

ORIGINAL ARTICLE

QUALITY OF SLEEP AND SYMPTOM CLUSTER IN CANCER PATIENTS UNDERGOING CHEMOTHERAPY TREATMENT*

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ABSTRACT

Objective: to analyze the formation of symptom clusters in cancer patients.

Method: Longitudinal study carried out from January to June 2016. Twenty-seven patients were recruited from a public chemotherapy outpatient clinic of a general hospital in Vale do Paraíba Paulista. Data collection was performed through interviews, with the use of the MD Anderson Symptom Inventory, the Pittsburgh Sleep Quality Index and the Visual Analog Sleep Scale. Data were submitted to descriptive and inferential statistical analysis.

Results: Three symptom clusters were identified over time: organic and functional symptoms; emotional symptoms and sleep; and gastrointestinal symptoms.

Conclusion: Besides contributing to improve knowledge of symptom clusters in individuals with cancer undergoing outpatient chemotherapy treatment, this study provided insight on how these symptoms behaved during the first four chemotherapy sessions. Therefore, it can be useful in interventions aimed to prevent these symptoms.

DESCRIPTORS: Nursing; Sleep; Neoplasias; Outpatient Care; Oncological nursing; Signs and symptoms.

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QUALIDADE DO SONO E CLUSTER DE SINTOMAS EM PACIENTES COM CÂNCER EM TRATAMENTO QUIMIOTERÁPICO

RESUMO

Objetivo: analisar a formação dos clusters de sintomas em pacientes oncológicos.

Método: estudo longitudinal, de janeiro a junho de 2016. Foram recrutados 127 pacientes de um ambulatório público de quimioterapia de um hospital geral do Vale do Paraíba Paulista. A coleta de dados foi realizada por meio de entrevista e, para isto, foram utilizados o MD Anderson Symptom Inventory, o Índice de Qualidade do Sono de Pittsburgh e a Escala Visual Análoga de Sono. Os dados foram submetidos a análise estatística descritiva e inferencial.

Resultados: três clusters de sintomas foram identificados ao longo do tempo: sintomas orgânicos e funcionais; emocionais e sono; e gastrointestinais.

Conclusão: Este estudo, além de ter subsidiado o conhecimento quanto aos clusters de sintomas em pacientes com câncer em tratamento quimioterápico ambulatorial, permitiu conhecer como esses sintomas se comportam durante as quatro primeiras sessões de quimioterapia. Dessa forma, subsidiará intervenções preventivas aos sintomas.

DESCRITORES: *Enfermagem; Sono; Neoplasias; Assistência Ambulatorial; Enfermagem oncológica; Sinais e sintomas.*

CUALIDAD DEL SUEÑO Y GRUPO DE SÍNTOMAS EN PACIENTES CON CÁNCER EN TRATAMIENTO DE QUIMIOTERAPIA

RESUMEN

Objetivo: analizar la formación de los grupos de síntomas en pacientes oncológicos.

Método: estudio longitudinal, que se realizó de enero a junio de 2016, en lo cual se analizaron 127 pacientes de un ambulatorio público de quimioterapia en un hospital general del Vale do Paraíba Paulista. La obtención de datos se realizó por medio de entrevista y, para eso, se utilizaron el MD Anderson Symptom Inventory, el Índice de Calidad del Sueño de Pittsburgh y la Escala Visual Análoga de Sueño. Se sometieron los datos al análisis estadístico descriptivo e inferencial.

Resultados: se identificaron tres grupos de síntomas a lo largo del tiempo: síntomas orgánicos y funcionales; emocionales y sueño; y gastrointestinales.

Conclusión: este estudio, además de subsidiar el conocimiento acerca de los grupos de síntomas en pacientes con cáncer en tratamiento de quimioterapia en ambulatorio, posibilitó conocer como esos síntomas actúan durante las cuatro primeras sesiones de quimioterapia. Así, podrá subsidiar intervenciones preventivas a los síntomas.

DESCRIPTORES: *Enfermería; Sueño; Neoplasias; Asistencia de ambulatorio; Enfermería oncológica; Señales y síntomas.*

INTRODUCTION

According to estimates of the World Health Organization, by the year 2030, there will be 27 million new cases worldwide, with 17 million deaths from the disease and 75 million people living with cancer. It is estimated that in the 2018-2019 biennium there will be 600,000 new cases of cancer in Brazil ⁽¹⁾.

Since the onset of multiple symptoms makes it difficult to ensure accurate patient assessment, diagnosis and treatment of cancer, the National Institute of Nursing Research has emphasized the importance of understanding the mechanism of symptoms to improve clinical management ⁽¹⁾.

The Theory of Unpleasant Symptoms⁽²⁾, developed in 1995, updated in 1997 and revised in 2000, attempts to understand the onset of symptoms in cancer patients. It proposes that the presence of one or multiple symptoms could influence the intensity, duration, perceived suffering, quality and presence of other symptoms. It also suggests that symptoms may arise in isolation, but also in the form of a cluster,⁽³⁾ which is understood as multiple symptoms that are related and are influenced by physiological, psychological and situational factors that determine the occurrence, intensity, duration, level of distress and quality of the symptoms.

Studies aimed to improve the cluster of sleep, pain and fatigue symptoms are needed, since sleep is a predictor of morbidity and mortality ⁽⁴⁾. Sleep problems are less serious in cancer patients during hospitalization than at home, and the possible factors that contribute to the worsening of sleep at home should be investigated ⁽⁵⁾.

Despite their relevance to clinical recovery, sleep problems in cancer patients are underdiagnosed, and the cases detected are often inappropriately treated. Thus, poor sleep may persist for up to five years after cancer treatment ⁽⁶⁾.

The effects of poor sleep are not yet fully understood, but it is known that it has a negative impact on the human body. Increased depression, low self-esteem and pain are reported as factors associated with poor sleep, ⁽⁷⁾ in addition to psychological stress and the increase of interleukin-6- α in the body ⁽⁸⁾. Sleep is a matter of greater concern in cancer patients, as these individuals experience physical impairment and are emotionally distressed ⁽⁶⁾.

When the mechanism of symptom grouping is known, ⁽⁴⁾ preventive measures that aimed to improve patients' quality of life can be implemented. There are few longitudinal studies on the evolution of symptom clusters. Therefore, the present study aimed to analyze the formation of symptom clusters in cancer patients and its relationship with the variability of sleep disturbance, effectiveness and supplementation during four sessions of outpatient antineoplastic chemotherapy.

METHOD

Longitudinal observational and analytical study. It was performed in a public chemotherapy outpatient clinic, outsourced, which provides anticancer therapy exclusively under the Unified Health System (SUS) and is located in a general hospital in a city in Vale do Paraíba Paulista.

In total, 127 individuals undergoing outpatient chemotherapy in minimum 9 week cycles were recruited, and seven of them died. The inclusion criteria were individuals aged 18 years or older; with functional capacity, who obtained a performance status of 60% or greater in the Karnofsky Performance Scale (KPS); in the first cycle of antineoplastic chemotherapy treatment; cycles of 21-28 days of chemotherapy treatment. Exclusion criteria were individuals with emotional distress that prevents them from being interviewed

(e.g. crying, apathy or restlessness,); who could not be contacted by telephone when unable to attend the chemotherapy session, discontinuation of chemotherapy sessions for any reason (e.g. death); reduction of the KPS index to less than 60% during follow-up; individuals who missed more than one chemotherapy session and could not be contacted by phone on such occasions.

Data collection was performed by the researcher in the first semester of 2016 during four chemotherapy sequential sessions, at four different moments called T0 (first chemotherapy session), T1 (second session), T2 (third session) and T3 (fourth session).. The choice of the four sessions was planned considering the feasibility of the study, since discontinuing treatment due to worsening of the health status or death is frequent.

The following four instruments were used for data collection:

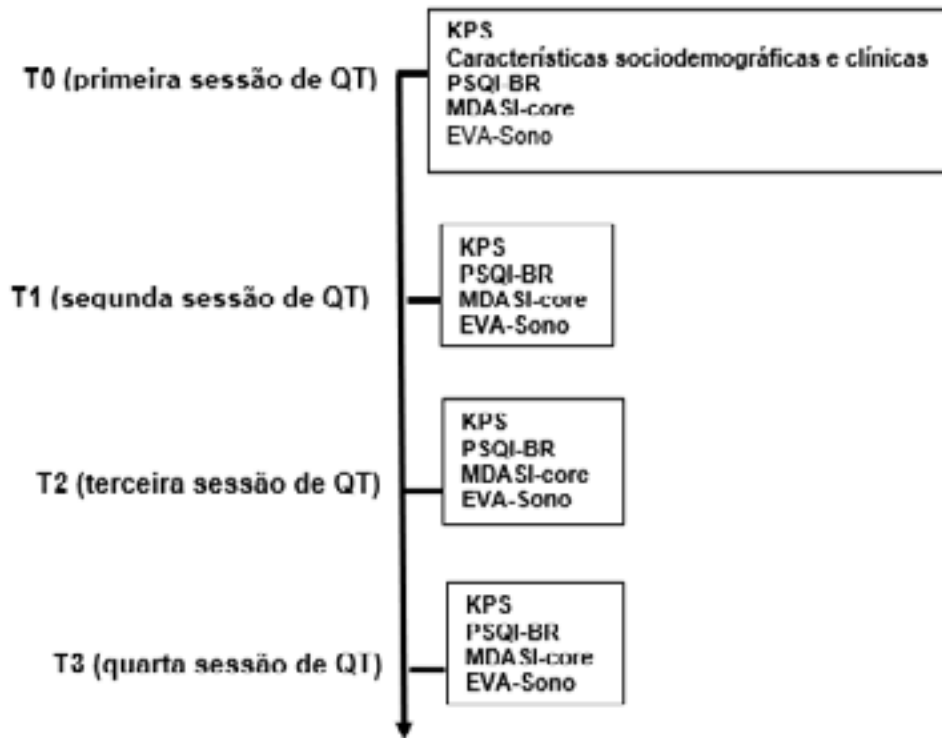
1- Form of Sociodemographic and Clinical Characteristics: elaborated by the researchers. Its apparent validity was assessed by six judges and nurses with experience in the oncology area and in instrument validation.

2- Pittsburgh Sleep Quality Index (PSQI-BR): validated for use in Brazil,⁽⁹⁾ aimed to assess the quality of sleep. It has seven components: subjective quality of sleep, sleep latency, sleep duration, sleep efficiency, sleep disorders, medication use and daytime dysfunction. The score can range from 0 to 3 for each component, with a maximum total score of 21 points. Scores above 5 points indicate poor quality of sleep and scores equal to or lower than 5 indicate good quality of sleep⁽¹⁰⁾.

3- MD Anderson Symptom Inventory (MDASI-core): validated for use in Brazilian patients. It was used to assess the quality of life of cancer patients based on their symptoms. Contains 19 items divided into two subscales: one that evaluates the intensity of the symptoms (pain, fatigue, nausea, sleep problems, anxiety, shortness of breath, difficulty remembering things, lack of appetite, drowsiness, dry mouth feeling (routine activities, mood, work, ability to walk, relationships, and enjoyment of life), and the other that evaluates the interference of symptoms in the daily life of the individuals (routine activities, mood, work performance ability to walk, relationships and enjoyment of life). The evaluations concern the latest 24 hours of the respondents⁽¹¹⁾.

4- Analog Visual Sleep Scale (VAS-Sleep): used to evaluate the quality of sleep in the previous 24 hours, allowing a daily estimate according to three dimensions or subscales: Disturbance, Effectiveness and Supplementation. It consists of 16 items, 15 of which are self-reported and one that results from the sum of the first two items. Each item consists of two statements about the same sleep-related situation, each one positioned at one end of a 100 mm line, marked in 5 mm increments. The two statements of each item have opposite meanings. The patient marks a dash perpendicular to the line, after making an estimate of the proximity of his/her quality of sleep to one of the extremes regarding the sleep situation presented. The result is measured with a ruler, and the measurement taken from the left end of the line to the position of the dash is recorded. Measurements may vary from 0-700 in the subscale of Disturbance (seven items), from 0 to 600 in the Effectiveness subscale (five items, one of which is the sum of items 1 and 2) and from 0 to 400 in the Sleep Supplementation subscale (four items). The values of each subscale are considered separately for the analysis. The higher the value obtained in the Disorder and Supplementation Scales, the worse the quality of sleep, and the higher the score in the Effectiveness Scale, the better the quality of sleep⁽¹²⁾.

Distribution of data collection instruments according to T0, T1, T2 and T3 periods are shown in Figure 1.



Legend: Karnofsky Performance Status (KPS), Pittsburgh Sleep Quality Index (PSQI-BR), MD Anderson Symptom Inventory (MDASI-core), Analog Visual Sleep Scale (EVA-Sleep).

Figure 1 - Flowchart of the data collection of the study. Campinas, SP, Brazil, 2015

Data processing was performed with descriptive and inferential statistical analysis, using Statistical Analysis System (SAS), version 9.4 and Statistical Package for Social Sciences (SPSS), version 22.

Descriptive analysis consisted in the calculation of frequencies and percentages for categorical variables; means, standard deviations and medians for numerical variables. Inferential analysis was performed through the statistical tests described below.

Friedmann test, followed by the Dunn-Bonferroni post hoc test, were used to compare the scores of the assessed instruments in the four chemotherapy sessions. The scores for the domains of the MDASI-core instrument, in each session, were compared among the subjects with good and poor sleep quality using Mann-Whitney nonparametric test. In these analyzes, the level of significance was 1.25% ($p < 0.0125$), due to the number of comparisons performed.

The identification of symptom clusters over time was obtained with exploratory factor analysis to identify the interrelationships between the items that make up the MDASI-core instrument. In factor analysis, the principal component analysis for factor extraction and the Varimax rotation method were used. Thus, the number of study participants may vary depending on the interrelationship with the items of the instruments and cluster formation⁽¹²⁾.

Data adjustment to factor analysis was verified using the Kaiser-Meyer-Olkin index (KMO) test and Bartlett's test of sphericity. For the KMO index, the following values were considered: KMO value ≤ 0.50 unacceptable; KMO value > 0.50 and ≤ 0.60 not good, but acceptable; KMO value > 0.60 and ≤ 0.70 average; KMO value > 0.70 and ≤ 0.80 moderate; KMO value > 0.80 and ≤ 0.90 good, KMO value > 0.90 excellent⁽¹³⁾. The Bartlett's sphericity tests the null hypothesis that the correlation matrix is an identity matrix, i.e., there is no correlation between the items evaluated.

In order to determine the number of factors to be extracted, factors with eigenvalues greater than 1.0 were observed. Factor loadings represent the correlation between the items and the extracted factors. Coefficients between 0.30 and 0.40 are considered minimal; factor loadings between 0.50 and 0.70 are significant and factor loadings higher than 0.70 indicate a well-defined structure⁽¹³⁾.

RESULTS

For this study, 127 individuals were recruited. Since 7 of them died, the total number of participants was 120. Sociodemographic and clinical data are described in Table 1. Seventy-one patients (59.1%) were female, 74 (61.6%) had a partner and 120 (100%) professed a religion. The most frequent types of cancer were breast, in 35 (29.2%) patients and of the colon and rectum in 25 (20.8%); 76 patients (63.3%) were in stage III and 74 (61.7%) underwent 21-day anticancer chemotherapy cycles. Comorbidities were absent in 74 (61.7%) people and 103 (85.8%) did not use sleeping pills.

Table 1 – Distribution of sociodemographic and clinical data of the participants of the study (n=120). Taubaté, SP, Brazil, 2016 (continues)

Sociodemographic and clinical data	n	%
Gender		
Female	71	59.1
Male	49	40.9
Marital Status		
With a companion	74	61.6
Without a companion	46	38.4
Religion		
Religious	120	100
Cancer staging		
II	35	29.2
III	76	63.3
IV	9	07.5
Site		
Breast	35	29.2
Colon and rectum	25	20.8
Head and neck	13	10.8
Prostate	12	10
Lung	11	09.2
Lymphoma	6	5
Others	18	15
Cycle regimen		
21 days	74	61.7
28 days	46	38.3

Comorbidities		
None	74	61.7
High blood pressure (SAH)	32	26.7
Diabetes mellitus (DM)	3	02.5
SAH and DM	11	09.2
Use of medication (sleeping pills)		
Yes	17	14.2
No	103	85.8

The mean age of participants was 58.5 years (SD = 12.3), with a median of 57 years and a variation of 26 to 83 years. The time elapsed since diagnosis of cancer ranged from one month to 16 years, with a mean of 21.6 months (SD = 31.1), and was less than one year for 80 patients (66.7%), of whom 45 (56.3%) were in staging III.

Symptom intensity showed a significant and moderate correlation with PSQI-BR scores and the VAS-Sleep Disturbance, Effectiveness and Supplementation scales in all chemotherapy sessions (Table 2).

Table 2 - Correlation analysis between the scores of MD Anderson Symptom Inventory (MDASI-core); scores of subscales Sleep Disturbance, Effectiveness and Supplementation of the Visual Analog Sleep Scale (VAS - Sleep) and scores of the Pittsburgh Sleep Quality Index (PSQI - BR) in the four sessions of anticancer chemotherapy (n = 120). Taubat , SP, Brazil, 2016 (continues)

1 st Anticancer Chemotherapy Session		
PSQI-BR score	MDASI-core Intensity	MDASI-core interferences
	-0.4221*	-0.1439*
Disturbance: VAS-Sleep	-0.3798*	-0.1644*
Effectiveness: VAS-Sleep	-0.3877*	-0.2349*
Supplementation: VAS-Sleep	-0.3711*	-0.2129*
2 nd Anticancer Chemotherapy Session		
PSQI-BR score	MDASI-core intensity	MDASI-core interferences
	-0.4556*	-0.1878*
Disturbance: VAS-Sleep	0.4875*	-0.2356*
Effectiveness: VAS-Sleep	-0.5381*	-0.2772*
Supplementation: VAS-Sleep	-0.4110*	-0.3121*
3 rd Anticancer Chemotherapy Session		
	MDASI-core intensity	MDASI-core interferences
PSQI-BR score	-0.5156*	-0.1635*
Disturbance: VAS-Sleep	-0.4364*	-0.1777*
Effectiveness: VAS-Sleep	-0.4180*	-0.2059*
Supplementation: VAS-Sleep	-0.2461*	-0.3122*

4 th Anticancer Chemotherapy Session		
PSQI-BR score	MDASI-core intensity	MDASI-core interferences
	-0.5297*	-0.2777*
Disturbance: VAS-Sleep	-0.3470*	-0.2453*
Effectiveness: VAS-Sleep	-0.4114*	-0.3063*
Supplementation: VAS-Sleep	-0.2594*	-0.1589*

* p-value <0.0125^a in Spearman's Rank correlation test

The cluster formed by the symptoms 'sleep disorders, anxiety and sadness' was stable from T1, followed by the 'sickness and vomiting' cluster (Chart 1).

Chart 1 - Symptom clusters according to their intensity identified in each one of the anticancer chemotherapy sessions among patients with poor sleep quality. Taubaté, SP, Brazil, 2016 (continues)

Symptom clusters	Anticancer chemotherapy session			
	T0 (n=87)	T1(n=93)	T2 (n=90)	T3 (n=86)
1	Dry mouth Pain Numbness	Vomiting Nausea	Pain Shortness of breath Difficulty remembering	Sleep disorders Anxiety Sadness
2	Tiredness Shortness of breath Somnolence	Sleep disorders Anxiety Sadness	Sleep disorders Anxiety Sadness	Nausea Lack of appetite Numbness
3	Vomiting Nausea	Somnolence Difficulty remembering Tiredness	Dry mouth Lack of appetite Numbness	Pain Tiredness Shortness of breath
4	Sleep disorders Difficulty remembering Sadness	Pain Numbness	Tiredness Nausea	Difficulty remembering Somnolence Dry mouth

During the sessions, the symptoms were grouped in order to form functional, emotional and sleep organic clusters, and gastrointestinal clusters. Throughout the sessions, sleep was more related to emotional variables than to physical variables (Chart 2).

Chart 2 – Symptom clusters according to their mean intensity, identified during the sessions of anticancer chemotherapy among patients with poor sleep quality, through exploratory factor analysis. Taubaté, SP, Brazil, 2016

Symptom clusters		
Organic and functional	Emotional and sleep	Gastrointestinal
Pain Tiredness Shortness of breath Difficulty remembering things Dry mouth Numbness	Sleep disorders Anxiety Sadness	Nausea Vomiting

DISCUSSION

Poor quality sleep was detected in approximately 75% of the participants of the study, corroborating the national and international relevant literature⁽¹⁴⁾ in which the authors warn of sleep disturbance in individuals with cancer. In patients with poor sleep quality, sleep disorders formed clusters with the symptoms “anxiety” and “sadness”.

Among the participants, 70.8% were in advanced stages of the disease, and many had been diagnosed with cancer less than a year ago, suggesting that these individuals got a late diagnosis^(11,15-16). Late diagnosis and treatment, as well as lack of financial resources, contribute to a decrease in survival. The lack of knowledge about variables that suggest the incidence of cancer by non-oncologists and other health professionals contributes to the delay in diagnosis and the progression of cancer staging⁽¹⁶⁾.

Interestingly, most participants had no comorbidities, although many of them were nearing 60, when individuals are more likely to develop diseases, especially cardiovascular disorders. Other studies⁽¹⁶⁻¹⁷⁾ on cancer did not address comorbidities, and, thus comparisons of this frequency were not possible. The present study suggests that the absence of comorbidities does not always exclude the onset of cancer. It can also be suggested that information in the patient's charts is outdated, or incomplete, or else that the patients were not aware of these disorders.

In this study, most participants reported living with a partner and having a religious belief. A review study shows that this profile is common in cancer patients⁽⁹⁾ and also that these patients usually have a religion whose positive contribution to the acceptance and coping of diseases is recognized, perhaps because of their role in maintaining the mood, the will to live and in satisfaction with life⁽¹⁰⁾. Chemotherapy treatment often renews hopes of cancer patients⁽¹¹⁻¹⁹⁾.

The results of studies conducted in other countries with cancer patients showed variations in the PSQI score of 7.4 to 11.19,^(5,12,17) indicating poor sleep quality among participants in these studies. Authors who addressed PSQI components⁽¹³⁻¹⁷⁾ reported high sleep latency, sleep disorders and short-term sleep more frequently. Among the factors identified as causes of sleep disorders, the cancer diagnosis itself, as well as side effects of the therapy selected, were mentioned, which corroborates other studies with individuals with cancer, in which the PSQI was used to evaluate the quality of sleep. The scores obtained in all the studies indicated poor sleep quality.

Many people get used to poor sleep quality and do not pay much attention to this complaint when performing health assessments. This is also true for the healthcare personnel that provide care to these individuals⁽¹⁵⁾. The findings of this study suggest that the participants may not perceive sleep quality as something important for their health or

may even believe that sleep disruption, early morning awakenings and daytime sleepiness are “normal”.

It is known that sleep deprivation contributes to the development, as well as to the exacerbation of cardiovascular and metabolic diseases, and also shortens life span⁽¹⁶⁾. The onset of cancer, among other variables, is also associated with sleep deprivation. Thus, it can be suggested that the evaluation of the sleep quality of the cancer patients will contribute to a broader management of this disorder. Reflections on the subject are useful, and it is important to evaluate the level of the attention paid to sleep complaints by health professionals, as these may not be aware of studies that reported the consequences of poor sleep quality on the human body.

In a study of 119 patients with various types of cancer, assessment of symptoms using the MDASI-core showed that lack of appetite, disturbed sleep, fatigue, lack of energy and distress were the most common symptoms. The activities most affected by the intensity of the symptoms were general activities, enjoyment of life and work;⁽¹⁶⁾ Such data contrasts with the findings of this study, in which the most important symptoms were anxiety and sadness, and the activities that were most affected by the intensity of the symptoms were not statistically significant.

Regarding sleep quality assessment with the use of the VAS-Sleep, it showed that the greater the variability in the subscales of Effectiveness and Supplementation of sleep, the greater the mean intensity of the symptoms. Specifically, variations in the Effectiveness subscale are correlated with symptoms of pain, fatigue, dry mouth and vomiting; on the other hand, variations in the subscale of Supplementation are correlated with symptoms of tiredness, difficulty remembering and lack of appetite. Sleep quality is characterized by the regularity of people’s habits, which may justify that sleep variations correlate with the increase in the mean intensity of the symptoms⁽¹⁶⁾.

During chemotherapy sessions, the symptoms of anxiety and sadness showed the highest mean intensity and did not vary significantly during the sessions. This contrasts with the findings of a study with Chinese patients where the most prevalent symptoms were dry mouth and fatigue. The present study analyzes the emotional factors in cancer patients undergoing chemotherapy treatment, because although the interference of such symptoms in cancer treatment are widely known, many health centers do not offer psychological monitoring to these individuals, nor do they offer any advice on the importance of emotional control to the patients and their relatives.

According to the Theory of Unpleasant Symptoms, multiple factors contribute to the prolongation of the symptoms. Therefore, a multidisciplinary and permanent approach is necessary for the proper management of symptoms. It should be noted that inadequate management of symptoms can lead to discontinuation of chemotherapy and to cancer progression.

No studies that used the VAS-Sleep for assessment of sleep disturbance, effectiveness and supplementation in cancer patients were found. Therefore, it was not possible to compare the results obtained in the scales with other similar studies.

Knowledge of the formation of symptom clusters in individuals undergoing outpatient antineoplastic chemotherapy contributes to the delivery of improved and customized care. Understanding how the symptoms occur and are interrelated makes it possible to implement strategies aimed to prevent their onset, as well as choose the most appropriate treatment.

In this study, the most stable symptom cluster during the four sessions investigated was “sleep disorders, anxiety and sadness”. The other symptoms were unstable during the four chemotherapy sessions, forming different groups. The stability of the onset of symptoms may suggest that they should be jointly addressed in clinical practice, since in cases of ‘emotional and sleep’ clusters, treating merely the sleep disorders is not effective if the patient’s emotional aspect is not treated as well.

Studies that demonstrate the relationship between these symptoms and sleep quality allow for more focused and early clinical interventions that contribute to improve the treatment and evolution of cancer patients, given the importance of good quality sleep. Studies with larger populations are needed to elucidate the evidence on the mechanism of formation of symptom clusters.

Some limitations of the study include the sample size and the fact that participants were not separated into groups according to their types of cancer, which could facilitate the identification of the symptom clusters.

CONCLUSION

In addition to its contribution to disseminate knowledge about the cluster of symptoms in cancer patients undergoing outpatient chemotherapy, the present study demonstrated how these symptoms behave during the first four chemotherapy sessions. Thus, the delivery of permanent care was proven necessary. Such care must be provided by the multidisciplinary team, and can be done in pairs in each chemotherapy session. Nurses, psychologists, social workers, physicians, occupational therapists, physiotherapists, nutritionists, as well as nursing technicians are among the health professionals who can deliver this customized care to cancer patients and their families.

The cluster of 'sleep disorders, anxiety and sadness', the most stable identified cluster in this study, should be addressed in all chemotherapy sessions. Not only the organic symptoms, but also the emotional symptoms must be adequately addressed in the sessions.

We also stress that it is not acceptable that health professionals who attend oncological patients perceive and expect the onset of symptoms as something normal. The onset of symptom clusters should be prevented, so that they do not contribute to the increase of their intensity and duration, according to the Theory of Unpleasant Symptoms.

The use of the VAS-Sleep in this study contributed to a better understanding of the quality of sleep regarding disturbance, supplementation and effectiveness. When the cause of poor quality of an individual is detected, it is easier to implement effective measures to improve it.

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