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QUALITY AND SUBJECTIVE SLEEP PATTERN OF HOSPITALIZED CANCER PATIENTS

QUALIDADE E PADRÃO SUBJETIVO DE SONO DE PACIENTES ONCOLÓGICOS HOSPITALIZADOS

CALIDAD Y PATRÓN SUBJETIVO DEL SUEÑO DE PACIENTES CON CÁNCER HOSPITALIZADOS

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ABSTRACT

Objective: To assess the quality and subjective pattern of sleep in hospitalized cancer patients. **Method:** Cross-sectional, observational study with patients admitted to a public hospital. Sociodemographic data, factors that interfere with sleep, quality and subjective pattern of sleep were collected using the Visual Analog Sleep Scale, which evaluates the disturbance domains, effectiveness and sleep supplementation. **Results:** There were 93 patients, 77.4% female, 50.6 ± 15.6 years and 26.4% with cervical cancer. The most affected sleep characteristics were latency quality, sleep depth and total sleep time. Lighting factors (25%), organic disorders (27%), fear and worry (48%) were identified as disturbing sleep in the hospital. **Conclusion:** Hospitalized cancer patients have poor quality and subjective sleep pattern and that fears and concerns are the most interfering factors.

Descriptors: Sleep; Medical Oncology; Hospitalization.

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RESUMO
Objetivo: Avaliar a qualidade e o padrão subjetivo de sono de pacientes oncológicos hospitalizados. **Método:** Estudo transversal, observacional com pacientes internados em hospital público. Foram coletados dados sociodemográficos, fatores que interferem no sono, qualidade e padrão subjetivo do sono por meio da Escala Visual Analógica do Sono que avalia os domínios distúrbio, efetividade e suplementação do sono. **Resultados:** Foram 93 pacientes, 77,4% do sexo feminino, 50,6 ± 15,6 anos e 26,4% com câncer de colo de útero. As características do sono mais afetadas foram a qualidade da latência, profundidade do sono e tempo total de sono. Os fatores iluminação (25%), distúrbios orgânicos (27%), medo e preocupação (48%) foram apontados como perturbadores do sono no hospital. **Conclusão:** Pacientes oncológicos hospitalizados têm qualidade e padrão subjetivo de sono ruim e os medos e as preocupações são os fatores que mais interferem.
Descritores: Sono; Oncologia; Hospitalização.

RESUMEN
Objetivo: Evaluar la calidad y patrón subjetivo del sueño en pacientes oncológicos hospitalizados. **Método:** Estudio observacional transversal con pacientes ingresados en un hospital público. Los datos sociodemográficos, los factores que interfieren en el sueño, la calidad y el patrón subjetivo del sueño fueron recolectados mediante la Escala Visual Analógica del Sueño, que evalúa los dominios perturbación del sueño, efectividad y suplementación. **Resultados:** Hubo 93 pacientes, 77,4% mujeres, 50,6 ± 15,6 años y 26,4% con cáncer de cuello uterino. Las características del sueño más afectadas fueron la calidad de la latencia, la profundidad del sueño y el tiempo total de sueño. Factores de iluminación (25%), trastornos orgánicos (27%), miedo y preocupación (48%) fueron identificados como perturbadores del sueño en el hospital. **Conclusión:** Los pacientes con cáncer hospitalizados tienen una mala calidad y un patrón de sueño subjetivo y los miedos y preocupaciones son los factores que más interfieren.
Descriptores: Sueño; Oncología Médica; Hospitalización.

INTRODUCTION

Oncological disease is a serious problem, being increasingly prevalent, being today one of the main causes of death worldwide.[1-2] The symptoms experienced by cancer patients are vast, caused either by the disease itself or by the treatments used, such as sleep disorders.[3]

Sleep is a process with specific physiological and behavioral manifestations, with variations in biological parameters, accompanied by changes in brain electrical activity. Sleep is part of the wake-sleep cycle, being a circadian biological rhythm influenced by endogenous, social and environmental factors, in addition to representing a reversible state of disconnection of perception from the environment with modification of the level of consciousness and responsiveness to internal and external stimuli.[4-6]

The importance of sleep is observed when the negative effects caused by its deprivation are noted, such as autonomic dysfunction, reduced vigilance, fatigue,

impacting quality of life. Sleep loss is today a public health problem, culminating in the risk of the emergence or worsening of diseases.[7-9] In cancer, sleep disorders can occur at different periods of the disease from diagnosis, during and after treatment and in terminal phase.[10]

In this context, the question arises: what is the quality of sleep of hospitalized cancer patients and which intrinsic and extrinsic factors related to hospitalization affect sleep quality? Therefore, the present study aims to evaluate the quality and subjective pattern of sleep in hospitalized cancer patients. Specific objectives were to sociodemographically and clinically characterize hospitalized cancer patients and verify the factors that interfere with patients' sleep. The results of this study contribute with information that allows the planning of strategies to improve hospital interventions.

METHODS

The study was cross-sectional, observational and analytical with quantitative data collection. The study was carried out in a public reference hospital, located in the city of Teresina, Piauí, Brazil. The research sample consisted of 93 patients diagnosed with cancer admitted to the wards from April/2019 to July/2019.

The inclusion criteria for participation in the study were: patients diagnosed with cancer, who agreed to participate in the research and signed the Informed Consent Form (TCLE); hospitalized for a minimum of 48 hours and a maximum of 5 days, to minimize the influence of the acute illness on sleep, according to the literature.[11] In addition, they should present stable clinical conditions, preserved orientation regarding time, space and self; and have the ability to communicate verbally. The exclusion criteria for participating in the study were: recent postoperative period (up to 24 hours); use of prescribed or self-medication to treat sleep disorders; person with severe hearing impairment or severe visual impairment with insensitivity to light; and being a neurological (clinical and surgical) and psychiatric patient.

All participants were informed about the procedures and reliability of the research in which they would be included and were only included in the study after reading and signing the TCLE, which guaranteed them total identification confidentiality, as well as clarification of the study.

Data collection was carried out using two instruments. The first was a form prepared with data on age, gender, origin, profession, education, diagnosis, stage of the disease, presence or absence of metastasis, whether or not they underwent tumor

resection surgery and whether they smoked and/or drank alcohol. Factors that could interfere with sleep quality were also evaluated, such as: excessive lighting; uncomfortable bed; ward routine; receiving care; noise in the ward; organic disorders (pain, diarrhea, nausea, among others); care for others in the infirmary; fear and worry and room temperature.[11]

The second instrument was the Brazilian version of the Visual Analog Sleep Scales (VAS), translated as Escala Visual Analógica de Sono, developed to evaluate the subjective sleep of hospitalized individuals.[12] This scale consists of 16 items (15 self-report items and one item that results from the sum of the first two). Each item consists of statements with opposite meanings at the ends of a straight line of 100 millimeters (mm), divided every five mm. One should draw a line perpendicular to the straight line, in the division that one thinks best reflects the situation. It covers three scales: disorder (7 questions and possible range from 0 to 700, questions 1, 6, 7, 8, 9, 10 and 11); effectiveness (5 questions, with a maximum of 600, as one of the questions is the result of the sum of the two others, questions 2, 12, 14, 15 and sum of items 1 and 2) and sleep supplementation (4 questions and possible range from 0 to 400, questions 3, 4, 5 and 13). The values of each scale must be considered separately for the analysis, that is, there is no value for the three combined. The higher the value obtained on the disturbance and supplementation scales, the worse the sleep quality and, on the effectiveness scale, a higher score indicates better quality sleep.[12]

The data were organized in a spreadsheet in Microsoft Excel version 8.0 and later exported to the Statistical Package for the Social Sciences version 22.0, with variables described as percentages, mean, median and standard deviation. To analyze continuous variables, data normality was checked using the Kolmogorov-Smirnov test. Comparative analyzes were performed using the Mann-Whitney and Kruskal-Wallis tests. A significance level of 5% ($p < 0.05$) was considered.

The study began after authorization from the HU-UFPI Research Ethics Committee under opinion no. 3,197,578. This project complies with the standards of resolution 466/12 of the National Health Council – CNS involving research on human beings.

RESULTS

There were 93 patients participating in the research, 77.4% female, with a mean age of 50.6 ± 15.6 years, 57.0% from the interior of Piauí, 40.9% farmers and 47.3% reported 1st in/complete degree, data

described in Table 1. Regarding diagnosis, it was found that 26.4% and 19.4% were diagnosed with cervical and liver cancer, respectively.

Table 1 -Sociodemographic characteristics of hospitalized cancer patients. Teresina, Piauí, Brazil, 2019.

Variables	n	%
Gender		
Male	21	22.6
Female	72	77.4
Education		
Illiteracy	18	19.3
Elementary School	44	47.3
High school	22	23.7
Higher	09	9.7
Origin		
Teresina	34	36.6
Interior of Piauí	53	57.0
Another state	06	6.4

Source: Research data.

It was observed in Table 2 that, regarding risk factors, 39.8% were smokers and 30.1% were alcoholics. Furthermore, 18.3% were in the preoperative period and 29% in the postoperative, with a total of 47.3% being referred for surgery, the other 52.7% either discovered it early and had not yet planned an action course (scheduled surgery) or were already at an advanced stage of the disease and had a poor prognosis. Regarding staging, the majority of patients were in stage 1 with 39.8% showing that they discovered the disease early. While 28% were already in stage 4, that is, metastatic cancer.

Table 2 -Clinical characteristics of hospitalized cancer patients. Teresina, Piauí, Brazil, 2019.

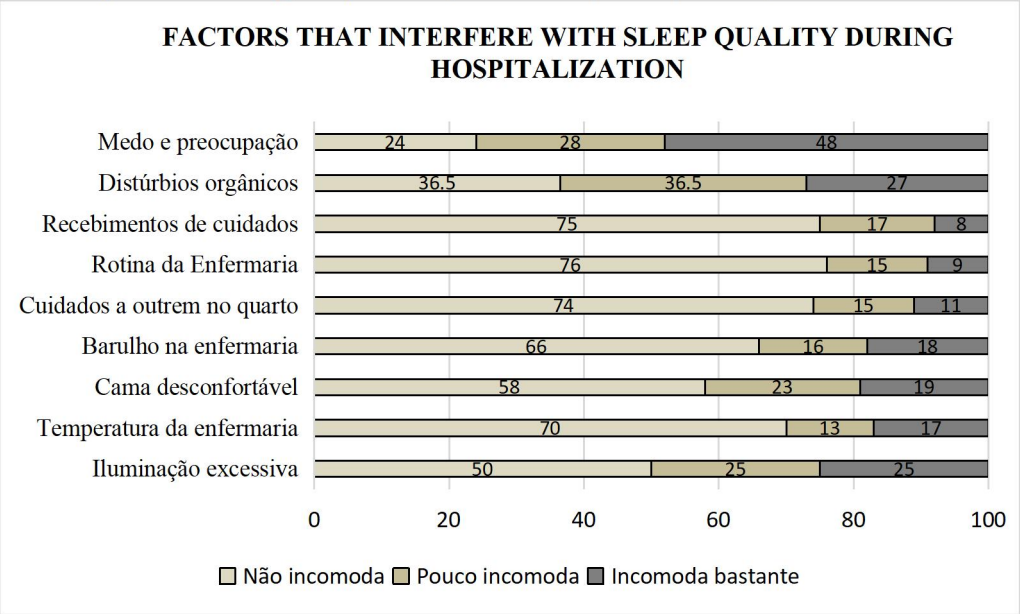
Variables	N	%
Risk factors		
Smoking	37	39.8
Alcoholism	28	30.1

No risk factors	28	30.1
Staging		
1	37	39.8
2	23	24.7
3	07	7.5
4	26	28.0
Metastasis		
Yes	26	28.0
No	67	72.0
Surgical Planning		
Preoperative	17	18.3
Postoperative	27	29.0
No programming	49	52.7

Source: Research data.

In the analysis of factors that interfered with the quality of sleep in a hospital environment, fears and concerns (48%) were highlighted, as well as organic disorders (27%) and excessive light (25%), as factors that disturbed the sleep of patients. cancer patients as shown in Graph 1.

Graphic 1 -Characterization in percentage of potential factors that interfere with the quality of sleep of cancer patients during hospital stay. Teresina, Piauí, Brazil, 2019.



Source: Research data.

In the analysis of sleep quality components investigated using the Visual Analogue Sleep Scale, it was observed in the Disorder domain taht it may vary from 0 to 700, an average of 360.5 ± 215.3. In the Effectiveness domain with a possible variation from 0 to 600, in the data analysis it presented 359.9 ± 143.4, that is, more than half of the maximum possible. In the Sleep Supplementation domain, the average found was below half of the possible variation (0 to 400), that is, 137.3 ± 90.0 as shown in Table 3. In the comparative analysis between genders, it was observed that men had a higher sleep supplementation score than women (p = 0.022).

Analyzing in detail the results of the items that deserve to be highlighted, individually, from the VAS, there are the items that make up the disorder domain as items 7 (depth of sleep) and 10 (quality of latency), they considered they had a light sleep (82.2 ± 34.4) and difficulty falling asleep (54.7 ± 40.5), and item 2 (total time sleeping) of the effectiveness domain, which demonstrates the duration of night sleep (56.3± 30.7). A difference was observed in the effectiveness domain scores between the pre-, postoperative and non-surgery groups, with the preoperative group revealing a higher effectiveness score than the others (p = 0.011). There were no differences in the scores of the three domains when comparing the staging groups, and when comparing the groups with or without metastasis. The means of the domains and the characterization of their items are described in Table 3.

Table 3 -Descriptive analysis of the Visual Analogue Sleep Scale for hospitalized cancer patients. Teresina, Piauí, Brazil, 2019.

Scale/characteristics	Mean ± SD	Max	Min
Disturbance Scale	**360.5 ± 215.3**	**700**	**0**
Fragmentation characteristics			
Time awake after sleep onset (1)	44.3 ± 36.0	100	0
Sleep depth (7)	82.2 ± 34.4	100	0
Quality of the disorder (8)	40.5 ± 41.9	100	0
Awakenings during sleep (9)	46.7 ± 38.8	100	0
Movements during sleep (11)	44.8 ± 41.6	100	0
Latency characteristics			
Sleep latency (6)	47.2 ± 34.7	100	0
Latency quality (10)	54.7 ± 40.5	100	0
Sleep Supplement Scale	**137.3 ± 90.0**	**400**	**0**
Sleep time during the day (3)	33.8 ± 26.7	100	0
Morning naps (4)	33.8 ± 27.8	100	0
Afternoon naps (5)	33.9 ± 27.8	100	0
Time to get up after waking up (13)	35.9 ± 37.4	100	0
Effectiveness Scale	**359.9 ± 143.4**	**540**	**100**
Quality features			
Rest after waking up (12)	72.2 ± 37.6	100	0
Subjective sleep quality (14)	64.9 ± 43.0	100	0
Assessment of sleep sufficiency (15)	66.0 ± 42.7	100	0
Duration characteristics			
Total time sleeping (2)	56.3 ± 30.7	100	0
Total sleep period (16)	100.6 ± 21.1	160	10

Source: Research data.

DISCUSSION

In this study, there was a predominance of female cancer patients, from the interior of the state, with a low level of education and with a higher prevalence of cervical cancer. A significant frequency of patients with stage 1 cancer was observed. The factors that most interfered with patients' sleep were fears and worries, organic disorders and excessive light. The patients presented important changes in their sleep in terms of latency quality, sleep depth and total sleep time.

As previously reported, there was a predominance of female patients with cervical cancer in the present study. However, the literature shows that both genders are affected in almost the same proportion.[13,14] The most reported types of cancer were also not those most prevalent in the literature; however, the divergence lies in the type of service offered in the hospital unit. The main cancers treated at the aforementioned hospital at the time of the study were: uterus, liver, ovary, lung, stomach, intestine, pancreas, breast, prostate and bone.

Another relevant finding was the low level of education, which can limit access to information, due to impaired reading, writing and speaking skills, as well as understanding the complex mechanisms of the disease, treatment and prognosis. The literature indicates that more educated patients can act to minimize the physical and psychological impact of the disease and treatment on sleep quality.[15]

In relation to the majority of cancer patients whose occupation is agriculture and coming from the interior of the state, the importance of evaluating occupational and environmental factors in the etiology of cancer stands out.[14] Furthermore, the distance from home, the absence of family members nearby, the distance from the usual work routine and concerns about the family's financial support can interfere with patients' well-being and sleep. It is noteworthy that the high frequency of patients from cities in the interior of the state is due to the concentration of health services in the capital.

Regarding the characteristics of the cancer, the findings on staging corroborate the literature[16], with the majority in stage 1, showing that they discovered the disease early. Staging aims to group patients according to the anatomical extent of the disease. It is noteworthy that this standardization is important in therapeutic planning, as a support for prognosis and evaluation of results. It is expected that patients with more advanced staging will consequently have a worse prognosis and greater physical and cognitive impairments. Therefore, patients with stage 4 are individuals who already have serious

clinical repercussions such as metastases in other parts of the body.[16,17] In this study, no differences in VAS scores were observed between staging profiles.

Regarding aspects related to patients' sleep, in this research, an important frequency was found for fears and worries, organic disorders and excessive light as factors that disturb the sleep of cancer patients. Especially in cancer patients, worries, anxiety and depression are common psychological responses to diagnosis, treatment, hospitalization and are related to insomnia.[18] In addition to psychological issues, cancer patients also face some organic disorders such as pain, fatigue, nausea and dyspnea that can affect the quality of sleep.[18-20]

When analyzing the sleep pattern using the VAS instrument, findings were observed that indicate greater sleep impairment when compared to other profiles of hospitalized patients.[21] Other studies with outpatients recently diagnosed with cancer report a 60% prevalence of poor sleep quality[15] and in research with hospitalized patients there was a 64% frequency of poor sleep.[20] In the present study, it was not possible to determine the frequency of sleep disorders due to the limitation of the instrument as there was no cut-off score. However, it was identified that the quality of latency, depth of sleep and total sleep time were the characteristics that most affected had a negative impact on the VAS score.

In the study by Nunes (2019)[22] with cancer patients undergoing outpatient chemotherapy treatment, better results from supplementation and sleep disorders were found when compared to hospitalized patients in the present study, probably due to the fact that the former were not hospitalized, as they were outpatients and slept in their homes after being released from chemotherapy, and during the time they were able to sleep, they did not have many interruptions, but it took a while for them to fall asleep. This result corresponds to the study in question, since the quality of latency shows that inpatients also had difficulty initiating sleep, in addition to fears and worries, organic disorders and excessive light, which stood out as the biggest factors disturbing sleep and which they therefore considered to be light sleepers.

It is noteworthy that the patients in the present study were mostly stage 1 and had not yet started chemotherapy sessions, and that, therefore, they were more effective in sleeping compared to outpatients, of whom 63.3% were in stage 3 and undergoing chemotherapy.[22] Studies report the effects of chemotherapy and radiotherapy on sleep quality, which can be explained by adverse effects of the drugs used in the sessions,

such as nausea, vomiting, numbness and anxiety.[15,19,23]

In general, hospitals tend to be environments where obtaining good quality sleep is a challenge. Sleep in the hospital may not be restful or restorative and the reasons for this may have a multifactorial etiology, including psychological stress, noise, medications, light, frequent nighttime interventions by the multidisciplinary team, collection of laboratory tests, pain, among others.[24] Changes in sleep patterns can affect hospitalized patients due to the stress caused by the hospitalization process, which can be a potentially traumatic experience that takes the individual away from their daily routine and leads to a confrontation with pain and physical limitations, in addition to undesirable feelings.[24]

In addition to the challenges of obtaining good quality sleep in the hospital environment, it is highlighted that the loss of sleep in cancer patients can have an impact on the severity of symptoms such as pain, nausea, anxiety, depressive symptoms and fatigue[19], which in turn, impact in sleep quality. It is therefore imperative that sleep disorders are investigated by clinical oncologists and a multi-professional team in order to incorporate sleep improvement strategies into therapy. It is also important that hospitals take care of their inpatient environments and care routines to encourage more adequate sleep.

The limitation of this study was that the research was carried out in just one hospital; however, the institution belongs to a network of university hospitals with similar management and routines. There was also a lack of investigation of frequent symptoms in cancer patients to carry out additional analyzes. Furthermore, no studies were found that involved hospitalized cancer patients and that used the VAS scale to make comparisons, and the instrument used does not present a cutoff score that made other analyzes impossible. However, the findings of this study will allow future studies to use it as reference. Additionally, it is important to highlight that, due to the cross-sectional design, it is not possible to make inferences about causality in this study.

CONCLUSIONS

The present study addressed a health problem that is part of the lives of many patients, but is still little addressed by health professionals in their routines and care. The findings showed important changes in the sleep of cancer patients in the domains of disorder, supplementation and effectiveness, with emphasis on the characteristics of latency quality, sleep depth and total sleep time. Furthermore, factors such as lighting,

organic disturbances, fear and worry were identified as disturbing the sleep in hospital.

The study had limitations such as the impossibility of inferring causality and being carried out in just one hospital. Therefore, it is suggested that other studies be carried out on the topic that involve patient follow-up and include more hospitals. Furthermore, it is important that the clinical staff and multidisciplinary team include in their routines assessment and interventions that promote the improvement of sleep quality in cancer patients.

REFERENCES

1. International Agency for Research on Cance. World Health Organization. World cancer report: cancer research for cancer prevention [Internet]. Lyon, France: IARC Publications; 2020 [citado em 26 dez 2022]. Disponível em: https://publications.iarc.fr/Non-Series-Publications/World-Cancer-Reports/World-Cancer-Report-Cancer-Research-For-Cancer-Prevention-2020
2. Instituto Nacional de Câncer José Alencar Gomes da Silva. Estimativa 2020: incidência de câncer no Brasil [Internet]. Rio de Janeiro, RJ: INCA; 2019 [citado em 26 dez 2022]. 120 p. Disponível em: https://www.inca.gov.br/sites/ufu.sti.inca.local/files/media/document/estimativa-2020-incidencia-de-cancer-no-brasil.pdf
3. Lopes CPVC. Fadiga no doente oncológico [Internet]. [Tese]. Porto, PT: Universidade do Porto, Instituto de Ciências Biomédicas Abel Salazar; 2016 [citado em 4 set 2023]. Disponível em: https://repositorio-aberto.up.pt/bitstream/10216/86392/2/166254.pdf
4. Gomes MM, Quinhones MS, Engelhardt E. Neurofisiologia do sono e aspectos farmacoterapêuticos dos seus transtornos. Rev Bras Neurol. [Internet]. 2010 [citado em 28 dez 2022]; 46(1):5-15. Disponível em: http://files.bvs.br/upload/S/0101-8469/2010/v46n1/a003.pdf
5. Alóe F, Azevedo AP, Hasan R. Mecanismos do ciclo sono-vigília [Internet]. Rev Bras Psiquiatr. [Internet]. 2005 [citado em 28 dez 2022]; 27(Suppl 1):33-39. Disponível em: https://www.scielo.br/j/rbp/a/B7HS9XTyWBpjhWsfBL6JTqn/abstract/?lang=pt
6. Hirshkowitz M, Whiton K, Albert SM, Alessi C, Bruni O, DonCarlos L, et al. National Sleep Foundation's sleep time duration recommendations: methodology and results summary. Sleep Health [Internet]. 2015 [citado em 28 dez 2022]; 1(1):40-43. Disponível em: https://www.sciencedirect.com/science/article/abs/pii/S2352721815000157?via%3Dihub
7. Glos M, Fietze I, Blau A, Baumann G, Penzel T. Cardiac autonomic modulation and sleepiness: physiological consequences of sleep deprivation due to 40 h of prolonged wakefulness. Physiol Behav. [Internet]. 2014 [citado em 28 dez 2022]; 125:45-53. Disponível em: https://www.sciencedirect.com/science/article/abs/pii/S0031938413004083?via%3Dihub
8. Crispim CA, Zalcman I, Dáttilo M, Padilha HG, Tufik S, Mello MT. Relação entre sono e obesidade: uma revisão da literatura. Arq Bras Endocrinol Metab. [Internet]. 2007 [citado em 28 dez 2022]; 51(7):1041-1049. Disponível em: https://www.scielo.br/j/abem/a/GQ8CpsS5gdGW5yzrRTHz8Yt/?format=pdf&lang=pt
9. Straif K, Baan R, Grosse Y, Secretan B, El Ghissassi F, Bouvard V, et al. Carcinogenicity of shift-work, painting,

and fire- fighting. Lancet Oncol. [Internet]. 2007 [citado em 28 dez 2022]; 8(12):1065-1066. Disponível em: https://pubmed.ncbi.nlm.nih.gov/19271347/10.

10. Rafihi-Ferreira ER, Soares MRZ. Insônia em pacientes com câncer de mama. Estud Psicol. (Campinas) [Internet]. 2012 [citado em 28 dez 2022]; 29(4):597-607. Disponível em: https://www.scielo.br/j/estpsi/a/ryNgb3yCBDY7NkWyMjtFkfL/?format=pdf&lang=pt
11. Costa SV, Ceolim MF. Fatores que interferem na qualidade do sono de pacientes internados. Rev Esc Enferm USP. [Internet]. 2013 [citado em 28 dez 2022]; 47(1):46-52. Disponível em: https://www.scielo.br/j/reeusp/a/WpQ7ksskBtczmRczs8HHsWB/?format=pdf&lang=pt
12. Bergamasco EC, Cruz DALM. Adaptação das visual analog sleep scales para a língua portuguesa. Rev Latino-Am Enferm. [Internet]. 2007 [citado em 28 dez 2022]; 15(5). Disponível em: https://www.scielo.br/j/rlae/a/67fqF93nhqCmsHfSV3GDpVw/?format=pdf&lang=pt
13. Monteiro NT, Ceolim MF. Qualidade do sono de idosos no domicílio e na hospitalização. Texto & Contexto-Enferm. [Internet]. 2014 [citação em 28 dez 2022]; 23(2):356-364. Disponível em: https://www.scielo.br/j/tce/a/fyK363cK9vYswKYKhDrQ8SN/?format=pdf&lang=pt
14. Teixeira AKS, Vasconcelos JLA. Perfil histopatológico de pacientes com diagnóstico de tumores malignos assistidos em um hospital de referência do Agreste Pernambucano. J Bras Patol Med Lab. [Internet]. 2019 [citado em 28 dez 2022]; 55(1):87-97. Disponível em: https://www.scielo.br/j/jbpml/a/xpsGXN9CsLRNyznggJgbxvC/?format=pdf&lang=pt
15. Fontes F, Pereira S, Costa AR, Gonçalves M, Lunet N. The impact of breast cancer treatments on sleep quality 1 year after cancer diagnosis. Support Care Cancer [Internet]. 2017 [citado em 02 jul 2023]; 25(11):3529-3536. Disponível em: https://link.springer.com/article/10.1007/s00520-017-3777-6
16. Santos MO, Gusmão BMT, Albuquerque ERN, Aureliano EMR, Oliveira RC, Dias CA. Perfil nutricional e epidemiológico de pacientes oncológicos atendidos no ambulatório de um hospital universitário. Gep News [Internet]. 2018 [citado em 28 dez 2022]; 5(2):24-27. Disponível em: https://www.seer.ufal.br/index.php/gepnews/article/view/6405/4468
17. Bernabé RLS. Análise do perfil de expressão global de miRNA em carcinomas mamários e linfonodos metastáticos de cadelas[Internet]. [Tese]. São Paulo: Universidade Estadual Paulista, Faculdade de Ciências Agrárias e Veterinárias; 2018 [citado em 4 set 2023]. Disponível em: https://repositorio.unesp.br/handle/11449/152981
18. National Cancer Institute. Sleep Disorders (PDQ®)–Health Professional Version [Internet]. Bethesda, Maryland: National Cancer Institute; 2023 [citado em 02 jul 2023]. Disponível em: https://www.cancer.gov/about-cancer/treatment/side-effects/sleep-disorders-hp-pdq
19. Grayson S, Sereika S, Harpel C, Diego E, Steiman JG, McAuliffe PF, Wesmiller S. Factors associated with sleep disturbances in women undergoing treatment for early- stage breast câncer. Support Care Cancer [Internet]. 2022 [citado em 02 jul 2023]; 30:157-166. Disponível em: https://link.springer.com/content/pdf/10.1007/s00520-021-06373-9.pdf?pdf=button
20. Al-Habsi Z, Al-Noumani H, Al-Hashmi I. Determinants of health- related quality of life among Omanis hospitalized

patients with cancer: a cross- sectional study. Qual Life Res. [Internet]. 2022 [citado em 02 jul 2023]; 31(7):2061-2070. Disponível em: https://link.springer.com/article/10.1007/s11136-021-03061-3

21. Lima RO, Landim MBP, Ferreira LGF, Pinto JGM, Moura NRV, Barbosa MFL. Subjective sleep pattern in hospitalized patients. Sleep Sci. [Internet]. 2022 [citado em 28 dez 2022]; 15(N Spec 1):120-127. Disponível em: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8889974/pdf/ssci-15-spe1-0120.pdf
22. Nunes NAH, Ceolim MF. Qualidade do sono e cluster de sintomas em pacientes com câncer em tratamento quimioterápico. Cogitare Enferm. [Internet]. 2019 [citado em 4 set 2023]. Disponível em: https://revistas.ufpr.br/cogitare/article/view/58046/pdf
23. Costa AR, Fontes F, Pereira S, Gonçalves M, Azevedo A, Lunet N. Impact of breast cancer treatments on sleep disturbances: a systematic review. Breast [Internet]. 2014 [citado em 02 jul 2023]; 23(6):697-709. Disponível em: https://linkinghub.elsevier.com/retrieve/pii/S0960-9776(14)00168-4
24. Pascoal JFC, Marques RMD, Ribeiro PSV. Fatores que influenciam a qualidade do sono na pessoa em unidade de cuidados intensivos. CuidArte Enferm. [Internet]. 2016 [citado em 28 dez 2022]. 10(2):195-200. Disponível em: http://www.webfipa.net/facfipa/ner/sumarios/cuidarte/2016v2/195-200.pdf

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