaus -
FAMETRO
Manaus- AM

Rosângela Oliveira da Silva

- Faculdade metropolitana Educação
Ribeirão Preto -SP

Daniel Cavalcante de Oliveira Caldas

- Instituto de Ensino Superior Blauro Cardoso de Matos- FASERRA.
Manaus- AM

Abstract: **Introduction:** Osteosarcoma is

a primary malignant tumor of the bone, mainly affecting long bones in metaphyseal regions, and it is considered the neoplasm that most affects children in the first decade, considering that this pathology is the second cause of infant mortality in the world. **Goals:** To report the role of oncological physical therapy in palliative care of children with osteosarcoma. **Methodology:** The method used was a non-experimental qualitative literature review approach, where the databases were the websites: Scielo, Pubmed, INCA, scientific journals and books published in the years 2004 to 2020. The research was carried out in the period of May 2020 to July 2021. **Results:** When considering the articles, a table was prepared containing their analyzes in chronological order. **Discussion:** Palliative care performed by the physical therapist proved to be positive in the recovery and preservation of the integrity of cancer patients.

Conclusion: The physiotherapist's work as an integral part of a multiprofessional team needs to know the right moment to intervene, guide, and choose the best therapy for each case.

Keywords: Physiotherapy. Osteosarcoma. Palliative care. Child and Treatment.

INTRODUCTION

Cancer is the name given to a set of more than 100 diseases that have in common the disordered growth of cells, which invade tissues and organs, these cells tend to be very aggressive and uncontrollable. Different types of cancer correspond to different types of cells in the body. When they start in epithelial tissues, such as skin or mucous membranes, they are called carcinomas. If the starting point is connective tissues, such as bones, muscles or cartilage, it is called a sarcoma (INCA, 2019).

Silva et al., (2012) mentions that the bone tumors that affect the child-juvenile

population are benign and malignant, the benign tumors in turn have a slow growth to which the patient is more likely to not suffer much during the course of life. pathology and even treatment. And that the types of cancers that occur in children are different from those of adults, especially with regard to histological type, clinical and topographical behavior, pointing out approaches and needs for specific studies according to the age of occurrence. It also points out that in Brazil, neoplasms in childhood and adolescence correspond to the second cause of death.

For Odone et al., (2012) osteosarcoma is the most common malignant tumor of primary bone, representing 60% of cases, affecting more male children in the second stage of life. The incidence per year in the United States is 5.6 cases per million. In Brazil, taking the difficulties of records, it is estimated that new cases of children and adolescents up to 20 years of age are 350 per year. Its etiology is unknown in most cases, but about 3% of osteosarcomas are related to previous ionizing radiation, there is evidence of a genetic tendency involving chromosome 13, which may be associated with bilateral retinoblastoma.

The current World Health Organization classification of bone OS includes eight categories: conventional, telangiectatic, small cell, low-grade central, secondary, parosteal, periosteum, and high-grade surface (YARMISH et al., 2010).

According to Torres et al., (2015) the diagnoses start from a fracture or during preoperative or neoadjuvant chemotherapy, when the bone lesion, radiography is the exam to be performed. The first care is provided by a pediatrician or doctor who monitors the family. The radiography of these tumors analyze the lesion in a specific way, such as: location, margins, aspects, periosteal reaction, transition zone, size, etc. the age of

the individual with osteosarcoma is also an important clinical feature.

More than 80% of osteosarcoma patients treated with surgery alone ended up developing metastatic disease, says Odone et al., (2012). With the systematic application of chemotherapy, the prognosis has improved very substantially, and the current 5-year survival is 60 to 70%. The most effective chemotherapeutic agents for the treatment of osteosarcoma are very few: cisplatin, doxorubicin, ifosfamide and high-dose methotrexate. Most of these current protocols employ the combination of 3 to 4 of these agents with QT cycles before and after surgery.

Studies show that physical therapy in PC aims to improve the quality of life and social life through behaviors that functionally rehabilitate the patient, as well as helping the caregiver to deal with the rapid progression of the disease and is effective in addressing many associated symptoms. to palliative conditions, including cancer-related fatigue, pain, poor appetite, depression, dyspnea, and pulmonary hypersecretion. Children get bored easily and for the physical therapist to achieve his goals, a playful treatment is necessary. Physiotherapeutic procedures must be adapted to the age group in which the child is and mainly aim to delay the clinical evolution and prevent secondary complications (BARBOSA and IGLESIAS, 2019).

With this, the reports and case studies show that neoplasms are a serious pathology that affects a large part of the population in the world, causing many deaths. Despite few resources and knowledge to treat these patients, physical therapy shows how much it is necessary to participate in the multidisciplinary team, both for rehabilitation care and in the palliative care of these patients, for this there is a preparation of knowledge and techniques so that one can act in the area.

The objective of this article is to report how the physiotherapy professional can act in the palliative care of children with osteosarcoma, and to list works in the area in order to direct future studies.

METHODOLOGY

The methodology chosen was the bibliographic research, for Prodanov and Freitas, 2013, this is elaborated from already published material, such as: books, magazines, newspapers, newsletters, monographs, dissertations, theses, cartographic material, publications in journals and scientific articles, internet, aiming to put the researcher in direct contact with all the material already written on the research subject.

This article was prepared through a literary review, where the databases were the sites: Scientific Electronic Library Online (Scielo), Serviço de U.S. National Library of Medicine (Pubmed), Instituto Nacional do Câncer (INCA), in Portuguese and English. Scientific journals were selected: Revista Brasileira de Ortopedia, Revista da Universidade Federal de Pernambuco (UFPE), Revista do Hospital Universitário Pedro Ernesto (UERJ), Revista NovaFisio, Revista Brasileira de Cancerologia, Jornal de Pediatria vol. 80, Gaceta Mexicana de Oncología and books by Manole and Feevale, published from 2004 to 2020.

The research was carried out from May 11, 2020 to June 2021, the descriptors for the findings were: Osteosarcoma, Physiotherapy, Palliative Care, Child and Treatment. We included 16 articles and two books published according to the inclusion criteria: between 2004 and 2021, in English and Portuguese. Articles that did not present a significant result, with titles outside the proposed theme, were excluded.

The methodology, in general, is guided by two aspects, the qualitative and quantitative

methods. They are outlined in order to achieve the proposed objectives, producing results that can confirm or deny the hypotheses launched (PRAÇA, 2015).

Therefore, this qualitative, quantitative and experimental literary review chose literatures where it addresses the content in order to prepare a table of important results to show the quality of physiotherapeutic palliative care and treatments developed with the multidisciplinary team directed to patients with osteosarcoma.

RESULTS

Table below.

DISCUSSION

Nascimento (2016) reports in his research the analysis of the quality dimensions of the population-based cancer registry database, it contributes to health care planning, has the potential to strengthen the community support network, helping patients and their relatives or caregivers to go through the moment of illness. Silva, Souza and Couto (2017) emphasize that, for a better follow-up before and after the diagnosis, it is important that the patient is registered in the health system and that he participates in hospital care, as the many difficulties encountered by the patient are perceived. and for the family, both for the social aspect and the limitations that arise during this process, for which an early diagnosis is necessary so that support measures and immediate treatment can be adopted.

Considering the studies by Rech et al (2004) and Castro et al (2008), chemotherapy and the surgical process are the specific procedures for the treatment of childhood osteosarcoma, but, in order to obtain an effective result, it is necessary to follow up from the beginning in the diagnosis of the disease until the medical discharge in cases of

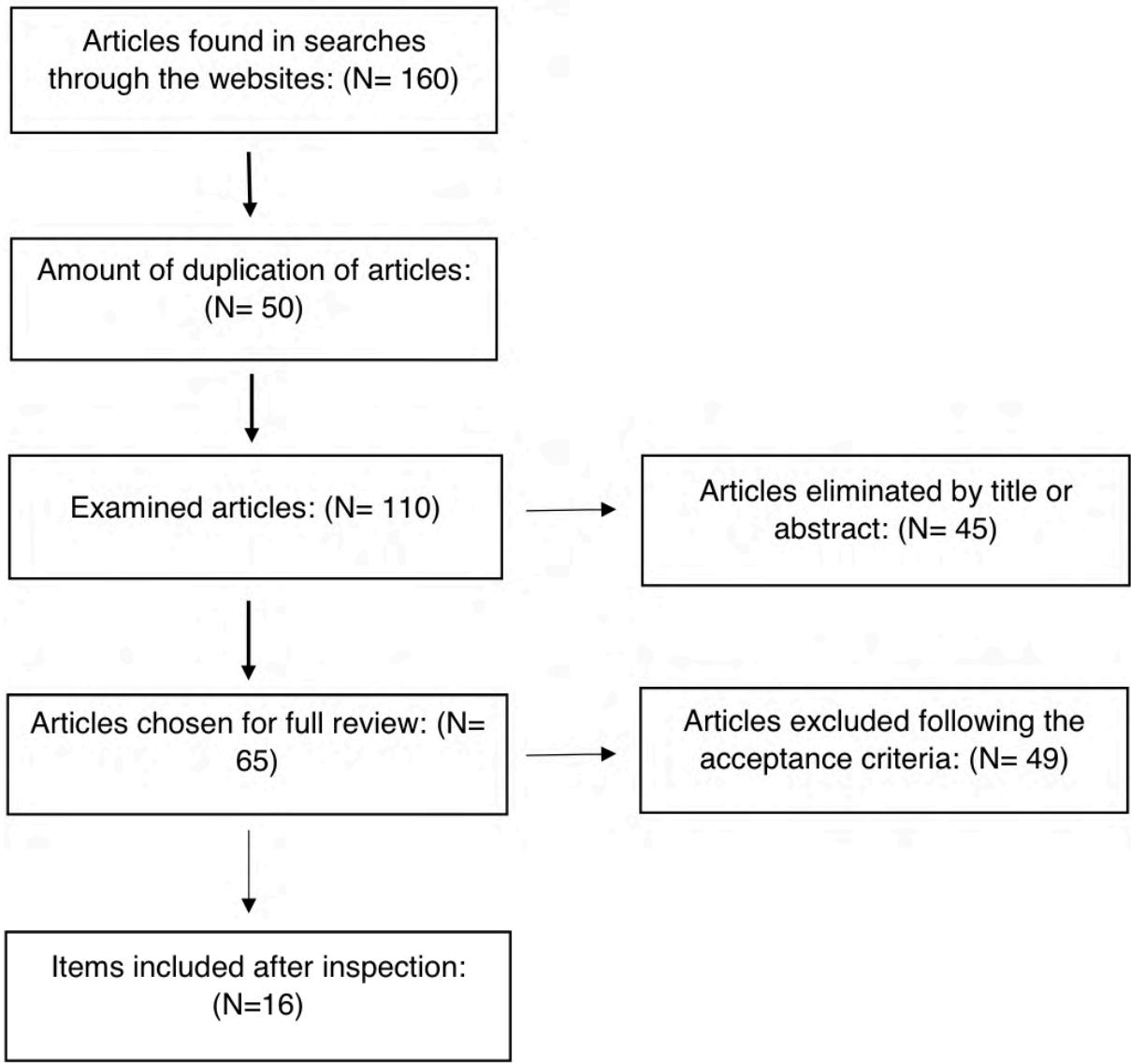


Figure 1: literature review flowchart.

Source: Ana Rúbia Mendonça, 2021

AUTHOR	YEAR	METHODOLOGY	RESULT
Rech et al	2004	Retrospective study.	All patients underwent chemotherapy. As for surgical treatment, 26 patients (52%) underwent amputation, and 17 underwent conservative surgery (34%). The excessively high percentage of patients with metastatic disease at diagnosis suggests that this is a population of patients with biologically aggressive disease or diagnosed late in our country.
Castro et al	2008	Retrospective study.	There was recurrence of the neoplasm in 60.0% of the patients; the lung was the main site of relapse (88.9%), followed by the primary site (47.2%). We observed that, with a 48-month follow-up, 25% of the patients were alive and without signs of disease, 50% died from cancer progression, 8.3% died from other causes and 16.7% did not return to the service, being considered as lost to follow-up.
Muller et al	2011	Case study	The data obtained in this research resulted in a category: the physical therapist and the terminal patient; and four subcategories: treating patients with no possibility of cure, physical therapist and patient bond, the relationship with death, physical therapy and palliative care.
Florentino et al	2012	Literary Review	Among the therapeutic modalities are kinesiotherapy, electrothermotherapy and orthotics. Such resources can be used in association, including massage, acupuncture, relaxation, distraction and breathing techniques. Manual therapy methods can be used to complement pain relief by decreasing muscle tension, improving tissue circulation and decreasing patient anxiety.
Castro et al	2014	Retrospective documentary study.	Among the 26 medical records analyzed, 05 deaths were identified by OS and/or its complications, 20 had complications without the presence of deaths and 01 with insufficient data. Among the complications mentioned in the medical records, the most frequent were: nausea, vomiting, diarrhea, fever, headache, pain, constipation, decreased appetite, tiredness and cough. Physiotherapy was indicated for these patients, but few attended. Physiotherapy had a $p = 0.5$ in the Binomial Test, that is, it was not statistically significant. However, it is an important piece of data, as it shows that health professionals must be updated on the indications and benefits of the physical therapy treatment that must have been performed in all patients in the present study.
Nascimento	2016	Descriptive cross-sectional study.	The first study sought to characterize the population-based cancer registries specialized in childhood cancer that exist in the world. And the second study analyzed the quality dimensions of the Recife RCBP database based on childhood cancer cases.
Silva et al	2017	Descriptive study, of the case report type.	The study demonstrated the long route taken by adolescents with osteosarcoma, describing their therapeutic itinerary, from the trajectory before the diagnosis of osteosarcoma and later the trajectory from the diagnosis to the beginning of the osteosarcoma treatment. This itinerary highlights the importance of early diagnosis for this disease and the difficulties encountered by adolescents.
Atty et al	2018	Descriptive study	The study described the profile of cancer patients in palliative care in home care. The information recorded was evaluated and described comparatively between the regions of the country, between the neoplasms and between the age groups.
Campos et al	2020	Case report	In view of the case report, unconventional arthroplasty and physical therapy represent a great advance in the treatment of patients diagnosed with osteosarcoma, due to the psychological aspect of limb preservation, improving quality of life and good limb function, enabling the return to activities of daily living (ADL's) and professional activities.
Lima et al	2020	Multiple case study.	Nine children participated in the study. From them, cases involving 19 family members and 30 professionals were constituted, the experiences of family members and professionals were grouped into three categories: (a) misunderstanding of the concept of palliative care; (b) communication of the news; and (c) comprehensiveness versus fragmentation of care in the context of palliative care.

patient survival, the studies show the team's commitment to this process. In this context, Castro et al (2014) reports that the presence of the physical therapist becomes necessary in these treatments, as the physical therapy method reduces the sequelae that may occur in patients in the hospital environment. However, these procedures are still scarce due to a lack of knowledge and effective drugs, and a team prepared to assist in case of unexpected occurrences.

Müller, Scortegagna and Moussalle (2011) and the author: Florentino et al, (2012) reported in their work the importance of the oncological physical therapist in palliative care, generally using physical therapy techniques with the multidisciplinary team. Campos and Campos (2020) emphasize that the combination of physiotherapeutic techniques become effective in pre- and post-operative treatment, as it leads to a decrease in edema and sequelae that can affect the patient in this condition, giving him a return to his activities. of daily life. Therefore, this professional, when apt, becomes efficient, because it is not enough just to know the techniques and theories, he needs to be psychologically prepared to care for these patients, because, in the terminal moment, they need a conservative and human look, hence the importance of professionals trained for the area.

For Atty and Tomazelli (2018) palliative care is essential for cancer patients to ensure quality of life, well-being, comfort and human dignity, but this is a reality despite taking into account the data presented by the study in which only 14% of patients received this care. In the data presented, it is necessary to implement initiatives aimed at caring for solidarity. This distribution among the Brazilian states is still incipient, despite the efforts adopted to improve this situation. The National Pain Assistance and Palliative Care

Program was instituted, through Ordinance MS/GM nº 198, aiming to contribute to the quality of life of users with cancer, through preventive actions, early detection, timely treatment and, in particular, care palliatives.

According to Lima et al., (2020) palliative care often finds barriers to be applied, this is due to the lack knowledge or even experiences, as misinformation and ignorance ends up becoming an aggravating factor for its use, because the professional is not prepared for such an attitude. In his work, the author describes that nine children participated in his study and that all were able to receive palliative care, but only five were offered it. In the others, it was not recognized during the assistance.

FINAL CONSIDERATIONS

It is noticed that the cancer that affects children, becomes rare compared to those that affect adults. That's why early diagnosis is important, and follow-up by a prepared multidisciplinary team.

Therefore, the physiotherapist's work as an integral part of a multidisciplinary team can take on ample proportions during the care of these patients, because, in addition to working to prevent complications that may arise in the physical and functional aspect, he/she acts in the part of guidelines so that they are carried out at home, guaranteeing them well-being and quality of life, especially in the terminal phase. The physical therapist needs to be prepared to work with palliative care, know the right moment to intervene, guide, choose the best therapy for each case, and know how to deal with the suffering, pain and anguish of the patient and their families, providing a humane and welcoming treatment.

During the research, many difficulties were found, due to the scarcity of works in the area, this demonstrates that it is necessary to

engage in studies on the subject. In addition to encouraging more specific disciplines in undergraduate and specialization courses for these professionals. But for this, it is necessary to encourage physical therapists

and academics to seek interest in the subject, because it is clear that their efforts are inefficient, leaving a wide margin for the demand of patients affected by the disease without this professional.

REFERENCES

- ATTY, A.T. M.; TOMAZELLI, J. G. T. **Cuidados paliativos na atenção domiciliar para pacientes oncológicos no Brasil.** DOI: 10.1590/0103-1104201811618. Vol. 42 Rio de Janeiro, 2018.
- BARBOSA, J. L. R.; IGLESIAS, S. B. de O. **O que o fisioterapeuta pode fazer pela criança em cuidados paliativos?** Residência Pediátrica, Publicação Oficial da Sociedade Brasileira de Pediatria. São Paulo; 2019.
- CAMPOS, H. J. M.; FILHO, J. H. D. C. **A ATUAÇÃO DA FISIOTERAPIA NO PÓS-OPERATÓRIO DE OSTEOSSARCOMA CENTRAL EM TIBIA PROXIMAL: Relato de caso.** Revista NovaFisio, 2020.
- CASTRO, H. C.; RIBEIRO, K. C. B.; BRUNIERA, P. **Osteossarcoma: experiência do Serviço de Oncologia Pediátrica da Santa Casa de Misericórdia de São Paulo.** Revista Brasileira de Ortopedia, São Paulo, 2008.
- CASTRO, J. R. L.; SILVA, C. M. T. R.; BARROSO, K. S. N.; LOPES, J. P. **Características clínicas e epidemiológicas do paciente adolescente portador de osteossarcoma.** Fortaleza, 2014.
- FLORENTINO, D. M.; SOUSA, F. R. A.; MAIWORN, A. I.; CARVALHO, A. C. A.; SILVA, K. M. **A Fisioterapia no alívio da dor: uma visão reabilitadora em cuidados paliativos.** Revista do Hospital Universitário Pedro Ernesto, UERJ. Ano 11, abril/junho de 2012.
- Instituto Nacional do Câncer (Brasil). O que é câncer? INCA, 2019. Disponível em: <www.inca.gov.br>; acessado: 16 de setembro de 2020>, às 13:00 horas.
- LIMA, S. F.; LAMY, Z. C.; MOTTA, V. B. R.; ROMA, T. M.; GOMES, C. M. R. P.; SOUZA, T. P. **Dinâmica da oferta de cuidados paliativos pediátricos: estudo de casos múltiplos.** Cad. Saúde Pública: 2020.
- MULLER, A. M.; SCORTEGAGNA, D.; MOUSSALLE, L. D. **Paciente Oncológico em Fase Terminal: Percepção e Abordagem do Fisioterapeuta.** Revista Brasileira de Cancerologia: 2011.
- NASCIMENTO, M. H. **CÂNCER INFANTOJUVENIL: ANÁLISE DA QUALIDADE DOS DADOS DO REGISTRO DE CÂNCER DE BASE POPULACIONAL DE UMA CAPITAL DO NORDESTE.** UNIVERSIDADE FEDERAL DE PERNAMBUCO, Recife, 2016.
- ODONE, V. F.; JUNIOR, P. T. M.; CRISTOFANI, L. M.; ALMEIDA, M. T. A.; TEIXEIRA, P. A. P. **Doenças neoplásicas da criança e do adolescente.** Barueri, SP; Manole, 2012.
- PRAÇA, F. S. G. **Metodologia da pesquisa científica: organização estrutural e os desafios para redigir o trabalho de conclusão.** Revista Eletrônica “Diálogos Acadêmicos”. Nº 1, p. 72-87, Jan-jun, 2015.
- PRODANOV, C. C.; FREITAS, E. C. **Metodologia do trabalho científico: Métodos e Técnicas da Pesquisa e do Trabalho Acadêmico.** 2. ed. Rio Grande do Sul: Feevale, 2013.
- RECH, A.; JUNIOR, C. G. C.; MATTEI, J.; GREGIANIN L.; LEONE, L. D.; DAVID, A.; RIVERO, L. F.; TARRAGO, R.; ABREU, A.; BRUNETTO, A. L. **Características clínicas do osteossarcoma na infância e sua influência no prognóstico.** Jornal de Pediatria- vol.80, Rio de Janeiro, 2004.
- SILVA, J. K. O.; MOREIRA, D. C.; MAHAYRI, N.; FERRAZ, R. O.; FRIESTINO, F. S. **Câncer Infantil: Monitoramento da Informação através dos Registros de Câncer de Base Populacional.** Revista Brasileira de Cancerologia. Campinas (SP): 2012.

SILVA, T. M. R.; SOUZA, S. R.; COUTO, L. L. **ITINERÁRIO TERAPÊUTICO DE ADOLESCENTES COM OSTEOSARCOMA: IMPLICAÇÕES PARA O DIAGNÓSTICO PRECOCE**. Rio de Janeiro, 2017.

TORRES, L. J. S.; ALVAREZ, O. R.; TENORIO, A. R.; DOMINGUEZ, E. A. R.; HERNANDEZ, M. S. **Caracterização epidemiológica e radiológica do osteossarcoma**. Gaceta Mexicana de Oncologia. Novembro de 2015.

YARMISH, G.; KLEIN, M. J.; LANDA, J.; LEFKOWITZ, R. A.; HWANG, S. **Imaging characteristics of primary osteosarcoma: nonconventional subtypes**. Outubro, 2010. Home>RadioGraphics> vol. 30, nº 6 Disponível em: <https://doi.org/10.1148/rg.306105524>.