



**CARE OF ONCOLOGICAL NURSING IN RADIOTHERAPY**  
**CUIDADOS DE ENFERMAGEM ONCOLÓGICA EM RADIOTERAPIA**  
**CUIDADOS DE ENFERMERÍA ONCOLÓGICA EN RADIOTERAPIA**

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**ABSTRACT**

**Objective:** to identify the care of Oncology Nursing in Radiotherapy. **Method:** this is a qualitative, descriptive study performed at a referral center for cancer treatment with three nurses. The data were collected through semi-structured interviews through a script and analyzed using the Content Analysis technique. **Results:** key expressions and central ideas were extracted, three categories emerged that designed the nurse's performance: a) Multidisciplinary team involved in radiotherapy; b) The work process of the nurses in radiotherapy; and c) Practices to mitigate the side effects of radiotherapy **Conclusion:** it is emphasized that oncological care in radiotherapy consists of individualized actions that directly aid in the prevention, minimization and / or treatment of the adverse reactions caused by the treatment, articulations promote better quality of life of cancer patients. **Descriptors:** Nursing Oncology; Nursing care; Radiotherapy; Radiological and Image Nursing; Skin care; Quality of Life.

**RESUMO**

**Objetivo:** identificar os cuidados de Enfermagem Oncológica em Radioterapia. **Método:** trata-se de um estudo qualitativo, descritivo, realizado em um centro de tratamento oncológico referência com três enfermeiras. Coletaram-se os dados mediante entrevistas semiestruturadas por meio de um roteiro e analisados a partir da técnica de Análise de Conteúdo. **Resultados:** extrairam-se as expressões-chave e ideias centrais, emergiram três categorias que desenharam a atuação do enfermeiro: a) Equipe multidisciplinar envolvida na radioterapia; b) O processo de trabalho das enfermeiras em radioterapia; e, c) As práticas para amenizar os efeitos colaterais da radioterapia **Conclusão:** ressaltam-se que os cuidados oncológicos em radioterapia consistem em ações individualizadas que, auxiliam diretamente na prevenção, minimização e/ou tratamento das reações adversas causadas pelo tratamento, articulados promovem melhor qualidade de vida do paciente oncológico. **Descritores:** Enfermagem Oncológica; Cuidados de Enfermagem; Radioterapia; Enfermagem Radiológica e de Imagem; Cuidados com a Pele; Qualidade de Vida.

**RESUMEN**

**Objetivo:** identificar los cuidados de Enfermería Oncológica en Radioterapia. **Método:** se trata de un estudio cualitativo, descriptivo, realizado en un centro de tratamiento oncológico referencia con tres enfermeras. Se recolectaron los datos mediante entrevistas semiestructuradas por medio de un guion y analizados a partir de la técnica de Análisis de Contenido. **Resultados:** se extrajeron las expresiones clave e ideas centrales, surgieron tres categorías que diseñaron la actuación del enfermero: a) Equipo multidisciplinario involucrado en la radioterapia; b) el proceso de trabajo de las enfermeras en radioterapia; y c) las prácticas para amenizar los efectos colaterales de la radioterapia **Conclusión:** se resalta que los cuidados oncológicos en radioterapia consisten en acciones individualizadas que, auxilian directamente en la prevención, minimización y / o tratamiento de las reacciones adversas causadas por el tratamiento, articulados promueven mejor calidad de vida del paciente oncológico. **Descritores:** Enfermería Oncológica; Cuidado de Enfermera; Radioterapia; Enfermería Radiológica y de Imágenes; Cuidado de la Piel; Calidad de Vida.

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## INTRODUCTION

It is understood that radiotherapy is a modality of curative and palliative treatment capable of alleviating the symptoms associated with the disease and improving the quality of life of cancer patients worldwide, being prescribed exclusively or combined with other treatments.<sup>1-2</sup> It is considered an essential part of the highly complex care in up to 70% of cases of malignant neoplasms,<sup>3</sup> and the radiotherapy treatment can be performed in two ways: a) brachytherapy or short-term radiotherapy, when the source with the radioactive material stays in contact with the patient's organism and b) teletherapy or remote therapy, when the source emitting radiation is approximately one meter from the patient. In the teletherapy (focus of this research), X-ray bundles, gamma rays, high-energy electrons, among others.<sup>4</sup>

It is necessary, for the success of the treatment of oncological patients, the joint and collaborative work of different professionals that make up the multidisciplinary team, being: radionologists, physicists, nursing professionals, radiological professionals, among others, who are involved in several domains of patient well-being during the teletherapy treatment.<sup>5</sup>

It should be emphasized that the Nursing consultation is a specific activity of the nurse, according to the Decree Law no. 94406, of June 1987, being used primarily to promote health and quality of life of patients. It becomes, then, in the assistance of the nurse to the patients in treatment of radiotherapy, the basic Nursing consultation.<sup>7</sup> It should be emphasized that the Nursing consultation is a specific activity of the nurse, according to the Decree Law n. 94406, of June 1987, being used primarily to promote health and quality of life of patients. It becomes, then, in the assistance of the nurse to the patients in treatment of radiotherapy, the basic Nursing consultation.<sup>8</sup>

A series of specific treatment care, both side effects and emotional challenges are demanded by the oncological patient.<sup>9</sup> These side effects result from the cumulative dose of radiation in the healthy tissues adjacent to the tumor, which may be acute, occurring during the treatment, or late, and may occur even years after the end of treatment.<sup>10</sup>

It is emphasized, however, that while there is research on Oncology practitioners in general, few studies focus on Radiotherapy practitioners, in particular nurses.<sup>11</sup> The relevance of the research is also justified by the need to know what are the technical and

psychological attributions involved in the care of the cancer patient, performed by the nurses, in order to reflect on new practices that may be useful to improve the life context of these patients.

## OBJECTIVE

- To identify the care of Oncology Nursing in Radiotherapy.

## METHOD

This is an exploratory, qualitative study carried out in a reference center for the treatment of cancer patients in Santa Catarina, Southern Brazil. Data were collected from January to February 2018 through open and individual interviews recorded in audio recording with an average duration of 30 minutes. All interviews were conducted at the participants' workplace.

The sample composed of three nurses who are part of the Nursing team of the researched scenario was highlighted, totaling three nurses who share particular characteristics and could provide rich, relevant and diversified data pertinent to the research question. We adopted the selection criteria: full-time nurses working in the Radiotherapy sector, with experience in Radiotherapy for at least two years.

The data was collected through a script with six questions, focusing on the actions performed by the nurses and the protocol used in the place to conduct and guide the process of work in the service of Radiotherapy, based on the responses of new questions that have arisen.

For the analysis of the data, we used the Content Analysis technique, which proposes three fundamental phases: pre-analysis, material exploration and treatment of results (Bardin).<sup>12</sup> In the pre-analysis, a previous reading of all the material resulting from the interviews was carried out. It consisted of the exploration of the material in analyzing the data, specifically, all the speeches of the participants. Three categories of themes emerged from the data analysis: a) Multidisciplinary team involved in Radiotherapy; b) Nursing work process in Radiotherapy and c) Practices to mitigate the side effects of Radiotherapy. The treatment of the results was coded together with the literature on the subject to make the data meaningful and valid. The results were validated individually, with each study participant.

This study was approved by Resolution No. 466/12 of the National Health Council of the

Ministry of Health (NHC/MH) and its project was approved by the Research Ethics Committee of the Oncology Research Center, obtaining approval with Certificate of Presentation for Ethical Assessment (CAAE) number 81340317.6.0000.5355. It is reported that all study participants, when invited, gave written consent and, in order to guarantee the confidentiality of the interviewees, identification codes (E1, E2 and E3).

## RESULTS

The sample of this study was formed by three nurses who work in the oncology patient care in the radiotherapy service investigated, with a mean age of 40 years.

Three interrelated units of analysis emerged from the investigated phenomenon: a) Multidisciplinary team involved in Radiotherapy; b) Nurses' work process in Radiotherapy and c) Practices to ameliorate the side effects of Radiotherapy.

It was reflected in the analysis unit "Multidisciplinary Team Involved in Radiotherapy" - by the participants, that the accomplishment of a teletherapy treatment involves several interrelated stages, which are

performed by different health professionals, with specific knowledge that complement each other to ensure the reproducibility of the treatment. One works in this multidisciplinary team, in a dynamic and synchronized way.

*The team consists of the Nursing service, medical radiotherapists, speech therapy service, nutrition, dentistry, psychology, occupational therapy, physiotherapy. (E2)*

*It is quite complex, are several professionals involved in the development of patient care quality, involves nutritionist, dentistry, speech therapist, radiotherapist, equipment staff, who are physicists, radiology technicians and social worker, all together, integrated. (E3)*

Numerous professionals who are part of the work team were identified in the narrative of the participants, emphasizing the complexity involved in the patient care process.

The interviewees also raised all the professionals who are part of the multidisciplinary team and participate in the oncology patient's teletherapy treatment in the context of the study, as shown in figure 1.

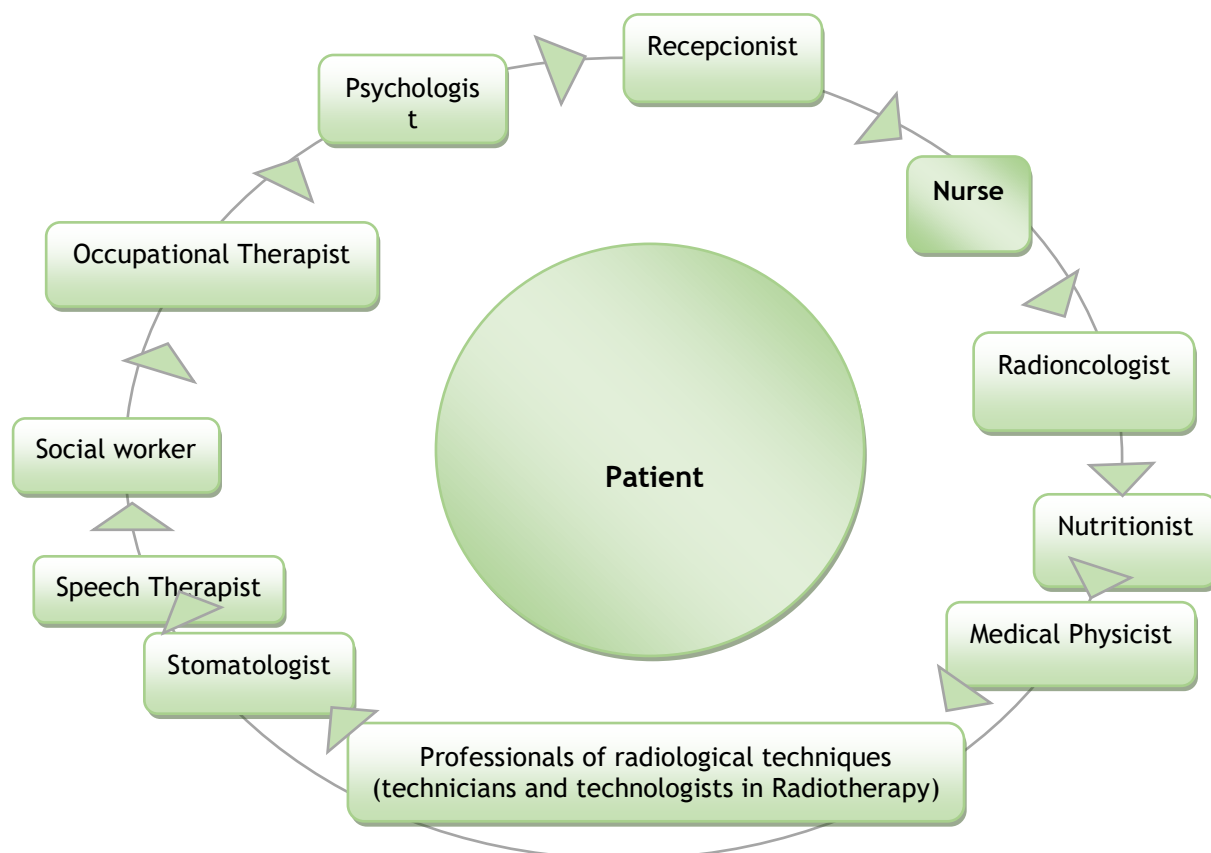


Figure 1. Multiprofessional team involved in the treatment of Radiotherapy. Florianópolis (SC), Brazil, 2018.

It is noteworthy that all the professionals who are part of the multidisciplinary team, identified in figure 1, act in the teletherapeutic process in an interactive way for the development of the treatment, and the knowledge for acting in Radiotherapy is essential.

*In radiotherapy, it is crucial that you know some concomitant protocols that you can associate and distinguish the effects of radiation therapy and what the concomitant effects. (E3)*

In the second unit of analysis - "Nursing Process in Radiotherapy" - participants were

told that before the start of treatment, the patient undergoes the first consultation of Nursing, in the Radiotherapy sector, called a history of Nursing, as already mentioned the Nursing consultation is a specific activity of the nurse.

At this moment the patient is interviewed and will receive initial guidelines related to the procedures that will be performed.

*We started with first patient care, which is the history of Nursing, that we go through, interview the patient, pass the guidelines, and deliver everything in writing. There are some patients who need aloe vera gel, so*

*they already take the cream and the guidelines. (E1)*

It is allowed by the nurses' autonomy, reported by all the participants, that, in addition to the emotional orientations, medications and specific cream are also provided to apply in the irradiated place shortly after the first application of treatment.

Figure 2 shows a summary of the nurses' performance in the service researched, above all, regarding the Nursing consultation in the process of work in service of Radiotherapy.

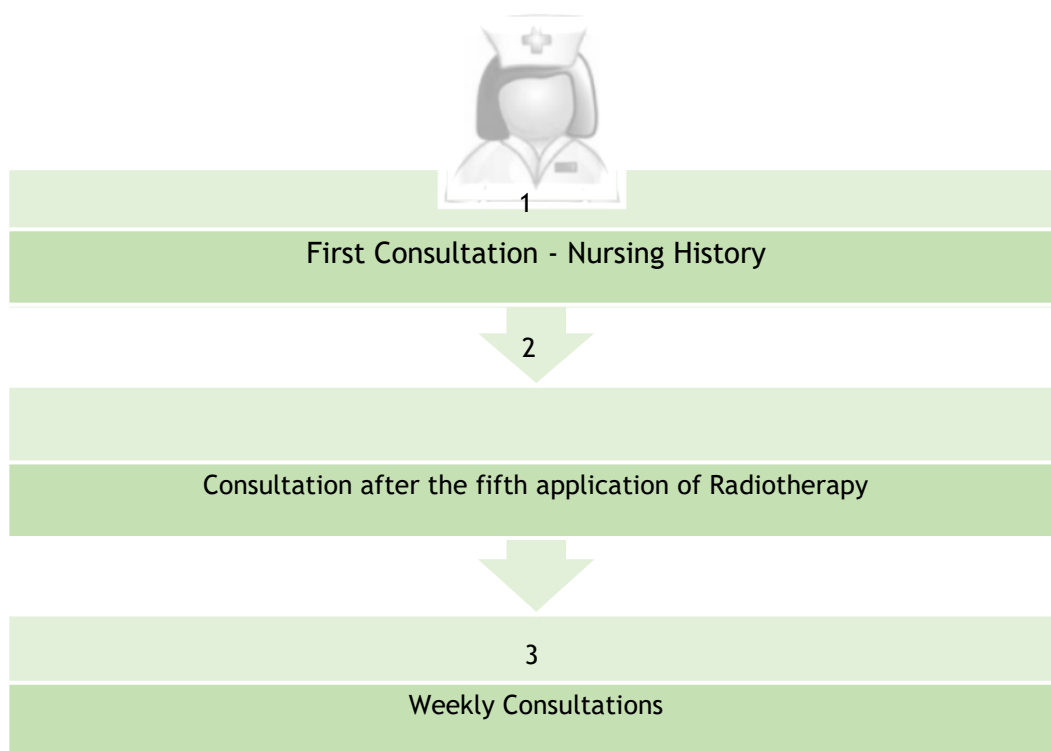


Figure 2. Nursing performance in radiotherapy service. Florianópolis (SC), Brazil, 2018.

It was demonstrated by the participants that, after the beginning of the teletherapy treatment, from the fifth application, the patient performs the second Nursing visit, receiving more specific orientations about the side effects that may occur as a result of the treatment.

*When it completes five days of application of Radiotherapy, but this is not exclusive, there is an exception. If, perhaps, the patient had doubts or for some reason a problem occurred in the treatment in these five days of treatment, or he missed the markings, he will pass us and we will pass the guidelines according to his complaint. (E3)*

During the course of the treatment, the patient is given weekly consultations in Nursing, where the nurse guides the patient about the possible doubts that this may have. In addition, evaluations of the irradiated skin are performed and, if necessary, other recommended creams are given for the side effects presented by the patient, thus seeking

to minimize toxicity. It should be noted that, if necessary, there is a possibility of smaller intervals between weekly consultations.

*The weekly consultations, once a week, which we call revision, where it is the case of evaluating the skin of the patient, reinforcing on the guidelines of care during the treatment, treatment with the skin and also if there is need of some dressing, the nurse accompanies throughout the treatment. (E2)*

The third unit of analysis - "Practices to ameliorate the side effects of Radiotherapy" - is an odd category that represents the real reflexes of the solutions performed through the actions of the nurses related to the process investigated.

It was shown by the participants, in relation to the effects caused in the patients by irradiation, the radiodermite as the most common adverse effect of the teletherapy treatment.

*They have a lot of radiodermatitis and they have several degrees, and they are, on average, one to four, which are evaluated*



*weekly. If you have radiodermatitis, you have two to three appointments in the week. (E1)*

During the weekly consultation, the nurse performs a skin evaluation aimed at the prevention and minimization of radiodermatitis. At the first patient care, the nurse begins the skin care protocol, indicating the use of chamomile and cream based on aloe vera. It should be noted that, in the service studied, patients receive this cream free of charge during the whole teletherapy treatment.

*The medications the nurse indicates are topical medications, which are the creams. The protocol that we adopt here is aloe vera cream, among them, according to the evaluation of the skin, we also adopt other creams, such as Bepantrix [Dexpantenol 50 mg / g], Dermacerium [Cerium Nitrate 0.4% , Silver Sulfadiazine 1%] and the Cavilon [Cavilon cream barrier 92gr]. In addition, we advise compress with chamomile tea. (E2)*

It has been demonstrated that it is very important to follow some recommendations for use, such as: applying the cream three times a day, after radiotherapy and at most, five hours before the same, and application of chamomile tea compress; In this case, the indication is to make 500 ml of water for two sachets, and it should be applied at room temperature for 15 minutes, three to four times a day.

*We started with aloe vera gel, routine use three times a day until the end of treatment. And the rest of the ointments and creams is according to the evaluation. (E1)*

It should be emphasized that the interviewees also recommend not to place a bag of hot water and ice on the spot; do not go to the sauna; do not expose the site to the wind; wear loose cotton clothing; decrease friction in the treatment area; do not use deodorant when the irradiated region is the armpit; do not swim in chlorinated water and do not wear a tie.

*So the general recommendations of skin care is not to expose this area treated to the sun or cold, such as, for example, no bathing and swimming during treatment, avoiding excessive heat or cold on the skin, do not use hot water bag or cold water bag. You can not use any type of adhesive in the treatment area, for example Band-Aid plaster. (E2)*

## DISCUSSION

This study aimed to identify the role of nurses in the process of work in the radiotherapy service. It is explored, in the

oncological area, by a few researches, this theme, above all, of the importance of the nurse's role in the systematization of Nursing care. This is divided into stages to plan, execute and evaluate the needs that arise during the treatment provided to the patient, and an important step in the systematization of Nursing care is the Nursing intervention through the care plan.<sup>13</sup>

It is vital to understand, although each Radiotherapy service has its own protocol, how the nurse acts and contributes to the development of the teletherapy treatment, above all, those actions that are highly necessary to not compromise the patient's quality of life.

In relation to the multidisciplinary team involved in radiotherapy, it is important to carry out the procedures with caution and with good communication among the professionals to guarantee the daily reproducibility of the treatment in an accurate and safe way.<sup>14</sup>

It is believed that today, treating a patient successfully using ionizing radiation requires, in addition to specialized technology, a complex integration between the members that make up the multidisciplinary team. It becomes, in cancer services, this work among the multidisciplinary team vital for the proper functioning of oncological practice.

It is perceived, therefore, that quality in Radiotherapy is a dynamic concept that needs to be measured and re-evaluated using scientific methods and user feedback. In the successful implementation of a quality assurance program in radiotherapy, experience, training and coordination in a teamwork environment is required.<sup>15</sup> It is considered, in a context of increasingly specialized medical practice, where the sharing of knowledge among the different professionals can directly affect every treatment, that the understanding of different knowledge among professionals promotes teamwork in the health area.<sup>16</sup> In this way, the work of the multidisciplinary team is considered very important by the health services and, currently, it is widely established in Radiotherapy as well as in all spheres of medical practice.

In relation to the nurses' work process, according to the specific literature, it can be seen that the process of assisting and caring for the cancer patient is an area inherent to Nursing.<sup>17</sup> It is important to note that, in Radiotherapy services, a team of nurses capable of dealing with the treatment requirements and the individuality of each patient is essential. It is also important to

emphasize the training of specialist nurses in Oncology, especially in Radiotherapy, given the inherent complexity of this therapeutic modality.<sup>18</sup>

The Federal Nursing Council, through the Resolution of COFEN-211/1998, on the work of the nursing professional working with ionizing radiation.<sup>7</sup> This resolution establishes that this professional must be included in the administrative, care and educational area and, in addition, must participate in quality assurance programs and be able to act effectively in routine and emergency situations. The promotion and dissemination of preventive and curative health measures are also determined, and the professional role of the nurse is identified by the dimensions of care in health care, education, research and management, dimensions that are articulated and influence directly the quality of care.<sup>19</sup>

It is pointed out that, in the service researched, the nurses act from the first attention to the patient, doing interviews and providing both verbal and written instructions. It is inferred that the actions of nurses in the care of cancer patients are resolute and participatory, covering all areas of action, promoting a relationship of trust, offering a quality and humanized care, in order to reduce the effects caused during treatment. Thus, it is necessary to know all the stages of radiotherapy treatment, conducting their activities based on an in-depth analysis of patient care.<sup>18</sup>

It was emphasized, in the interviews, that, after five days of teletherapy application, in most cases, the patient returns to the consultation with the nurse, being this consultation essential at this moment, an essential tool for the patient's quality of life and favorable condition for if you offer safe care.<sup>20</sup> It is recalled that the Nursing consultation, in the process of work in Radiotherapy is a private activity of the nurse, according to the law n. 7.498, of June 25, 1986.<sup>8</sup>

In addition to guiding patients in relation to side effects, nurses also need to deal with the emotional effects that include: fear, anguish, and change in routine treatment. It is understood that, often, the family is also present and shaken with the diagnosis of their loved one, and the nurse has, then, the role of trying to find ways that help in the improvement of life of the patient, as well as of the relatives.

These professionals play an essential role in supporting cancer patients, coordinating patient care, managing complications related

to the disease, and monitoring their responses to interventions in the health system.<sup>21</sup>

It has been shown that nurses also provide products to alleviate treatment symptoms, such as creams, in relation to practices for mitigating side effects. It should be noted that there are also weekly review visits for skin evaluation and, at that time, the guidelines regarding skin care are reinforced and, if there is external injury, curatives can be performed.

Among the side effects resulting from the treatment, the most commonly reported effects were the radiodermatitis, which can occur in different degrees and, in the cases of radiodermatitis, the patient is consulted two to three times during the week.

The diagnosis of the reference nurses for the development of the Nursing interventions is made possible, allowing the critical reasoning and clinical judgment of the nurse to be performed.<sup>22</sup> Patients and their families are supported and trained, with information for the minimization of side effects of teletherapy treatment as a central component in Nursing care in the Radiotherapy environment.<sup>9</sup> Radioiodine is one of the most common adverse effects of radiotherapy and should be prevented, minimized and / or treated by the nurse according to with recommendations and / or interventions based on scientific evidence.<sup>23</sup>

It is demonstrated in research that up to 85% of patients will experience some form of cutaneous reaction, which will vary from local erythema to wet desquamation,<sup>24</sup> and the cause of a cutaneous reaction of radiotherapy is the absorption of ionizing radiation, since, skin tissue with high cell turnover rate, ionizing radiation has very common adverse reactions, presenting clinical manifestations of injury in a short period of time after irradiation.<sup>2</sup> They become such distressing and painful reactions; In addition, if severe enough, they may interrupt treatment, after evaluation by the radioncologist.

In another approach to this question, the following attention is focused on radiodermatosis: written guidance; use of scale for the evaluation of the radiodermatosis; hygienization of the radiated area without friction and smoothly; use of topical agents such as aloe vera, Cavilon cream or spray; avoid sunlight; direct heat in the irradiated area and extreme temperatures.<sup>25</sup>

It is observed that the care related to the prevention and management of adverse effects of radiotherapy, for example, are inherent to the assistance of nurses given to

cancer patients, since, in the Nursing consultation, actions are performed such as: patient orientation on radiotherapy and care directed to the irradiated site, aiming at self-care; site assessment and identification of toxicity present in irradiated tissues; prescription of appropriate products according to the degree of reaction present on irradiated skin.<sup>25</sup>

It should be noted that the recommendations made in the nurses' consultations take into account the individuality of each patient and the specificity of each treatment, since there is a difference in the levels of radiodermatitis from patient to patient, according to extrinsic and intrinsic factors, and the adoption of concomitant protocols, as already demonstrated in the case of simultaneous chemotherapy, increases the intensity of cutaneous reactions in patients submitted to radiotherapy.<sup>26</sup>

It is reported that the most severe skin reactions occur in white patients, elderly and who use thermoplastic masks during treatment. It is known that these criteria are parameters used in the weekly evaluation of the Nursing consultation in Radiotherapy,<sup>27</sup> in addition to being in accordance with recommendations and / or interventions based on scientific evidence, such as the Score Radiation Therapy Oncology Group (RTOG) for the diagnosis and measurement of radiodermatitis and the Protocol for the Prevention of Radiodermatitis.<sup>27</sup>

However, due to the limitations of the sample used in the study, it is not possible to state that the results described are similar in other radiotherapy services, since each service has its own protocol. It was reflected, in any way, the results obtained the protocol used in a reference center in cancer treatments.

This research is limited by the understanding of the nurses' performance in the work process on the perception of nurses working in only one scenario involving the teletherapy oncology treatment. It is also considered the limited amount of research that specifically deals with the topic as a barrier at the moment of the discussion. In light of the complexity of the topic on the screen, contributions to broaden reflections on the knowledge of the nurse practitioner who works in a collaborative way with other professionals, answering for the effective oncology patient's teletherapy treatment, it is also evident that the nurse's role is indispensable in the integral care of the patients submitted to radiotherapy, since they

work in the Radiotherapy sectors and interact daily with the patients to provide support and information.

## CONCLUSION

It is the interpretation adopted in the study to identify Oncology Nursing care in Radiotherapy as a methodological tool that enabled the construction of knowledge about the role of nurses within a team composed of several professionals involved in the treatment of cancer patients. In this way, essential field research is presented to describe how this process occurs.

It is also possible, through the study, to highlight the specificity of the nurse's role in the work process of radiotherapy, specifically, in teletherapy. The results show that, among the professionals that make up the multidisciplinary team, nurses have a determining role in the care of patients undergoing radiotherapy treatments, especially prevention, minimization and/or treatment of adverse effects resulting from application of treatment, especially cutaneous reactions, in order to provide the well-being of cancer patients. In addition, the interviewed professionals use protocols and pre-established criteria, according to scientific evidence, in patient care, such as the weekly evaluation of the Radiotherapy Nursing consultation based on national and international recommendations.

It is added that patients who receive radiotherapy treatment against cancer can undergo a multitude of therapeutic modalities with duration that can vary from days to months of treatment. Because of the possibility of these therapeutic modalities being used in combination, the complexity in the evaluations performed by the nurse is increased; so there is a need for specific knowledge and skills to accurately assess and act. Thus, they become, in fact, the fundamental nurses to provide the care and to act in the education to the patient in relation to their treatment.

Finally, it is concluded that understanding the teaching of radioncology, mainly focused on patient care, is fundamental and should have a greater emphasis on the academic training of nurses. It is known that radiotherapy is a work area that is in great growth and the labor market lacks professionals in this area of knowledge; therefore, there is, precisely, this need for constant qualification of these professionals.



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