SEVEN publicações acadêmicas
EM PARCERIA COM: IEMS UNIASSELVI

# Characterization of adult neurosurgical oncological patients with brain tumors according to Wanda Horta's theory of basic human needs

**Juarez de Jesus Carmo Junior[1], Sônia Regina de Souza[2].**

**ABSTRACT**
The study estimates that in Brazil there will be 6,110 new cases of central nervous system cancer in men and 5,380 in women between 2023 and 2025. Brain neoplasms significantly impact the quality of life of patients, leading to a condition of physical dependence, even after surgical treatment. The study aims to describe the characteristics of oncological neurosurgical patients, focusing on basic human needs, using data collected from medical records to improve nursing care.

**Keywords:** Brain neoplasms, Nursing Theory, Nursing Care.

## INTRODUCTION

According to estimates of the incidence of brain neoplasms in Brazil, 6,110 new cases of central nervous system cancer in men and 5,380 in women are expected for each year of the 2023-2025 triennium. This value corresponds to an estimated risk of 5.8 new cases per 100 thousand men and 4.85 new cases per 100 thousand women (INCA, 2023).

These pathologies interfere with basic human needs and, even after surgical treatment, usually provide a disabling process that leads to a condition of physical dependence, compromising their activities of daily living, and quality of life (BAUMANN M., LE BIHAN E., CHAU K., CHAU N., 2014).

Thus, the search for understanding how to identify assertive and directed nursing care for patients with brain tumors directed motivation to carry out this study, in an attempt to understand how this care should be applied, through the use of internationally consolidated criteria and standards through a nursing taxonomy.

According to Oliveira, et. al., (2019), the construction of a nursing data collection instrument enhances the documentation of objective and relevant information to nursing evaluation. Therefore, it is salutary for nursing services to build, validate and implement such instruments aiming at their peculiarities, in order to guide and standardize the operationalization of the stages of the nursing process, since the absence of such tools can hinder the implementation of this care methodology.

Since data collection is the first stage of the nursing process and will support the identification of nursing problems from the psychological, biological, social, economic and spiritual perspectives , it is

[1] UNIRIO – Federal University of the State of Rio de Janeiro – RJ
[2] UNIRIO – Federal University of the State of Rio de Janeiro – RJ

essential that this information is as accurate and reliable as possible; otherwise, the whole process may be affected.

This study aimed to describe the characteristics of adult neurosurgical oncology patients according to changes in basic human needs such as psychobiological, psychosocial and psychospiritual related to Wanda Horta's theory.

## MATERIALS AND METHODS

This is a descriptive, exploratory, retrospective study, with documentary analysis of physical and electronic medical records of patients from January to December 2019. The research scenario took place in a hospital specialized in cancer treatment, located in the city of Rio de Janeiro-RJ, classified in tertiary health care of the SUS network, more specifically in the neurosurgery ward, intensive care unit (ICU) and postoperative unit (UPO) because these are places where patients who experience neurosurgery are admitted either in preoperative or preoperative care.  and/or postoperatively.

To survey the profile of the patients, a script was constructed for the collection of data from the patient's medical records, constituting the history focused on this population. The script consists of sociodemographic issues, and data related to basic human needs contemplated by Wanda Horta's theory of basic human needs, being divided into blocks that emerged from biological, psychosocial and spiritual needs, however there was a direction to aspects pertinent to nursing care.

This focused history included sociodemographic and economic data (age, gender, marital status, education, race/color, number of children, place of residence, current occupation) as well as other important data (history of previous diseases, previous treatment, comorbidities, use of medications, lifestyle habits such as smoking and alcoholism, exposure to carcinogens, physical examination data, psychosocial and spiritual data.

The criterion for inclusion of medical records was defined as those referring to patients admitted to the corresponding ward in the period from January to December 2019. The choice of this period is due to the emergence of the pandemic by the new coronavirus, SARS-CoV2, which resulted in the blocking of elective surgeries at that institution, a fact that can generate biases in the evaluation of data related to research.

The selection of patients hospitalized in this period was made through a computerized system for admission and billing of this institution, the Absolut system. All patients who were hospitalized in this period were included for data collection in a focused history, constituting 189 patients, configuring a non-probabilistic sample by convenience. However, with the attempts to search the medical records and consequent losses, we had a total of 134 medical records of patients analyzed.

Regarding the use of data from patient records, it was not necessary to sign the informed consent, however the research was released by the medical archive sector for the collection of these data, as well as the approval of the CEPs with CAAE: 53191721.0.0000.5285, under opinions No. 5,157,297 and No. 5,247,436, respectively.

Data collection from the patients' medical records took place from April to July 2022. These data were stored in a database using computer programs such as Excel for Windows version 2019, and for statistical analysis of frequencies the statistical program R version 4.1.0 was used.

## RESULTS

According to the evaluation of the data collected, the majority of the population treated at the neurosurgical clinic in the period of 2020 was women, making up 64.9%, with whites and browns being the highest frequency, 54.5% and 31.3% respectively. As for religion, 46.3% were Catholics, followed by 39.5% of evangelicals. Regarding marital status, 41.8% were married, and their education level was 34.3% in high school and 30.5% who had incomplete elementary school. The most frequent age group was 60 or older, with 31.6% of the population following from 50 to 59 years old (27.1%).

Table 1 - Distribution of the frequencies of sociodemographic data of adult neurosurgical oncology patients in the perioperative period, 2020.

| Sociodemographic data | **N** | **%** |
|---|---|---|
| Gender | | |
| Female | 87 | 64,9 |
| Male | 47 | 35,1 |
| Race/color | | |
| White | 73 | 54,5 |
| Brown | 42 | 31,3 |
| Black | 17 | 12,7 |
| Yellow/Indigenous | 02 | 1,4 |
| Religion * 2 dice lost | | |
| Catholic | 62 | 46,3 |
| Evangelical | 53 | 39,5 |
| Spiritist | 05 | 3,7 |
| Candomblé/Umbanda | 04 | 4,6 |
| It does not have | 08 | 5,9 |
| Marital status | | |
| Married | 56 | 41,8 |
| Single | 41 | 30,6 |
| Stable Union | 13 | 9,7 |
| Removed/Separated | 13 | 9,7 |
| Widower | 11 | 8,2 |
| Schooling ** 3 data lost | | |
| Illiterate | 07 | 5,3 |
| Incomplete fundamental | 40 | 30,5 |
| Complete Fundamental | 19 | 14,5 |
| Incomplete high school | 08 | 6,1 |
| High School | 45 | 34,3 |

| | | |
|---|---|---|
| Superior | 12 | 9,3 |
| Age [1 lost dice] | | |
| 18 a 29 | 09 | 6,8 |
| 30 a 39 | 19 | 14,2 |
| 40 a 49 | 27 | 20,3 |
| 50 a 59 | 36 | 27,1 |
| 60 or more | 42 | 31,6 |
| Has [19 children lost data] | | |
| Yes | 87 | 75,6 |
| No | 28 | 24,4 |

When analyzing lifestyle habits and exposure to carcinogenic substances, it was identified that 12.5% were smokers and 29.8% were former smokers. The habit of smoking is associated with the development of some neoplasms. Regarding the use of alcoholic beverages, 23.3% of the population used it, and 5.3% consumed some type of illicit drug. Regarding exposure to carcinogenesis-promoting agents, 6.1% were exposed to substances such as passive smoking and asbestos and had previously been treated with radiotherapy.

Table 2 - Distribution of data frequencies on lifestyle habits and exposure to carcinogens of adult neurosurgical cancer patients in the perioperative period, 2020.

| Lifestyle habits, exposure to carcinogens (*) | **N** | **%** |
|---|---|---|
| Smoking | | |
| No | 76 | 56,7 |
| former smoker | 40 | 29,8 |
| Yes | 17 | 12,5 |
| Alcoholic beverage | | |
| No | 91 | 68,4 |
| Yes | 31 | 23,3 |
| Former alcoholic | 11 | 8,3 |
| Drug use | | |
| No | 126 | 94,7 |
| Yes | 4 | 3,0 |
| Former | 3 | 2,3 |
| Exposure to carcinogens | | |
| No | 125 | 93,9 |
| Yes | 8 | 6,1 |

**1 Lost dice*

Regarding the clinical history data of this population, 81.3% had exclusive surgery as the reason for hospitalization and 23.1% had not experienced any previous treatment. However, of the treatments previously applied, radiotherapy, chemotherapy and support for concomitant clinical conditions presented a percentage of 42.7%. Regarding the presence of allergies, 25.4% reported having allergies to medications (ASA, NSAIDs, antibiotics, antipyretics, anticonvulsants, prokinetics), iodine and some foods. Most of the respondents had comorbidities with a percentage of 70.9%, including systemic arterial hypertension (SAH), diabetes mellitus (DM) and heart diseases, in addition to hormonal changes due to the hypofunction of some glands important to organic metabolism.

Table 3 - Distribution of data frequencies on the clinical history of adult neurosurgical cancer patients in the perioperative period, 2020.

| Clinical history | **N** | **%** |
|---|---|---|
| Reason for hospitalization | | |
| Surgery | 109 | 81,3 |
| surgery/QT/RXT | 21 | 15,7 |
| surgery/clinical support | 4 | 3,0 |
| Has previous treatment | | |
| Yes | 103 | 76,9 |
| No | 31 | 23,1 |
| Type of treatment applied | | |
| QT | 2 | 1,9 |
| RXT | 1 | 0,9 |
| QT/RXT | 2 | 1,9 |
| QT/RXT/others | 1 | 0,9 |
| Clinical Support | 26 | 25,2 |
| clinical/QT support | 10 | 9,7 |
| clinical support/RXT | 17 | 16,5 |
| clinical support/QT/RXT | 44 | 42,7 |
| Allergies* | | |
| No | 95 | 70,9 |
| Yes | 34 | 25,4 |
| Don't know | 5 | 3,7 |
| Has comorbidities | | |
| Yes | 95 | 70,9 |
| No | 39 | 29,1 |
| Type of comorbidities | | |
| HAS | 25 | 18,6 |
| DM | 2 | 1,5 |
| Heart | 2 | 1,5 |
| HAS, cardiopatias | 2 | 1,5 |
| HAS, DM | 6 | 4,5 |
| SAH, DM, Heart Diseases, others | 2 | 1,5 |
| HAS, DM, others | 8 | 6,0 |
| HAS, Other | 21 | 15,7 |
| DM, Other | 3 | 2,2 |
| Other | 23 | 17,1 |
| Has no comorbidities | 40 | 29,9 |

**Allergies mentioned: ASA, NSAIDs, antipyretics, antibiotics, prokinetics, food, anticonvulsants, iodine.*

When analyzing data on changes in basic human needs, the level of consciousness was altered in 14.2% of the patients. Regarding motor alterations, 29.2% of these patients had paresias, paresthesias and plegias in the lower limbs and 15.7% in the upper limbs. This percentage signals a greater demand for care for locomotion, activities of daily living such as dressing, eating, promoting self-care.

It was identified that 29.5% had alterations in visual acuity such as diplopia and partial or total amaurosis, 25.5% with alterations in phonation with aphasia in various degrees (dysarthria, dyslalia, dysphonia and complete aphasia), 23.5% with alterations in taste, such as partial or total dysphagia.

Pain was identified in 35.8% of the patients, which reveals an important change in the quality of life of these individuals. Regarding respiratory function, 18.7% required respiratory support with oxygen therapy through tracheostomies, orotracheal intubations, or only using catheters or inhaled masks.

Fatigue was present in 28.4% of the patients. Locomotion was impaired in 24.6%, who were restricted to bed and 44.8% used orthoses to aid in locomotion.

In the evaluation of emotional aspects, more than half of the patients were anxious with a percentage of 54.2%, and when the coping with the disease was analyzed, 19.4% were in the depression phase. These data indicate that this population needs a high demand for nursing care, given the changes in basic biological, emotional and psychosocial human needs.

Table 4 - Distribution of frequencies of data related to the altered basic human needs of adult neurosurgical cancer patients in the perioperative period, 2020.

| Changed human needs | **N** | **%** |
|---|---|---|
| *Biological* | | |
| *Level of consciousness* | | |
| Alert | 115 | 85,8 |
| Drowsy | 13 | 9,8 |
| torporous/comatose | 6 | 4,4 |
| *Types of motor alterations in upper limbs* | | |
| No changes | 107 | 79,8 |
| paresia/paresthesia/plegia | 21 | 15,7 |
| edema/lymphedema | 6 | 4,5 |
| *Types of motor alterations in lower limbs* | | |
| No changes | 92 | 68,6 |
| paresia/paresthesia/plegia | 39 | 29,2 |
| Edema | 3 | 2,2 |
| *Sensory changes* | | |
| visual acuity | 30 | 29,5 |
| Hearing | 13 | 12,7 |
| Olfactory | 02 | 1,9 |
| Tactile | 08 | 7,8 |
| Gustatory | 24 | 23,5 |
| Phonation | 25 | 25,5 |
| *Dor* | | |
| No | 86 | 64,2 |
| Yes | 48 | 35,8 |
| *Ventilatory support* | | |
| No | 109 | 81,3 |
| Yes | 25 | 18,7 |
| *Locomotion* | | |
| No aid | 41 | 30,6 |
| Orthosis aid | 60 | 44,8 |
| Bedridden | 33 | 24,6 |
| *Fatigue* | | |
| No | 96 | 71,6 |
| Yes | 38 | 28,4 |
| *Emotional* | | |
| Anxious | 72 | 54,2 |
| Take it easy | 46 | 34,6 |
| Rough | 13 | 9,7 |
| Sad | 11 | 8,2 |
| tearful/scared | 11 | 8,3 |
| *Coping with the disease* | | |
| Acceptance | 103 | 76,9 |
| Depression | 26 | 19,4 |
| Denial/anger/bargaining | 5 | 3,7 |

## FINAL CONSIDERATIONS

The performance of specific nursing care corroborated by scientific knowledge makes it possible, in a way, to foresee potential complications resulting from the establishment of these types of tumors and the consequences that arise from the progression of the disease, as well as from the treatment that is implemented, facilitating the individual's rehabilitation.

The identification of specific care needs for a patient population favors care based on scientific principles, promoting the implementation of a care plan with assertive interventions directed to each problem identified with these diagnoses, in line with COFEN Resolution No. 358/2009 regarding the development of the NP and the Systematization of Nursing Care.

In this context, the nurse participates in all phases and stages of the care provided, whether in the coordination of the activities of the other members of the nursing team or in collaborative work with the multiprofessional team. Therefore, this professional, who works by performing, developing and implementing a care plan in each of the surgical phases, from the preoperative, intraoperative and postoperative periods, and together with the multidisciplinary team, should act as a facilitator for the understanding and clarification of the entire process to be experienced by the person and his family in the perioperative period (CASTRO et al, 2017).

The development of the assertive nursing process and respecting the real needs of the individual has a positive impact on the improvement of the care provided by the nurse to the oncological neurosurgical patient, a patient who demands specific care of medium and high complexity, and this systematization of nursing care.

## REFERENCES


Baumann, M., Le Bihan, E., Chau, K., & Chau, N. (2014). Associations between quality of life and socioeconomic factors, functional impairments, and dissatisfaction with received information and home-care services among survivors living at home two years after stroke onset. BMC Neurology, 14, 92. https://doi.org/10.1186/1471-2377-14-92. Available at: http://www.ncbi.nlm.nih.gov/pubmed/24773696. Accessed on: March 10, 2022.

Castro, J. M., Ferreira, J. S., Alves, J. M. C., Gomes, F., Lima, F., Felix, G., et al. (2017). Sistematização da assistência de enfermagem ao paciente oncológico: relato de caso. Braz J Surg Clin Res, 19(2), 100-102. Available at: https://www.mastereditora.com.br/periodico/20170706_113357.pdf. Accessed on: February 15, 2021.

Conselho Federal de Enfermagem. (2009). Resolução 358 de 2009. Dispõe sobre a Sistematização da Assistência de Enfermagem e a implementação do Processo de Enfermagem em ambientes, públicos ou privados, em que ocorre o cuidado profissional de Enfermagem, e dá outras providências. Brasília, DF: Conselho Federal de Enfermagem.

Horta, W. A. (1979). Processo de enfermagem. São Paulo: EPC.

Instituto Nacional de Câncer. (2023). Estimativa 2023: incidência de câncer no Brasil. Rio de Janeiro: INCA. Available at: https://www.gov.br/inca/pt-br/assuntos/cancer/numeros/estimativa.

Oliveira, M. R., et al. (2019). Sistematização da assistência de enfermagem: percepção e conhecimento da enfermagem Brasileira. Revista Brasileira de Enfermagem, 72(6). Accessed on: November 29, 2021.