

**ANALYSIS OF THE  
PHYSIOTHERAPEUTIC  
INTERVENTIONS  
PERFORMED ON  
PATIENTS IN THE  
CHILDREN'S ONCOLOGY  
SECTOR OF SÃO  
VICENTE DE PAULO  
DE PASSO FUNDO  
HOSPITAL, RIO GRANDE  
DO SUL, DURING  
THE INTERNATIONAL  
PERIOD**

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**Abstract:** The child and adolescent cancer corresponds to a group of diseases that proliferate abnormal cells uncontrollably, and that can occur in any place in the body. What differs from cancer in adults, is that childhood and adolescent cancer affects cells of the blood system and supporting tissues. This is an objective study to analyze the physiotherapeutic interventions carried out in oncological patients in the infant-juvenile sector of São Vicente de Paulo Hospital in Passo Fundo, Rio Grande do Sul, during the hospitalization period. The sample was composed by 52 patients, who performed or were performing non-HSVP cancer treatment with age under 19 years of age. The data used in this research were collected from the medical records of two participants, using a file, where they found information on age, sex, type of cancer, responsibility for the city of residence, year diagnosed with cancer, time of hospitalization, type and time of treatment, health plan, number of physiotherapy sessions performed during the hospitalization and which interventions were performed by the physiotherapist in this period. For treatment of two data, simple descriptive analysis was performed for average and standard deviation. Results: there was a predominance of the male sex, with a three-year-old average, where the majority was under the responsibility of the mother. The highest percentage of diagnoses was in the year 2020, where the most prevalent cancers were leukemia, various neoplasms and lymphoma. Most of the two participants came from other cities, and chemotherapy was the main treatment. Still, at the average of physiotherapy sessions was 48, where he remained hospitalized for about two months. Large percentage of two patients performed motor and respiratory physiotherapy.

**Keywords:** Oncology. Oncopediatrics. Childhood-juvenile cancer. Oncology physiotherapy.

## INTRODUCTION

The cancer in Brazil, is considered a problem of public health, constituting the second cause of death for a disease in the country. The registry of cancer has increased in recent decades, highlighting as well the importance of teaching and its economic and social impact. (BITTENCOURT et al., 2004). According to Marchi (2013), childhood-juvenile cancer corresponds to a group of diseases that proliferate abnormal cells uncontrollably, and that can occur anywhere in the body. The main types of neoplasms in this population are tumors of the central nervous system, lymphomas and leukemias.

Tumors of the central nervous system form a group of diseases that are grouped together rather than in a common critical location, leading to similar behaviors. These tumors infiltrate or compress the same organs, hindering the chemotherapeutic approach due to the blood-brain barrier. (STILLER and NECTOUX, 1994).

According to INCA (2019), leukemia occurs due to a genetic mutation of a blood cell that still does not reach maturity, transforming it into a cancer cell. This abnormal cell multiplies rapidly and dies less than normal cells, not functioning properly. It occurs in the bone marrow, replacing healthy blood cells with cancer cells.

Lymphomas represent the third type of cancer that is most frequently diagnosed in children and adolescents aged 0 to 15 years, with 60% being classified as non-Hodgkin's lymphomas in two cases and 40% as Hodgkin's lymphomas. (PEDROSA, 2007).

Oncological patients, treatment, may present complications, among them we can observe kinetic-functional alterations, such as ambulation deficit, difficulty in ADLs due to prolonged inactivity, consequently, reduction in the functional capacity of organs and systems, as well as a reduction in

of the degree of muscle strength. (DAROLT et al., 2011).

In this context, oncological physiotherapy emerges as a fundamental treatment, being that it is a professional physiotherapist and essential in a multidisciplinary team. These forms the techniques proposed in rehabilitation with the objective of restoring muscular strength, stability and physical capacity of individuals, in addition to guiding care and possible complications related to treatment, which can generate a decline in independence during activities of daily living. (RODRIGUES, 2016).

The physiotherapeutic treatment must be started after the diagnosis of cancer, reducing sequelae and preventing physical problems, avoiding new complications that patients may present during all treatment, including after treatment. (DAROLT et al., 2011).

The present study aims to analyze the physiotherapeutic interventions that are performed on patients in the child and adolescent oncology sector, at São Vicente de Paulo Hospital, during the hospitalization period, as well as to discover the epidemiological profile of these patients.

## **METHODOLOGY**

It is a cross-sectional, exploratory, descriptive study with a quantitative approach.

The population of this study was made up of all the patients who received treatment at the child and adolescent cancer center in the period from January 2017 to August 2020, at the São Vicente de Paulo Hospital, in Passo Fundo/RS and was shown to be made up of 52 patients. Were included did not study children and young people with cancer, who were less cancer de Paulo treatment at the São Vicente Hospital in Passo Fundo 2017 to 2020 than 19 years of age. Were excluded from the study of young people with cancer who were 20 and other oncological treatment, rather than age

over 19 years and who were diagnosed with cancer in September 20.

Initially, I was located at the Directorate of the Children's and Youth Oncology Center of Hospital São Vicente de Paulo (HSVP), at Rua Teixeira Soares, number 808 in RS, where the research was applied, requesting authorization to carry out the same. The project was analyzed by the Hospital Research Ethics Committee, for appreciation and approval.

Subsequently, the project was analyzed by the Physiotherapy Course Commission, but was also forwarded to the Research Ethics Committee of the Universidade Regional Integrada do Alto Uruguai e das Missões (URI), Erechim Campus, for appreciation and approval.

Then, the data in this research were collected from the medical records of two participants using a file (APPENDIX A), where they will verify information such as age, sex, type of cancer, responsibility for the patient, year that was diagnosed with cancer, time hospitalization, type of hospitalization, and number of physiotherapy sessions performed during hospitalization and physiotherapeutic interventions performed by physiotherapists during the hospitalization treatment period. A term of commitment to use data (TCDU) was also signed for greater reliability during the collection of information (ANNEX A).

Starting from two collated index, it was carried out to characterize two participants. At the end of the queue, the data was analyzed and the teacher held accountable for five years and subsequently disposed of in an ecological way.

## **RESULTS AND DISCUSSION**

As we can see (Table 1), the cancer patients in the infant and adolescent sector of Hospital São Vicente de Paulo, 32% are female and 68% are male. In this context, some studies present us with similar data.

Nascimento (2020) observed in 20 records of children/adolescents treated at an oncology unit in Acre, where it showed that (60%) two patients were male, as well as another study by Hintz (2018), in a reference hospital from Porto Alegre conducted an analysis of 296 medical records, showing that (53.3%) were male. In the same way, Figueiredo et. to the. (2015), presented in their research the prevalence of male sex with (56.2%). However, according to Hadas (2014), in a study conducted with 424 patients treated at the Hospital de Clínicas da UFPR, it can be verified that 49.9% were male and 50.2% were female. Given these, which is in agreement with this research, except Hadas.

According to our study, the average age of two cancer patients was 8 years old, and the age with more occurrences was 3 years old. For the female sex, the minimum age was 11 months old and the maximum was 17 years old, while the average age was 6 years old. Similar data occurs for the male sex, where the maximum age of two cancer patients is 17 years old and the minimum is 5 months old, while the average age is 9 years old. ) cites that the average age of two pediatric oncologic patients was 6.15 years old, with the highest prevalence being between 1 and 3 years old (45%). In the same way, Diniz et. al (2015) found in his study that most children were between 1 and 4 years old (32.5%). Furthermore, in another study by Hadas (2014), 7% were children under 1 year old, 42% were between 1 and 4 years old, 32% were between 5 and 9 years old, and 18% were children between 10 and 14 years old. Still, Mutti et. to the. (2018) traced in their study, that the highest incidence of cancer was in children at 5 years of age, with a predominance of malignancies, and the average age of treatment initiation was between 8 and 11 years of age.

Based on this information, most of the two studies trace the prevalence of male sex or that it is similar to the present research. In relation to age range, it is possible to observe differences with the most studies, since the minimum age found was 5 months and maximum 17 years. In other words, the appearance of cancer can occur in any age group and with various risk factors. However, there are not enough data that demonstrate a higher prevalence of childhood and adolescent cancer in male sex, however, it is known that there are various risk factors for the development of cancer in any age group (INCA, 2019).

Second or Oncoguide Institute (2020) or lifestyle, such as the use of tobacco and alcohol, sedentary lifestyle, excess weight, unhealthy diets can influence the development of cancer. Environmental factors, such as exposure to radiation or smoking, can increase the chances of developing some type of childhood cancer, so more studies are needed to prove these associations.

In addition, or childhood cancer can be related to hereditary or acquired genetic mutations. Therefore, these alterations can be inherited from two parents or acquired at the beginning of life or before birth (Instituto oncogua, 2020). Aor Ministry of Health (2017), reports that children with malformations and/or clinical syndromes may have a greater predisposition for the development of childhood and adolescent cancer, such as the occurrence of leukemia in children with Down syndrome, tumors of the central nervous system and sarcomas in individuals with neurofibromatosis, among others.

|                    | Female | Male | General |
|--------------------|--------|------|---------|
| Half               | 6      | 9    | 8       |
| Median             | 5      | 10   | 6       |
| Minimum            | 0.9    | 0.4  | 0.4     |
| Maximum            | 17     | 17   | 17      |
| Fashion            | 2      | 3    | 3       |
| Standard deviation | 4.9    | 5.8  | 5.6     |

Table 1: Descriptive statistics of the two oncological patients in the infant-juvenile sector of Hospital São Vicente de Paulo.

Source: the author

The data referring to the year of diagnosis can be observed in Table 2, where we can observe that 3.8% of two patients were diagnosed in the year of 2017, and 42.4% between the years of 2018 and 2019, the greater majority being diagnosed in 2020 (53.8%). Hintz (2018), evaluated 296 patient records from a reference hospital in Porto Alegre and shown in his study that (45.8%) were diagnosed in 2016, 39.4% in 2015 and 14.7% by June 2017.

Viana (2018) collected two data from medical records from 2008 to 2015, where (2.73%) were identified in the first year of investigation, (27.27%) in 2009, (11.36%) in 2010, (4.09%) in 2011, (16.82%) in 2012, (8.64%) in 2013, (16.82%) in 2014 and (12.27%) in 2015.

It is possible to note similarity in the results found not that they say I respect years. What differs is that it does not present a study, most of the two patients were not diagnosed in the year that the research occurred in the research of these authors, the majority was in another year. Still, a good percentage was in treatment, since they did not present a study, all the participants were still doing active work, consequently, they still carried out some type of treatment.

|      | Frequency | %    |
|------|-----------|------|
| 2017 | 2         | 3.8  |
| 2018 | 7         | 13.6 |
| 2019 | 15        | 28.8 |
| 2020 | 28        | 53.8 |

Table 2: Descriptive statistics referring to the year of diagnosis of cancer in two oncological patients of the infant and adolescent sector of the São Vicente de Paulo Hospital.

Source: The Author.

In relation to the types of cancer diagnosed in the population of the study (Table 3), we observed that the great majority had Leukemia (45%), followed by Neoplasia (29%) and Lymphoma (8%), these same types of cancer affected with greater incidence in men and women. The type of Cancer Leukemia affects 59% of female patients and 41% of two male patients, since Neoplasia, it affects more men (32%), only 24% of women. Neoplasms represent 29% of two cancer patients, of these, only 7% (1 case) are benign. The main neoplasms found in this population can be observed in Table 4.

According to other studies, the main types of cancer found are leukemias, lymphomas, retinoblastomas and tumors of the central nervous system. These data are similar to those found at São Vicente de Paulo Hospital, where leukemia occupied the first position, and lymphoma had a lower percentage than those found in other investigations. (HADAS, 2014; HINTZ, 2018; MUTTI et. al., 2018).

Braga et. to the. (2002), says that the most frequent neoplasms in adults are difficult to occur in children. There is a difference in relation to its location, histological type and clinical behavior. Furthermore, observed that there is a higher frequency of cancers in individuals under 15 years of age, such as leukemias, lymphomas, tumors of the central nervous system and sympathetic system, Wilms tumor, retinoblastomas, bone tumors

and rhabdomyosarcomas. It is also known that infant-juvenile tumors have shorter latency periods, grow rapidly, are aggressive and invasive, and therefore respond better to chemotherapy treatment.

Most of the two studies that fail about childhood cancer show that Leukemia population appears with a fairly high percentage in the, because we don't know the reason for its prevalence. This type of cancer affects most children, but also young people, adults and the elderly can be diagnosed with leukemia. This way, it is important that the population is alert to the signs/symptoms of childhood cancer, being diagnosed early and starting or better treatment, reducing the number of from this disease (INCA, 2018).

|                                       | Female | Male | General% |
|---------------------------------------|--------|------|----------|
| Leukemia                              | 10     | 14   | 4.5      |
| Neoplasm                              | 4      | 11   | 29       |
| Lymphoma                              | 1      | 3    | 8        |
| Ostossarcoma                          | 1      | -    | 2        |
| hemangioma                            | 1      | -    | 2        |
| Carcinoma                             | -      | 1    | 2        |
| Lymphoproliferative<br>doença de pele | -      | 1    | 2        |
| Craniopharyngioma                     | -      | 1    | 2        |
| Synovial Sarcoma                      | -      | 1    | 2        |
| Rhabdomyosarcoma                      | -      | 1    | 2        |
| Glioma                                | -      | 1    | 2        |
| Encephalon                            | -      | 1    | 2        |
| Total                                 | 17     | 35   | 100      |

Table 3: Types of cancer in two oncological patients in the infant and adolescent sector of Hospital São Vicente de Paulo.

Source: the author.

Table 5 shows the average number of Time of the 1st hospitalization and of physiotherapy sessions carried out during all the hospitalizations, we can observe that the average of the sessions of the female sex

(53) and male (46) (table 5) are similar to the general average, the patients had an average of 48 physiotherapy sessions. It can also be perceived that, at the average time of the 1st hospitalization, it is 2 months.

In relation to the number of physiotherapy carried out by this population, the data are scarce, on the sessions related or study by Mutti and collaborators (2018), traces an average to this parameter, where 106 patients needed hospitalization, obtaining a quantity of hospitalization 1007 hospitalization in 7 years. The number of hospitalizations varied from 1 to 28 days. Hintz (2018) still traces no study, that there were 483 hospitalizations in the year of 2015, 534 in 2016 and 32 in 2017, totaling 1339 hospitalizations.

Hospital admissions secondary to neoplasms have increased in recent years (SANTOS et al., 2015). Other hospitalizations will be due to surgical interventions that have the objective of tumor resection, or cancer patients may present aggravations in their state of health, due to their own treatment, resulting in a higher frequency of hospitalizations and being directly linked to the time of hospital stay, because the hospitalization time of two patients may vary according to the same table, depending on the existence of comorbidities, disease, metastases, tumor staging and incidence of various complications. Manafu et. to the. (2015), Saragiotto (2013) affirms that a long stay in the hospital, more than expected or early discharge, results from administrative errors and significant inefficiency of the care offered, many times being able to generate an increase in hospital costs. However, it is known that the vast majority of hospitalizations are essential to perform two necessary treatments.

|  | Female | Male | General |
|--|--------|------|---------|
| Physiotherapy sessions                   | 53     | 46   | 48      |
| Time in the 1st hospitalization (months) | 1.9    | 2.2  | 2.1     |

Table 4: Mean number of time of 1st hospitalization and physical therapy sessions performed during all hospitalizations of two oncology patients at Hospital São Vicente de Paulo.

Source: The author.

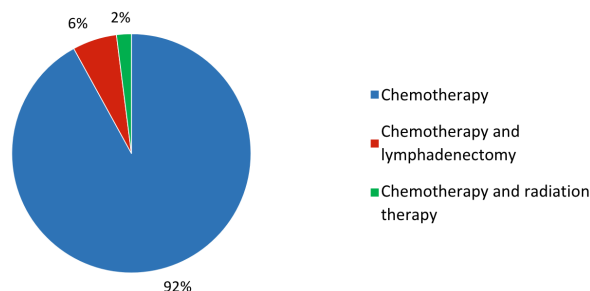
In graph 1, we can observe that in 92% two patients with two approved medical records will undergo chemotherapy treatment, and 6% will undergo chemotherapy and lymphadenectomy and 2% will undergo chemotherapy and radiotherapy. In relation to the type of treatment chosen, the study carried out by de Mutti et. al (218), 45% of two patients submitted to chemotherapy and only 38 chemotherapy surgery and 38% of those undergoing chemotherapy and 38% of other interventions, such as, for example, radiotherapy, transplantation, radiopoietic stem cell therapy plus surgery.

Nascimento (2020) that most children and adolescents. to the. (2015) who identified the type of treatment most received by patients in pediatric oncology was chemotherapy (67.8%).

Viana et. to the. (218) observed that the children/adolescents who participated in their 40 study71 as chemotherapy all (52.63%) the main surgery (54%), radiotherapy who participated in the main surgery. These therapies are also used together, being that these (23.64%) were subjected to chemotherapy sessions plus surgery, (23.18%) only chemotherapy and (21.36%) chemotherapy associated with radiotherapy.

Given these that corroborate this research. It is known that the choice of oncopediatric treatment depends on some factors such as

type of cancer, stage of care, general health condition of the patient, where the tumor is located and how it affects the functions of the organism. Still, I am determined to take two medications, cycles and schedules. (ONCOGUIDE, 2018).



Graph 1: Type of treatment for two oncological patients at Hospital São Vicente de Paulo.

Source: The author

In relation to physiotherapy treatment (table 5), it is reported that, for the most part, (77%) performed motor and respiratory physiotherapy, another study also showed that 48% of two patients had prescriptions for both motor and respiratory physiotherapy. (HINTZ, 2018).

Rios (2014) in his study, clarifies that physiotherapists must carry out a judicious assessment identifying the main limitations, alterations and difficulties of each patient, plan or care and guide patients and their families. The chronological and cognitive information, the degree of motor and functional autonomy, the degree of the children and the resources and materials that will be necessary to carry out the activities must be taken into consideration. (TEN, 2011). The evaluation must embrace the motor, sensory, behavioral and cognitive aspects. On this basis, a physiotherapeutic intervention program must be elaborated observing the needs of each child/adolescent, together with the country. (FUJISAWA AND MANZINI, 2006).

Magno et. to the. (2012), show in their work, that according to the progress of

childhood cancer, individuals will present physical alterations that are manifested through pain, anorexia, nausea, vomiting, fatigue and dyspnea causing loss of muscle mass, generating generalized frailty. Still, we may have decreased passive and active range of motion, and delays in gross motor development. As a consequence, a greater inactivity of the children can be observed, or that ends up tracing prejudices for the respiratory system such as alterations in pulmonary ventilation, presenting diminution and fatigue of two respiratory muscles. (EFFGEN, 2005).

The main objective, not physiotherapeutic treatment, in oncological patients, is to preserve life, alleviating symptoms, as well as providing greater functional independence, stimulating the resumption of activities of daily living (PESSINI, 2003; MARCUCCI, 2005; MARIM, 2009). In addition, physiotherapeutic intervention must be carried out at the same time in cases where there is no possibility of cure, acting in these cases with palliative care, relieving pain and promoting a better quality of life. (SECOND KISNER AND COLBY, 2005).

Pain appears as one of the main complaints of two oncological patients, in different phases of care, therefore, it deserves special attention, where analgesic resources appear as a great ally not physiotherapy treatment in oncology. Patients presenting with cancer usually experience more than one type of pain. These symptoms may be intermittent, constant, acute or chronic, and may be related to care or treatment. Some factors may contribute to the perception and intensity of pain, such as depression, anxiety, and cognition. (SAMPAIO et al. 2005).

Darolt et. to the. (2011), says that sleep is a sensory and emotional experience that is associated with brain damage. Pain in patients with cancer is secondary to the evolution of

the pathology, to the procedures to obtain the cure and to the psychoaffective aspects, because it is linked to a debilitating and progressive disease. In relation to duration, it is classified as acute or chronic. Also, this author cites that mood disturbance, especially anxiety, is directly related to acute pain.

|   | Female | Male | General% |
|---|--------|------|----------|
| Motor and respiratory physiotherapy                         | 15     | 25   | 77       |
| Motor and respiratory physiotherapy and metabolic exercises | 2      | 8    | 19       |
| Motor physiotherapy   | -      | 1    | 2        |
| I didn't do   | -      | 1    | 2        |

Table 5: Physiotherapy intervention of two oncological patients of Hospital São Vicente de Paulo.

Source: the author.

## CONCLUSION

Based on the results obtained, the prevalence of the male sex was observed, with a variety of ities found, with the greatest occurrence in children with 3 years of age.

Regarding the year of cancer diagnosis, the highest percentage was in the year 2020, this year, the research was carried out. Two patients were not studied, most of whom had leukemia, followed by neoplasms and lymphomas. Of these, chemotherapy was the most prevalent treatment, with 92% of two cases.

In relation to physical therapy, the general average of the number of sessions was 48, where 77% performed both motor and respiratory physical therapy. The average hospital stay was two months.

It is concluded that, despite the fact that no relationship was observed between



the physiotherapeutic treatment and the reduction in hospitalization time, it is known to be important that the professional physiotherapist did not accompany these patients, both during and after the treatment, promoting It improved two symptoms, functional independence and consequently providing a better quality of life. Furthermore, it is highlighted the need for an interdisciplinary team to accompany these individuals, providing them with various forms of treatment so that they can successfully achieve all the objectives related to the same.

## REFERENCES

BITTENCOURT, R.; SCALETZKY, A.; BOEHL, J. A. R. Perfil epidemiológico do câncer na rede pública em Porto Alegre-RS. **Revista brasileira cancerologia**, v. 50, n. 2, p. 95-101, 2004.

MARCHI, J. A. et al. Câncer infanto juvenil: perfil de óbitos. **Revista da Rede de Enfermagem do Nordeste**, v. 14, n. 5, 2013.

STILLER, C. A.; NECTOUX, J. International Incidence of Childhood Brain and Spinal Tumours. **International Journal of Epidemiology**, v. 23, n. 3, p. 458-464, 1994.

**Instituto Nacional do Câncer**. Disponível em: <<https://www.inca.gov.br/>>. Acesso em: 01 Maio. 2019.

PEDROSA, M. F. et. al. Linfoma não-Hodgkin na infância: características clínico-epidemiológicas e avaliação de sobrevida em um único centro no Nordeste do Brasil. **Jornal de Pediatria**. v: 83, n. 6, 2007.

DAROLT, J. et. al. Diagnóstico cinesiológico-funcional de pacientes oncológicos internados no Hospital São José de Criciúma/SC. **Arquivos Catarinenses de medicina**. v. 40, n. 2, 2011.

RODRIGUES, N. R. S.; **Avaliação das atividades de vida diária em pacientes com câncer de mama submetidas a tratamento cirúrgico**. 2016. Tese (doutorado em ginecologia, obstetrícia e mastologia). Universidade Estadual Paulista, 2016.

NASCIMENTO, A. S. M. Câncer infantojuvenil: perfil dos pacientes oncológicos atendidos na unidade de alta complexidade em oncologia (UNACON) em Rio Branco- Acre, Brasil, no ano de 2017. **Arquivos de ciências da saúde**. v. 24, n. 1, p. 35-39, 2020.

HINTZ, L. G.; CASTRO JUNIOR, C. G.; LUKRAFKA, J. L. Perfil clínico-epidemiológico de crianças e adolescentes em tratamento oncológico. **Revista Ciência & Saúde**. v. 12, n. 1, p. e3142, 2018.

FIGUEIREDO, G. P. Z. et al. Perfil epidemiológico dos casos novos de câncer infanto-juvenil em hospital de referência no Espírito Santo, Brasil, de 1986 a 2010. **Revista Brasileira de pesquisa**. v. 15, n. 4, p. 109-120, 2015.

HADAS, T. C. et al. Câncer pediátrico: perfil epidemiológico dos pacientes atendidos no serviço de oncologia pediátrica do hospital de clínicas da UFPR. **Revista de medicina**. v. 1, n. 4, p. 141-149, 2014.

MUTTI, C. F. et al. Perfil clínico-epidemiológico de crianças e adolescentes com câncer em um serviço de oncologia. **Revista Brasileira de cancerologia**. v. 64, n. 3, p. 293-300, 2018.

**Ministério da saúde**. Disponível em: <[www.editora.saude.gov.br](http://www.editora.saude.gov.br)>. Acesso em: 17 de nov. 2020.

VIANA, W.S. et. al. Perfil clinicoepidemiológico de crianças e adolescentes com câncer entre 2008 e 2015 em um hospital filantrópico de Salvador-BA. **Revista Brasileira de Saúde Funcional**. v. 6, n. 1, 2018.

BRAGA, P. E. et al. Câncer na infância: análise comparativa da incidência, mortalidade e sobrevida em Goiânia (GO) e outros países. **Caderno de saúde pública**. v. 18, n. 1, 2002.

SANTOS, M. A. S. et al. Tendências de morbidade hospitalar por doenças crônicas não transmissíveis no Brasil. **Epidemiologia e serviços de saúde**. v. 24, n. 3, p. 389-298, 2015.

SARAGIOTTO, L. et. al. Neoplasia digestiva, baixo índice de massa corporal e perda de peso como indicadores do tempo de internação em pacientes portadores de neoplasias. **Arquivos brasileiros de cirurgia digestiva**. v. 26, n. 2, p. 96-100, 2013.

MANAFU, E. et. al. Retrospective Epidemiologic Research on prevalence of infections in surgically treated oncologic patients. **Revista medico-chirurgicala a Societati de Medici si Naturalist**. v. 119, n. 2, p. 522-528, 2015.

RIOS, L. C. **Atuação da fisioterapia no câncer infantojuvenil**. 2014. Tese (mestrado em fisioterapia pediátrica e neonatal). Salvador-BA. 2014.

DIEZ, A. M. El posicionamiento del fisioterapeuta pediátrico ante las dificultades que presentan algunas familias. **Sociedad Española de fisioterapia em pediatria**. 2011.

EFFGEN, S. K. **Fisioterapia pediátrica: atendendo as necessidades das crianças**. Rio de Janeiro: Guanabara, 2005.

PESSINI, L. A fisiologia dos cuidados paliativos: uma resposta diante da obstinação terapêutica. **Revista Mundo saúde**. v. 27, n. 1, p. 15-34, 2003.

KISNER, C.; COLBY, L. A. **Exercícios terapêuticos: fundamentos e técnicas**. São Paulo: Manole, 2005.

SAMPAIO, L. R. et. al. Recursos fisioterapêuticos no controle da dor oncológica: revisão de literatura. **Revista Brasileira de Cancerologia**. v. 51, n. 4, p. 339-346, 2005.

DAROLT, J. et. al. Diagnóstico cinesiológico-funcional de pacientes oncológicos internados no Hospital São José de Criciúma/SC. **Arquivos Catarinenses de medicina**. v. 40, n. 2, 2011.