

# Knowledge and practice of oral health in child patients with cancer

## Conhecimentos e práticas sobre saúde bucal em pacientes infantis com câncer

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### ABSTRACT

The aim of this study was to use a qualitative approach of an exploratory nature to analyze the knowledge and practice of a nursing staff at *Hospital Infantil Joana de Gusmão* as regards oral health. The sample consisted of 2 nurses and 10 nursing technicians. Data collection was carried out through semi-structured interviews and the content was analysed considering 2 thematic groups: practice and oral health knowledge and meanings of health care. The results revealed a lack of attention concerning oral health care in child patients undergoing antineoplastic treatment. It could be concluded that there is a clear need to adopt measures directed towards oral health care to promote patient health and quality of life. Furthermore, training courses on oral health in oncology, as well as the inclusion of a dentist on the hospital staff, are also suggested.

**Uniterms:** Dental care for children. Dental staff.

### INTRODUCTION

The dentist, as a healthcare professional, must be prepared not only to treat dental alterations, but also to be responsible for maintaining the health of the oral cavity and aware of the well-being of the individual as a whole. More specifically, the oral health care of children involves various sectors, such as the family, society, governmental policies, in addition to dentistry. When acting in conjunction, these sectors seek to promote patient health<sup>1</sup>.

Dentistry based on the promotion of health care in a specific child population, such as patients affected by cancer, plays a fundamental role in re-establishing general health, and consequently, in the quality of life of these children<sup>2</sup>.

Among the malignant alterations that affect children, leukemia is the most prevalent, characterized by the uncontrolled production of immature leukocytes, which causes a series of important clinical and oral manifestations necessary for the diagnosis of the disease. The early diagnosis of leukemia is essential, as it determines a favorable prognosis in which the cure rate reaches values of up to 77% when treatment is performed in specialized centers<sup>1-4</sup>.

Chemotherapy in isolation or associated with surgery and/or radiotherapy is one of the main resources used in the treatment in childhood oncology. The main function of antineoplastic treatment is the destruction of malignant cells, preferentially when they are within a stage of mitosis. However, the cells of the oral and gastrointestinal mucosa, bone marrow and skin may manifest the secondary effects of antineoplastic agents, as they have a similar degree of mitotic activity<sup>5</sup>.

During antineoplastic treatment, the alterations in the oral cavity become more serious, due to the fact that chemical and radiotherapy do not differentiate neoplastic cells from normal cells<sup>6</sup>, and present the following sequelae: mucositis, temporary xerostomia and immunodepression, dental and/or opportunist infections, gingival hemorrhaging resulting from plateletopenia and disturbances in the formation of tooth germs when administered at the stage of odontogenesis<sup>6,7</sup>.

The prevention of and therapy for oral lesions resulting from antineoplastic treatment are fundamental considering that oral mucositis seriously interferes in the patient's prognosis, rendering the

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patient more susceptible to local and systemic infections, less tolerant to oral feeding, interfering in the dose and/or chemotherapy drug used, prolonging the time of hospitalization and raising the costs. Many of the oral and systemic complications can be ameliorated with adequate oral hygiene instruction, previous treatment for suiting, prophylaxis and control of these children, which greatly improves the quality of life of these patients in the treatment stage<sup>2</sup>.

In addition, it is worth emphasizing that disease and hospitalization are frequently the first emotional crises with which children are faced, making it imperative for the parents and the nursing team to have at least one common objective, to re-establish the child's health<sup>8</sup>.

As nurses and nursing technicians are the professionals that most come in contact with oncological patients and their guardians during the processes of intervention and treatment, creativity in the art of caring and emotional support must be appreciated and combined with technical skill and empathy<sup>9</sup>.

The health team needs to be adequately prepared and trained to meet the needs of the parents and patients in terms of offering emotional support, relieving pain, maintaining hope and providing assurance to minimize suffering and fear. Thus, it is necessary that a constant recycling and upgrading of knowledge become part of the routine of those who work in oncology, regarding both practices and measures related to education and human relations<sup>9</sup>.

Therefore, the aim of this study was to evaluate the knowledge and practice of the nursing team concerning oral health, both before and during chemotherapy treatment, as well as to evaluate how and where this knowledge is acquired.

## METHODOLOGY

This study is characterized by the use of a qualitative method. After approval from the UNISUL Research Ethics Committee (Protocol Nº. 08.046.4.02.III), the research was developed at the *Hospital Infantil Joana de Gusmão* (HIJG), characterized as a tertiary Hospital-School, considered to be a State hospital complex that is a reference for low, medium and high complexity pathologies.

The subjects of the study were nurses and nursing technicians. Sample selection was carried out by convenience and those that worked in the ambulatory and hospitalization sectors of the Oncology Department were invited to participate, totaling 2 nurses (E1 and E2) and 10 nursing technicians (TE1 to TE10).

After explaining the objective, method, guarantee of data confidentiality and the possibility of giving up at any stage of the research, the participants signed the Term of free and informed consent.

The technique used for data collection was the semi-structured interview. Data were collected by means of identification (initials of the individual's name, gender, age, marital status, time of professional qualification, period of time worked at the institution) and the interview (location, date and time).

The guided questions of the semi-structured interview dealt with the subject of the perception of nursing techniques as regards knowledge and practice of oral health in child cancer patients. To guarantee anonymity, the interviewees were denominated E1, E2, and TE1 to TE10.

To evaluate the proposed instrument, a pilot project was carried out with two nursing technicians, who, in turn, were not considered when the study was conducted. The interviews were held in one of the meeting rooms at the hospital itself, and were recorded and transcribed.

The data were analyzed from the first interview by the Analysis-Reflection-Synthesis process. In this process, the analysis breaks down the data, while synthesis integrates them into the various dimensions and contexts of the individuals' lives. Analysis and synthesis were performed synergically, through reflection, which is a reconsideration of the data, in association with sensitivity and reason<sup>10</sup>.

Given these considerations, the proposed theme is presented from the empirical data relative to the statements selected from the study participants' set of data and analyzed with support from the literature.

## RESULTS AND DISCUSSION

The profile of the studied population can be observed in Table 1.

**Table 1** - Profile of the interviewed nursing team. HIJG, 2008

| INTERVIEWEE | AGE (YEARS) | MARITAL STATUS | TIME OF PROFESSIONAL QUALIFICATION (YEARS) | PERIOD OF TIME WORKED AT THE UNIT (YEARS) |
|-------------|-------------|----------------|--|---|
| E1          | 44          | single         | 20   | 2   |
| E2          | 50          | single         | 25   | 16  |
| TE1         | 32          | married        | 8  | 1   |
| TE2         | 36          | married        | 15   | 2   |
| TE3         | 46          | divorced       | 11   | 1   |
| TE4         | 41          | single         | 23   | 7   |
| TE5         | 45          | married        | 10   | 3   |
| TE6         | 25          | single         | 6  | 2   |
| TE7         | 50          | married        | 4  | 2   |
| TE8         | 26          | single         | 8  | 4   |
| TE9         | 48          | single         | 21   | 14  |
| TE10        | 48          | married        | 15   | 5   |

After data collection, it could be noted that the female gender was predominant (91.7%), as there was only 1 (0.3%) male nursing technician, which demonstrates the strong activity of women in the pediatric area that can be explained by the maternal instinct and child care<sup>11</sup>.

The mean time of working in the HIJG oncology sector was 4 years, characterized as a short period, which may be related to the difficulty of dealing with children who are suffering, as well as the feeling of impotence in the face of death, as reported by one of the technicians: “It is very stressful to work in oncology; it is awful to see children going through this and there is almost always a mother crying because of the exams [...] it is difficult to part” (TE5), confirming the findings of Paro *et al.* (2005)<sup>9</sup>.

Leukemia is a malignant disease found in pediatric patients and is characterized by the irregular and exaggerated proliferation of blood cells<sup>12,13</sup>. According to Hespagnol *et al.* (2008)<sup>3</sup> antineoplastic chemotherapy is performed in 70% of the patients affected by leukemia. Of these, approximately 40% to 100% present oral complications resulting from therapy<sup>1,2,4,14</sup>.

Oral manifestations resulting from therapy include candidiasis, gingival bleeding, xerostomia, dysgeusia, osteoradionecrosis, trismus, dental caries and mucositis. The latter is the most frequent complication and is caused by the loss of mucosal integrity, forming ulcerations which, in addition to being painful, serve as a port of entry for infections<sup>2,3,6,7,12,13,15,16</sup>, corroborating the declarations of the nursing team: “In the mouth, they mainly present mucositis” (TE4).

This complication affects the patient within 3 to 7 days after the administration of medication and remains for a few days when there is only the

presence of medication, or for a few weeks when there is an association between the medication and an infection<sup>7,17</sup>: “Almost after a few days, mucositis begins. Then the children no longer eat [...], don’t want to perform hygiene...” (T10).

Chemotherapy treatment causes myelosuppression, which consequently brings about neutropenia in such a way that mucositis becomes a risk factor for local and systemic infections. There is a 4-fold increase in the chance of septicemia when compared with patients without an oral affliction. In cases in which mucositis is severe, in approximately 50% of the patients, it becomes necessary to change, and quite often even temporarily interrupt, the treatment plans. This fact demands a high cost, due to the increase in hospitalization time and the administration of drugs other than chemotherapy medications. Moreover, it diminishes the quality of life, increasing morbidity and mortality<sup>14</sup>.

To minimize the effects of mucositis HIJG, a protocol involving daily mouthwashes with 0.12% chlorhexidine and a solution containing Aluminum Hydroxide and Vitamin E should be applied: “[...] chlorhexidine is used when there is light mucositis; when it is more severe, a solution with Vitamin E and Aluminum Hydroxide is recommended [...]” (E2). Similarly, it was observed that: “When they are hospitalized, almost all the children are already undergoing chemotherapy [...], so they already have a prescription for chlorhexidine [...] some even take it home with them (TE8).

According to the literature, vitamin E has shown adequate results against mucositis, while chlorhexidine has proven to be the antiseptic with the best antibacterial effect, as it is maintained in the oral cavity for up to 12 hours. However, tooth pigmentation, peeling of the tongue dorsum and

mucosa, mouth sensitivity and dysgeusia are some of the side effects found when the solution is used for a prolonged period<sup>18</sup>.

According to Costa *et al.* (2003)<sup>19</sup>, the use of a chlorhexidine solution may be considered a preventive method when used before chemotherapy, and has shown to be effective, as it reduces the development of oral complications, although a burning sensation has also been reported.

When asked about the origin of this information, many of the interviewees affirmed that they are only passing on medical advice; E2 affirmed that this protocol was established as a routine, since from the time the sector dentist and doctors would prescribe the solution. The nursing team reported that as soon as the need for antineoplastic treatment had been found, the doctors advised the parents that one of the consequences of chemotherapy was the development of oral lesions: "The doctor him/herself already instructs [...] When the child comes to the first consultation, the doctor already says that it could cause sores in the mouth; this is informed in the consulting room and we only reinforce the instructions (TE2).

They also affirmed that this search for information only occurs when pain appears; before this, they give no importance to oral health: "[...] the parents only come to us when the child is in pain or is bleeding, or even with some sort of sore in the mouth [...] when this does not happen, they are not interested in problems of oral health" (TE4).

It is believed that this behavior is due to the guardians greater concern over the treatment of the disease itself: "Generally, the mother comes for the treatment with her concern completely focused on chemotherapy [...] They ask no questions, because the main focus is on the treatment [...] they are worried about the exam, which the doctor had told them was bad, and the chemotherapy the child will undergo the entire week. [...] This is more important" (E1).

Concerning oral hygiene, all participants claim that the person responsible for this is the mother herself, or the person accompanying the patient: "As they are children, their mothers perform the hygiene; we generally stay with them, and when they have any difficulty, we help, but this hardly ever happens" (TE8), reaffirming the findings of Barbosa *et al.* (2008)<sup>1</sup>. For those who present bleeding, feel a great deal of pain or do not know how to perform mouthwashes, oral cavity cleaning is restricted to the use of gauze dampened in the chlorhexidine solution or chilled physiological solution: "When the child does not know how to perform a mouthwash or is bleeding, we wrap some gauze around a finger

and pass it around the child's mouth" (TE5).

It is known that the quality of oral hygiene is directly connected with less appearance of oral lesions. Patients who perform satisfactory hygiene have fewer episodes of mucositis as compared to those whose hygiene is precarious. The health team that was interviewed recognized the importance of oral hygiene, as described in the following affirmation: "[...] the mouth is the focus of everything; it is the most contaminated thing we have. And as the children become immunosuppressed, one of the first things that must be guided is oral hygiene [...]" (TE8). However, when asked about toothbrushing, the technician reported that he/she does not give this instruction to the parents, and only taught them to perform mouthwashes.

This could be explained by the lack of preparation to perform this activity, considering that 100% of the interviewees reported that in their training, they had never had professional contact with the dentist. According to the reports, oral hygiene was superficially taught within the general hygiene of the patient: "This gets into basic bodily hygiene, given at the beginning of the subject of the Introduction to Nursing" (T6).

When the mothers noted that oral complications did in fact occur, in addition to seeking the nurse, they also sought out the hospital's dental service. Although this attendance existed, it was only offered once a week and only for a short period of time: "The dentist is new here; this [service] is being implemented now [...] but it has been in great demand recently. We have one morning per week to attend to all the children and two or three new children arrive per day (...) the dentist cannot keep up with the demand" (TE10).

With this reality, one perceives that oral health is not likely to be re-established before the antineoplastic treatment begins. It is known, however, that the presence of pre-existing oral diseases, together with the low immunity that the disease and treatment cause, are factors capable of causing severe infections, altering the course of therapy, and placing the patient's life at risk<sup>20</sup>.

According to one of the members of the nursing team the solution to this problem would be for the dentist to be present every day of the week: "If the dentist were here every day it would be very good; it would help a great deal. This way it would be possible to perform treatment, there would be time to take the children who arrive, and even if it were a severe case that would automatically go directly to chemotherapy, it would be possible to resolve more serious matters in the same week" (TE10).

The team affirmed that the parents received

the instructions well, and that although they only concerned themselves with this when the child was in pain, they did everything they were taught to do. According to them, the reason for this acceptance was the fear of the disease and the desire to see their child well, reaffirming that the diagnosis and difficulty of dealing with the disease causes fragility in the families<sup>21</sup>: “The families in oncology are different; they learn in the course of time. As it is a disease that is considered serious, they become very frightened and accept, they want their child to get well” (TE2).

As far as advice for the parents is concerned, various aspects must be considered. There is a need for constant preparation on the part of health professionals, to answer the patients’ questions and deal with oncological patients. When entering the oncology sector, the professional should receive technical training and have moments in which possible doubts and difficulties can be discussed<sup>9</sup>.

According to the findings of Oler & Vieira (2006)<sup>22</sup>, the majority of individuals on the nursing team did not receive specific preparation for working with oncological pediatric patients, as can also be perceived in the report of TE1: “We had no specific course; all we had was that which we learned in the technical course itself, unless we learned from the nurse who explained how the routine worked, but a directed course, no, that we did not have.”

Nursing is a profession with the largest number of professionals within the scope of the hospital and it is up to the nursing professional to assure that the best attendance and assistance is given to the parents and patients; this is considered the science of health care<sup>23</sup>. The constant search for knowledge has become imperative, since these professionals work with the health-disease process both in individuals and collectively.

## FINAL CONSIDERATIONS

Attending to oncological patients, especially the pediatric patient, requires a differentiated preparation on the part of the health team.

It was therefore concluded that it is necessary to adopt measures directed towards the repercussions of antineoplastic treatment on the oral cavity, in an attempt to promote health and the quality of life; it is also suggested that training courses in oral health in the oncology sector should be offered regularly, and that a dental surgeon should be included in the hospital team.

## RESUMO

O objetivo deste estudo foi analisar, em caráter exploratório e com uma abordagem

qualitativa, os conhecimentos e práticas da equipe de enfermagem sobre a saúde bucal em pacientes infantis com câncer. A amostra foi composta por 2 enfermeiras e 10 técnicos em enfermagem. A coleta de dados foi feita através de entrevista semi-estruturada e a análise do conteúdo foi realizada em 2 núcleos temáticos: práticas e conhecimentos sobre saúde bucal, significados dos cuidados em saúde. Os resultados demonstraram a deficiência de atenção quanto aos cuidados com a saúde bucal em pacientes infantis em tratamento antineoplásico. Concluiu-se, portanto, a necessidade de adoção de medidas voltadas às repercussões destas na cavidade oral, com vistas à promoção da saúde e à qualidade de vida. Sugere-se, também, a realização de cursos de capacitação em saúde bucal ao setor de oncologia, bem como a inclusão do cirurgião-dentista à equipe hospitalar.

**Descritores:** Assistência odontológica para crianças. Recursos humanos em Odontologia.

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