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| ORIGINAL

Oral health: knowledge of those responsible for hospitalized children with cancer

Saúde bucal: conhecimento dos responsáveis por crianças hospitalizadas com câncer

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ABSTRACT

Cancer is a disease that has disordered cell growth with the formation of tumors. The most common types of childhood and adolescent childhood cancer are leukemias, tumors of the central nervous system, and lymphomas. **Objective**: To evaluate the knowledge of those responsible for oral health practices and care of children assisted in the Polyclinic of Natal, who underwent antineoplastic treatment. In addition to knowing the main oral health practices performed by those responsible. **Methods**: A quantitative and descriptive cross-sectional study, carried out in the Natal Polyclinic Unit (Liga Norte Riograndense Contra o Câncer), located in Rio Grande do Norte. The sample consisted of 41 questionnaires applied individually to those responsible for the children aged 0 to 12 years who underwent cancer treatment, during March and April 2018. **Results**: It was found that 51% of the responsible identified some oral health problem in their children, and 43.9% of the children had already been affected by mucositis. Of the 41 hospitalized patients, 90.2% were accompanied by a dental surgeon during the antineoplastic treatment. **Conclusion**: The responsible ones had a great perception of the children's oral health problems and knew the importance of the participation of the dentist during the are treatment. There is a need for more research on the subject, to establish a care protocol with oral hygiene of children hospitalized with cancer.

Indexing terms: Antineoplastic. Cancer. Child. Oral health.

RESUMO

O câncer é uma doença que tem o crescimento desordenado de células com a formação de tumores. Os tipos de câncer infantojuvenil mais frequentes na infância e na adolescência são as leucemias, os tumores do sistema nervoso central e os linfomas. ***Objetivo****: Avaliar o conhecimento dos responsáveis acerca das práticas e cuidado com a saúde bucal de crianças assistidas na Unidade da Policlínica de Natal, submetidas a tratamento antineoplásico. Além de conhecer as principais práticas de saúde bucal realizadas pelos*

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responsáveis. ***Métodos****: Estudo transversal quantitativo e de base descritiva, realizado na Unidade da Policlínica de Natal (Liga Norte Riograndense Contra o Câncer), localizada no Rio Grande do Norte. A amostra foi composta por 41 questionários aplicados de forma individual aos responsáveis pelas crianças de 0 a 12 anos submetidas ao tratamento de câncer, durante os meses de março e abril de 2018.* ***Resultados****: Foi constatado que 51% dos responsáveis identificaram algum problema de saúde bucal em suas crianças, sendo que 43,9% das crianças já tinham sido acometidas por mucosite. Dos 41 pacientes hospitalizados, 90,2% eram acompanhados por um cirurgião-dentista durante o tratamento antineoplásico.* ***Conclusão****: Os responsáveis possuíam grande percepção acerca dos problemas de saúde bucal das crianças e sabiam da importância da participação do cirurgião dentista durante o tratamento. Existe a necessidade de mais pesquisas sobre o tema, para o estabelecimento de um protocolo de cuidados com a higiene oral de crianças hospitalizadas com câncer.*

Termos de indexação: *Antineoplásicos. Câncer. Criança. Saúde bucal.*

INTRODUCTION

According to the National Cancer Institute (INCA), cancer is a growth disorder of cells that can invade adjacent tissues or organs at a distance. These cells tend to be very aggressive and uncontrollable, leading to the formation of tumors and may spread to other regions of the body [1].

Cancer is the second leading cause of death in the world, being responsible for 9.6 million deaths in 2018. According to obtained data, one in six deaths are related to the disease, with 70% of cancer deaths occurring in low and middle-income countries [2].

In cases of childhood cancer, cancer cells usually affect the blood system and supporting tissues. The most frequent tumors in childhood and adolescence are leukemias, tumors of the central nervous system, and lymphomas. In Brazil, cancer is already the leading cause of death, 8% of the total, due to illness among children and adolescents from 1 to 19 years old [3].

From diagnosis to cancer treatment, children go through several hospitalizations and end up suffering from the pains resulting from childhood cancer which are multifactorial and difficult to handle, with underlying diseases as the causes, diagnostic procedures, or treatments [4].

The child's hospitalization experience can become stressful and frightening, both for the child and for her family [5]. Health professionals, therefore, should offer care focused on the needs of the child and the family, and in this way help to alleviate all the changes that the disease and the hospitalization may represent [5,6].

Child hospitalization cases in Brazil are close to 35.5 million cases, which further reinforces the importance of the hospital scenario on children's life experiences since hospitalization alters abruptly your routine [7,8].

Deficiency in oral hygiene has been associated with changes in the response immune system of the individual, predisposing to the development of gingivitis, periodontitis, and the worsening of systemic diseases. These data show the importance of a multidisciplinary team in the hospital environment [9].

Antineoplastic treatment leads to several changes in the oral cavity such as dental and/or opportunistic infections, difficulty in swallowing, dry mout temporarily, immunosuppression, caries, and mucositis, the most frequent oral manifestation due to antineoplastic therapy. Deficiency in oral hygiene can favor the appearance of opportunistic infections, such as, for example, the herpes virus (HSV), Candida Albicans, and Gram-negative anaerobic bacteria, being administered of local or systemic measurement is necessary [10].

The basis for the treatment of these oral complications is palliative care, but maintaining good oral hygiene is important to prevent and reduce severity [11]. The hospitalized individuals do not have autonomy over their hygiene because they are often debilitated due to their clinical condition [12].

Hospitalized children tend to have even greater limitations in their clinical condition because, in addition to the need for professional care, they depend on their adult responsible for support in daily activities [13].

Thus, the presence of the dentist in a hospital environment is extremely important during the integral and humanized treatment of these patients, once that hospital dentistry comprises preventive, diagnostic, and treatments of oral manifestations of systemic origin or sequelae of treatments [14].

The objective of this study was to evaluate the knowledge of those responsible about the oral health care and practices of children assisted at the Unit of the Natal Polyclinic (Liga Norte Riograndense Against Cancer), submitted to antineoplastic treatment. In addition to knowing the main oral health practices performed by those responsible for oncology infant patients and to identify the participation and actions developed by the dentist during treatment with antineoplastic agents in these patients.

METHODS

A cross-sectional quantitative and descriptive study carried out at the Natal Polyclinic (Liga Norte Riograndense Against Cancer), located in Rio Grande do Norte. The Polyclinic is a general hospital consisting of several specialties. It is a unit that houses pediatrics and the intensive care unit of the Northern League Riograndense Against Cancer, is characterized by the quality and security of the services offered.

The oncology sector was established by Casa Durval Paiva de Apoio à Criança with Cancer (CACC), to offer antineoplastic treatment for children and adolescents, with the presence of a dentist in the health team the CACC to assist inpatients, to guide them as to the prevention and injuries related to oral health, as well as refer them to headquarters of the institution when necessary to perform curative procedures.

The sample was composed of those responsible for children from 0 to 12 years old, totaling 41 interviewees, submitted to antineoplastic treatment, treated, and followed up at the Polyclinic during March and April 2018. The data were analyzed descriptively, using tables and graphs.

The operationalization took place with the first contact with the Unit of the Polyclinic for the presentation of the research project. Subsequently, scheduled the days on which the interviews took place, considering the hospital care schedule. Research participants signed the Informed Consent Form (ICF), authorizing their participation in the study.

Semi-structured questionnaires were applied individually to the responsible for the children, containing questions about general identification data and on oral health knowledge and practices carried out in the hospital environment. The inclusion criteria selected were based on the age of the children hospitalized and the correct completion and adherence to the research through the ICF and of the applied questionnaire. As exclusion criteria, patients older than 12 years, failure to correctly complete the questionnaire, and non-adherence by signing the informed consent form were considered.

This study was submitted for approval by the Ethics Committee in Research human beings from the North League Riograndense Against Cancer (CEP / LIGA). With approval opinion number: 2,483,316. Authorization to participate in the study was done through a consent form, signed in two copies, being one for the applicators and one for the participants, those responsible for the children were informed of the reasons for the study, making it clear that the data will be kept confidentiality and the identity of individuals protected, following ethical standards of research.

The questionnaires were validated to assess the clarity of the questions for obtaining better data collection. The data obtained from the research have statistical significance similar $p < 0.01$ to 0.05, showing its real importance. All research with human beings involves risk in different types and gradations. The clinical research is limited by ethical standards that promote respect for all human beings and protect their health and rights.

The study sees as a possible emotional risk the embarrassment of participants. Thus, to minimize this risk, the questionnaires were applied individually and in a reserved location.

The benefit of the present research is given by the understanding about the knowledge of those responsible for appropriate oral health practices in children, enabling, in the future, the construction of an oral health protocol standardized to be followed during antineoplastic treatment of patients children affected by cancer.

RESULTS

The sample of this research took place with 41 patients hospitalized in the polyclinic league against cancer. The profile of those responsible for children hospitalized occurred at an average age of 33.7 with a standard deviation of 7.1, 92.7% of female respondents. Of this total, 90.2% of the interviewees were the mothers of hospitalized children.

The mean age of children was 6 years old with a standard deviation of 3.07 and 51.2% were male. In addition, the majority 41.5% were in antineoplastic treatment for more than 12 months.

Data in Table 1 show the survey on the most common types of cancer found in infant patients in the polyclinic.

Table 1 – Absolute distribution by type of cancer presents in the sample studied.

Cervical Câncer	1	Nephroblastoma	1	Liver Tumor	1
Kidney Câncer		Neuroblastoma	3	Brainstem Tumor	1
Hepatoblastoma	2	Osteosarcoma	3	Ovarian Tumor	1
Leukemia	17	Rhabdomyosarcoma	2	Brain Tumor	1
Lymphoma	4	Sarcoma	1		
Medulloblastoma	1	Desmoplastic Tumor	1		

Source: Polyclinic. Natal, RN, 2018.

Regarding the type of cancer, Leukemia was the most prevalent type, affecting 41.5% of hospitalized children. Considering the method of choice for antineoplastic treatment, the most used was chemotherapy, in 48.8% of the children present in the studied sample, followed by the chemotherapy with surgery 19.5%.

It was also found that 68% of the children have already been seen by a surgeon dentist before antineoplastic treatment, except for 32% who did not have this service.

Most children, making up 39% of the percentage, were the first time to see a dental surgeon in the age group between 2 and 5 years, 37% before the age of two, 17% of 5 to 9 years, with the minority 2% visiting the dentist after 9 years of age. In the data collected from the survey, it was possible to attest that 95% of that responsible received information on how to properly hygiene your child's oral health, and only 5% did not acquire this information.

The table below lists the professionals who provided the most information about oral hygiene in the clinical environment.

Table 2 – Absolute values and percentages of responses regarding the professional who advised on the correct way to perform oral hygiene in the child.

PROFESSIONALS	n	%
Doctor	01	2.4%
Nurse + Dentist	01	2.4%
Nurse	01	2.4%
Doctor + Nurse + Dentist	01	2.4%
Dentist	34	83%
Others	03	7.4%
Total	41	100%

Source: Polyclinic. Natal, RN, 2018.

The information was mostly passed on by dental surgeons 83%, however, 7.4% were instructed by other professionals without being a dentist, doctor, or nurse. When asked about the performance of the daily hygiene of infant patients, 98% of the guardians reported performing daily and only 2% did not perform this practice.

Regarding the frequency of daily hygiene of infant patients, four different responses were reported, as shown in figure 1.

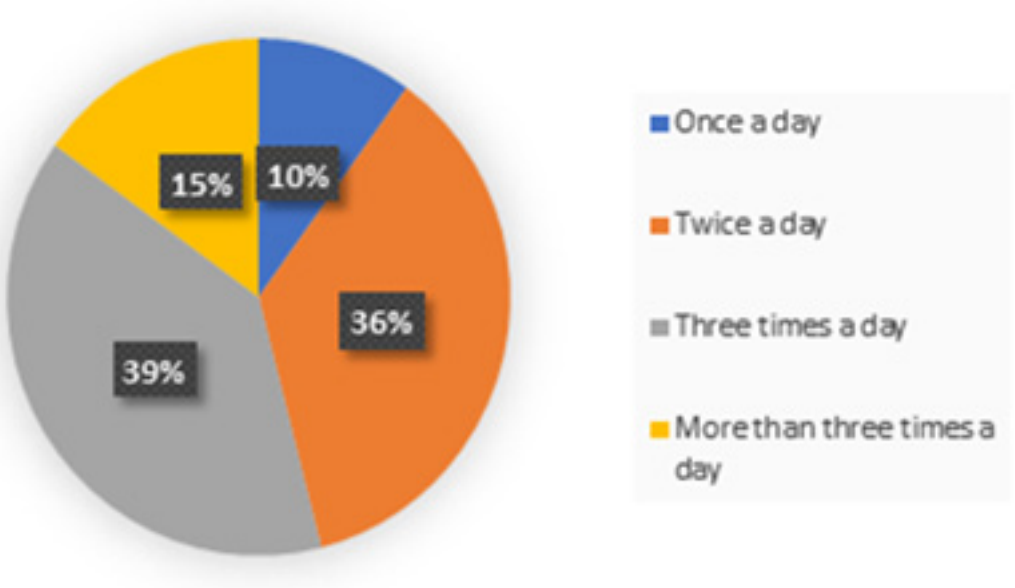

Figure 1 – Percentage of daily frequency of oral hygiene.
Source: Polyclinic. Natal, RN, 2018.

According to the graph, 39% of patients clean the cavity buccal three times a day, against 10% who perform it only once.

Figure 2 gathers information about those responsible for the children hospitalized, pointing out who is the main responsible for the hygiene of the oral cavity of these patients.

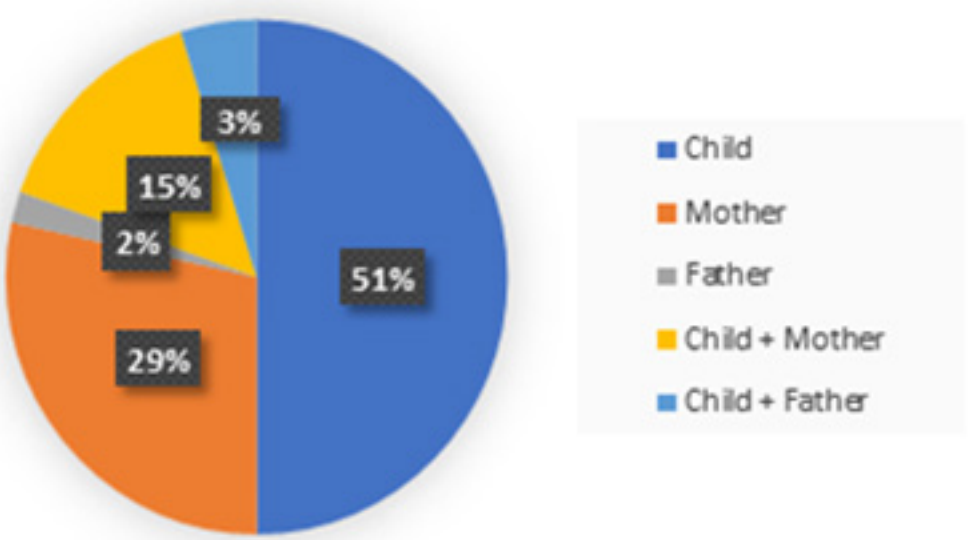

Figure 2 – Demonstrates answers about the person responsible for carrying out hygiene children's mouthwash.
Source: Polyclinic. Natal, RN, 2018.

With the data obtained by the interviewees, 51% of the hospitalized children perform their own oral hygiene. It is observed in the list of materials used for dental cleaning as reported in figure 3.

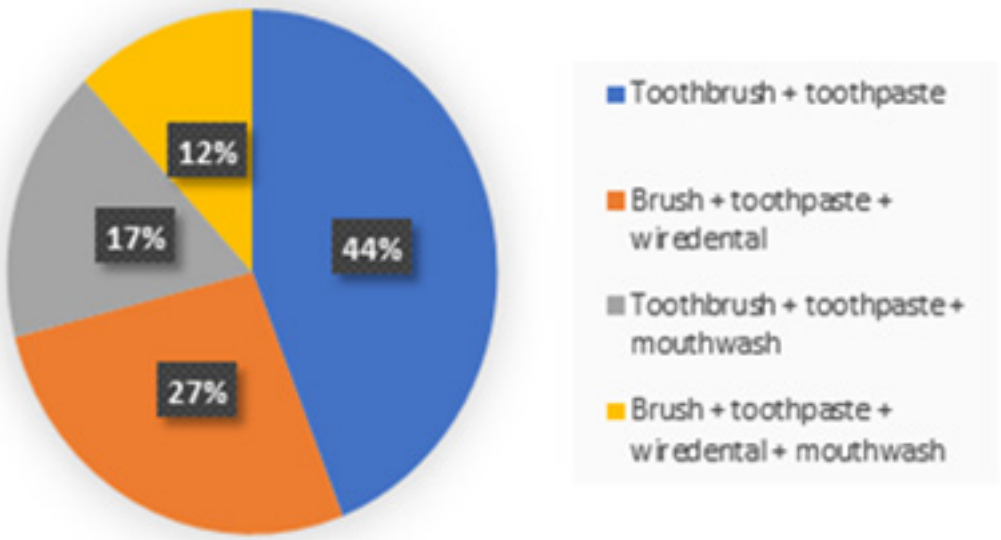

Figure 3 – Percentage of materials used for the child's oral hygiene.
Source: Polyclinic. Natal, RN, 2018.

The use of the brush and toothpaste are the most used materials, adding 44%, and may be associated with dental floss 27%.

It was found that 51% of those responsible identified some problem with oral health in your children. Of these, 51% reported the most common oral problems perceived by caregivers, were caries and cold sore 82.7%, and bleeding gingival 17.3%.

Regarding oral problems associated with antineoplastic treatments, 43.9% of children had already been affected by mucositis. Of the 41 patients hospitalized, 90.2% were accompanied by a dental surgeon during the antineoplastic treatment.

Table 3 shows the most common oral treatments, in the polyclinic of the league against cancer.

Table 3 – Absolute distribution by type of oral treatment present in the sample studied. Polyclinic (Natal / RN).

Types of treatment	n
Oral hygiene and Guidance	3
Laser treatment	1
Oral hygiene and guidance + Laser treatment	3
Oral hygiene and guidance + extraction before treatment	1
Dental cleaning and fluoride application + Laser treatment + Restoration	2
Oral hygiene and guidance + Dental cleaning and fluoride application + Laser treatment	11
Oral hygiene and guidance + Dental cleaning and fluoride application + Restoration	1
Oral hygiene and guidance + Laser treatment + Extraction before treatment	1
Oral hygiene and guidance + Dental cleaning and fluoride application + Extraction before treatment	1
Oral hygiene and guidance + Dental cleaning and fluoride application + Restoration + Extraction before treatment	1
Oral Hygiene and guidance + Dental cleaning and fluoride application + Laser treatment + Restoration	1
Oral hygiene and guidance + Dental cleaning and fluoride application + Laser treatment + Extraction after treatment	3
Oral hygiene and guidance + Dental cleaning and fluoride application + Laser treatment + Extraction before and after treatment	1
Oral hygiene and guidance + Dental cleaning and fluoride application + Laser treatment + Restoration + Extraction after treatment	2
All types of treatment	2
No type of treatment	6

Source: Polyclinic. Natal, RN, 2018.

The most prevalent procedures were an association of oral hygiene and orientation, dental cleaning and fluoride application, and laser treatment, constituting a total of 26.8% of children.

All those responsible 100% responded that they considered the presence of a dentist during the child's antineoplastic treatment.

DISCUSSION

During the research, it was observed the importance of those responsible for children hospitalized in the hospital environment. Family members/companions exercise a fundamental role in the context of child hospitalization, representing the reference about security, affection, affection, and support [15].

The data collected on the most common pediatric cancer types found in the polyclinic were leukemias, lymphomas, neuroblastomas, and osteosarcoma respectively. What differs from the findings by Arboleda et al. [16], in relation to the order of occurrence, in which his research showed that the most common neoplasms identified were leukemias, first, the tumors of the central nervous system occupying the second position and lastly the lymphomas.

In this study, the data obtained from the polyclinic showed that Leukemias were the malignant neoplastic hematological diseases that most affected the kids. The studies by Arboleda et al. [16] in retrospective research of data from the medical records of a pediatric hospital in São Paulo, Brazil, for 30 years, showed that the most common cancer in children is Lymphoma.

Mutti et al. [17], during research at a public hospital in the region of Northern Brazil, found that Leukemia cases totaled 47.26% of the result of the sample, while the types of lymphoma totaled 18.49% of incidence. Corroborating with the data obtained here during the research, in which they show a predominant majority of leukemia cases with 41.46% followed by lymphomas with 9.75% of cases.

Pediatric tumors affect individuals between 0 and 19 years old, corresponding to 1 to 4% of the total malignant tumors, in most populations. In Brazil, pediatric cancer represents about 3 to 10% of the total neoplasms [18].

Mortality rates in children with leukemia have shown a significant decrease. This reduction is greater among children aged 1 to 4 years and less striking in the 10 to 14-year-old group [19].

The World Health Organization (WHO) in 2018 established a target of 60% overall survival for all children with cancer, intending to save more than a million lives by the year 2030. The importance of humanized care for hospitalized children is even more present today, helping to minimize the number of deaths and psychological consequences for these patients [20].

The clinical picture of hospitalized patients can be aggravated due to immunosuppression and systemic conditions that make them more susceptible to the installation of oral infections, compromising their health status generally, needing more specific oral health care for prevention and treatment of these oral manifestations [21].

With the results obtained during this research, and about the frequency of performing daily oral hygiene in patients, it was found that 98% of the caregivers performed it daily and only 2% did not practice it. This agrees with the findings in the research by Lima et al. [22] in which 75% of the patients performed oral hygiene during hospitalization.

Regarding whom performed oral hygiene, the results of the Lima study et al. [22] pointed out that 32.50% of the children themselves performed this hygiene, followed by adults 29% and children assisted by adults 13.50%. Proving the data found here, in which 51% of hospitalized children perform their oral hygiene, followed by the responsible 31%, and when the children were assisted by an adult, these data reached 18%.

About the objects used to clean the oral cavity, the brush and the toothpaste were the most used materials, totaling 44%, and may be associated with dental floss 27%. This partly resembles the findings by Lima et al. [22], where the majority used a brush and toothpaste 73.75% and only one child (1.25%) used dental floss during this period.

As for the frequency of oral hygiene during hospitalization, 54% reported perform three or more times a day, 36% twice a day, and only 10% once per day. The data obtained in the research by Lima et al. (2016) go against those obtained here, in which 43.75% reported performing oral hygiene once a day, 22.50% twice a day, and only 8.75% reported performing oral hygiene three or more times a day [22].

According to the data collected in this study, it was possible to attest that 95% of that responsible received information on how to properly carry out the oral hygiene of the child and only 5% did not acquire this information. Contrary to the findings in the research by Lima et al in 2016, in which parents, when asked about the guidelines they received on oral hygiene during the hospitalization, it was found that 98.75% had not received guidance during the period of stay in the hospital [22].

Still according to Lima et al. [22], of those who received some guidance, about 1.25%, the only professional who performed was a nurse. Already in a search performed above, the dentist was the professional who provided the most guidance care with oral hygiene.

Study participants were asked about the importance of effective participation of a dental surgeon, in a hospital environment, so that health promotion measures were treated as a priority. The answers demonstrated that caregivers unanimously believe that it would be very important to insert the CD in this environment. In this context, the dentist would be responsible for motivating and raising the awareness of employees and companions of patients about the importance of oral care for the restoration of health, since they act as a change enabler.

The presence of the dentist in the hospital environment provides knowledge, motivation to hospitalized patients and even their companions in the generation of good habits. Patients in a hospital environment, whether admitted or not, when inserted into a multiprofessional team has a significant improvement in the quality due to preventive oral health care [14].

The dental surgeon has an efficient and permanent performance in the hospital environment of the Natal Polyclinic Unit (Liga Norte Riograndense Against Cancer), through the collaboration of the Support House for Children with Cancer, which patients during and after treatment, contributing to the rescue of citizenship, dignity, and quality of life. Thus, the procedures performed during therapy, laser treatment is more prominent, followed by hygiene and orientation, dental cleaning, and fluoride application, and, to a lesser extent, the extractions before, as well as after cancer treatment that is equivalent.

The progress of cancer treatment in childhood and adolescence has been extremely significant over the past 40 years. Today, around 80% of children and adolescents affected by the disease can be cured, if diagnosed early and treated in specialized centers, most of them having a good quality of life after adequate treatment [3].

The present research presented some limitations, among which the sample size, a fact that was not in the researchers' domain, because it depended on the number of children who were undergoing antineoplastic treatment in the collection period. In addition to these limitations, it is important to highlight the fact that cross-sectional study allows only the formulation of causal hypotheses and the shortage of more current and complete articles on the topic.

CONCLUSION

Therefore, it can be concluded that the presence of the companion in the environment hospital treatment reduces stress and favors the rebalancing of the health-disease process of hospitalized children, through practices of surveillance, bathing, and hygiene of the oral cavity.

According to the results obtained, regarding the knowledge of the responsible about oral health, they were aware of the problems of oral health in your children, with caries, cold sore, and gingival bleeding being the most reported.

Among the knowledge about oral hygiene practices, the parents knew its importance. It was seen that dental cleaning was performed daily, mostly two to three times a day, but in large percentage performed by the child himself, using a toothbrush and toothpaste, which may be associated with dental floss.

When it comes to the participation of the dentist in the treatment with antineoplastic agents, there were palliative procedures such as hygiene guidance cleaning, dental cleaning, and fluoride application, as well as low-level laser therapy intensity to prevent severe mucositis.

Thus, the performance of the dentist in this area, to raise the awareness of those responsible for numerous sequelae arising from the antineoplastic treatment that can be avoided or mitigated for the benefit of the patient. Thus, there is a need for more research on the topic, using different methodologies and the establishment of a care protocol with the oral hygiene of children hospitalized with cancer, since they are vulnerable in that period.

Collaborators

AO Silva, contributed to writing, data organization, review, and submission on the platform. AB Godoy contributed to structuring the ideas of the text and submission on the platform. LMRC Silva collaborated actively in the construction of graphs and tables and data organization. LT Marcelino capturing the data and applying the questionnaires. SC Gurgel participated in the collection of data, application of questionnaires and writing of the text. ALFH Soares guided throughout the research, organized the environment for data collection, helped in bibliographic research, corrections, and ideas organizations.

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