

Influence of Chemotherapy Treatment on Eating Behavior and Quality of Life of Oncologic Patients

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Influência do Tratamento Quimioterápico no Comportamento Alimentar e Qualidade de Vida de Pacientes Oncológicos

Influencia del Tratamiento de Quimioterapia en el Comportamiento Alimentario y Calidad de Vida de los Pacientes con Cáncer

Ana Leticia Pereira Andrade¹; Emilene Maciel e Maciel²; Gilmara Péres Rodrigues³; Suellem Torres de Freitas⁴; Maria da Cruz Moura e Silva⁵

Abstract

Introduction: Cancer is a multifactorial disease with uncontrolled cells growth, whose treatment can trigger food aversions and changes in quality of life. **Objective:** To evaluate the influence of chemotherapy treatment on eating behavior and quality of life of oncologic patients. **Method:** A longitudinal and observational study, carried out from June to October of 2018, at the University Hospital of the Federal University of Piauí. The data were obtained in two moments: T0, socioeconomic, demographic, clinical, food behavior and quality of life, and T1, food behavior and quality of life. The following tests were used: Shapiro-Wilk, t-Student and Wilcoxon; Pearson and Spearman, with $p < 0.05$. **Results:** Of the 17 patients, the majority were females (82.4%), medium age of 54.2 years, family income of 1 to 2 minimum wages (64.7%) and ethnics, brown (76.5%). Breast cancer was the most frequent (52.9%). There were food aversions in T1, for “soups and pastas” ($p=0.001$), “meats and fish” ($p=0.016$), and “sweets, desserts and appetizers” ($p=0.001$). There was a significant difference in quality of life regarding the general health status ($p=0.001$) and financial difficulty ($p=0.026$), as well as in correlations between quality of life and food behavior. **Conclusion:** The results reinforce the need of constant nutritional monitoring since the beginning of the chemotherapy in order to avoid and/or reduce the negative repercussions on the nutritional status and, consequently, on the quality of life. In addition, more studies with longer time ranges and larger samples are required.

Key words: Neoplasms/drug therapy; Feeding Behavior/drug effects; Quality of Life.

Resumo

Introdução: O câncer é uma doença de origem multifatorial, com crescimento irregular e descontrolado de células, cujo tratamento pode desencadear aversões alimentares e mudanças na qualidade de vida. **Objetivo:** Avaliar a influência do tratamento quimioterápico no comportamento alimentar e na qualidade de vida de pacientes oncológicos. **Método:** Estudo longitudinal e observacional, realizado de junho a outubro de 2018, no Hospital Universitário da Universidade Federal do Piauí. Os dados foram obtidos em dois momentos: T0, socioeconômicos, demográficos, clínicos, de comportamento alimentar e qualidade de vida; e T1, de comportamento alimentar e qualidade de vida. Foram utilizados os testes Shapiro-Wilk, t-Student e Wilcoxon; Pearson e Spearman com $p < 0,05$. **Resultados:** Dos 17 pacientes, a maioria era do sexo feminino (82,4%), média de 54,2 anos, renda familiar de um a dois salários mínimos (64,7%) e de etnia parda (76,5%). O câncer mais frequente foi o de mama (52,9%). Houve aversões alimentares em T1 para: “sopas e massas” ($p=0,001$), “carnes e peixes” ($p=0,016$), e “doces, sobremesas e aperitivos” ($p=0,001$). Houve diferença significativa na qualidade de vida quanto à medida global de saúde ($p=0,001$) e dificuldade financeira ($p=0,026$), assim também como nas correlações entre qualidade de vida e comportamento alimentar. **Conclusão:** Os resultados reforçam a necessidade de constante monitoramento nutricional desde o início do tratamento quimioterápico com o intuito de evitar e/ou reduzir suas repercussões negativas no estado nutricional e, conseqüentemente, na qualidade de vida. Além disso, a realização de mais estudos, com amostra e intervalo de tempo maiores, é necessária.

Palavras-chave: Neoplasias/tratamento farmacológico; Comportamento Alimentar/efeitos dos fármacos; Qualidade de Vida.

Resumen

Introducción: El cáncer es una enfermedad de origen multifactorial, con crecimiento descontrolado de células, cuyo tratamiento puede desencadenar aversiones alimenticias y cambios en la calidad de vida. **Objetivo:** Evaluar la influencia del tratamiento quimioterápico en el comportamiento alimentario y en la calidad de vida de pacientes oncológicos. **Método:** Estudio longitudinal y observacional, realizado de junio a octubre de 2018, en el Hospital Universitario de la Universidad Federal de Piauí. Los datos fueron obtenidos en dos momentos: T0, socioeconómicos, demográficos, clínicos, de comportamiento alimentario y calidad de vida y T1, de comportamiento alimentario y calidad de vida. Se utilizaron las pruebas: Shapiro-Wilk, t-Student y Wilcoxon; Pearson y Spearman, con $p < 0,05$. **Resultados:** De los 17 pacientes, la mayoría eran mujeres (82,4%), promedio de 54,2 años, ingreso familiar de 1 a 2 salarios mínimos (64,7%) y de etnia parda (76,5%). El cáncer más frecuente fue el de mama (52,9%). Se observaron aversiones alimentarias en T1, para algunos grupos de alimentos. Se observó una diferencia significativa en la calidad de vida en cuanto a la medida global de salud ($p=0,001$) y dificultad financiera ($p=0,026$), así como las correlaciones entre calidad de vida y comportamiento alimentario. **Conclusión:** Los resultados refuerzan la necesidad de constante monitoreo nutricional desde el inicio del tratamiento quimioterápico con el fin de evitar y/o reducir las repercusiones negativas de este en el estado nutricional y en calidad de vida. Además, la realización de más estudios con muestra e intervalo de tiempo mayor, son necesarios.

Palabras clave: Neoplasias/tratamiento farmacológico; Conducta Alimentaria/efectos de los fármacos; Calidad de Vida.

¹ Hospital Universitário da Universidade Federal do Piauí (HU/UFPI), Teresina (PI), Brazil. Orcid iD: <https://orcid.org/0000-0002-7721-2090>.

² HU/UFPI, Teresina (PI), Brazil. Orcid iD: <https://orcid.org/0000-0002-5743-6687>.

³ HU/UFPI, Teresina (PI), Brazil. E-mail: gilmara-peres@ufpi.edu.br. Orcid iD: <https://orcid.org/0000-0003-2770-8191>.

⁴ Universidade Federal do Pará, Belém (PA), Brazil. Orcid iD: <https://orcid.org/0000-0002-2146-2840>.

⁵ HU/UFPI, Teresina (PI), Brazil. Orcid iD: <https://orcid.org/0000-0002-9181-7838>.

Address for Correspondence: Ana Leticia Pereira Andrade, Rua Chanceler Edson Queiroz, 2043 – Dirceu 1, Teresina (PI), Brazil. CEP 64077-750. E-mail: ana13_leticia@hotmail.com



INTRODUCTION

Cancer is a chronic multifactorial disease with disorganized and irregular cells growth that are able to multiply and infiltrate in several organs and tissues. Currently, it is defined as a public health problem either in developed or in underdeveloped countries¹.

Great part of the diagnosed patients manages to have proper treatment that unfolds with multiple side effects as fatigue, pain, nausea, anorexia and unintentional weight loss. These symptoms can provoke negative impact in the treatment and in the quality of life (QL) of these individuals².

Chemotherapy treatment can affect the diet and eating habits of the individual with cancer because it provokes chemosensory alterations, taste distortions and increase of the olfactive sensibility as a result of the own disease or side effect of the proposed treatment. Said changes lead to weight loss, low food intake and reduction of QL³.

According to Palazzo⁴, oncology patients acquired food aversions resulting from malaise associated to the use of chemotherapics that negatively affect the food taste. During the period the antineoplastic remains active, taste sensorial cells change, causing reduction of the sensitiveness and consequently, the flavor, which may lead to the intake or not of some type of food, which impacts eating habits and quality of life of these patients.

According to the World Health Organization (WHO)⁵, QL is defined as the “as an individual’s perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns”. The assessment of the QL of the oncology patient is an important indication of its response to the disease and to the treatment with analysis of the physical and psychosocial impact the diseases, impairment or dysfunction may cause in each individual. Therefore, understanding the patient’s QL is part of the daily life of the healthcare units that influences therapeutic decisions and conducts taken by the health caregiver staff⁶.

Whereas the rising incidence of cancer and particularly the consequences of the antineoplastic treatment over the physical and psychological conditions of this public, this study had the objective of evaluate the influence chemotherapy treatment has in the eating habits and quality of life of oncologic patients.

METHOD

Longitudinal and observational study conducted from June to October 2018 at “Hospital Universitário da Universidade Federal do Piauí (HU-UFPI)”. Probability

sample utilizing simple random technique. It was based in the mean number of chemotherapy treatment of the first cycle obtained from an estimate in the months of April to June 2017 at the Oncology Unit of HU-UFPI, resulting in average 10 patients-month. The collection period lasted three months. The total population consisted of 30 patients, considering the prevalence of the negative effect of the chemotherapy treatment over the eating habit, the QL of oncologic patients was 50% and confidence interval of 90% with margin of error of 10%; therefore, it was reached an *n* of 21 patients to be enrolled. Nonetheless, because of the losses (deaths, withdrawal and incomplete data in the charts), the study was finalized with 17 patients. The inclusion criteria were both genders older than 18 years diagnosed with neoplasms, despite the type of tumor and time of diagnosis, submitted to chemotherapy. It were excluded HIV-patients with neurologic or psychiatric issues with more than one type of neoplasm in palliative chemotherapy and metastasized. Data collection extended for two months due to difficulties of enrollment because of holidays of healthcare providers and strikes, reducing the flow of consultations and continuation of the chemotherapy treatment.

Data were obtained in the chemotherapy room through interviews and analysis of charts. Socioeconomic, demographic, clinical, eating habits and QL were collected in two moments: T0, before the beginning of the treatment and T1, nearly two months after. In the first moment, socioeconomic, clinical, eating habits and QL were taken and in the second, eating habits and QL.

For the description of socioeconomic and demographic characteristics of the participants it were considered date of birth, gender, marital status, city, ethnicity, education level, income and life habits. For clinical data, it were obtained information about type of cancer and time of diagnosis.

Food aversion was evaluated with the scale Food Action (FACT) utilized in the study of Verde⁷ where food was distributed according to the FACT scale developed by Schutz⁸ and grouped according to the caloric contribution per 100 g of food.

The patients had nine possibilities of responses, each one with a determined score varying from 1 to 9, the lower score for the option “eat only when forced to” and the highest for “eat always when opportunity appears”. Highest scores indicated preference for certain food/group and lowest scores, aversion.

The variables considered to evaluate food aversion were food and food groups. Only the food/groups described from T1 with T0 as reference were considered acquired aversion.

EORTC-QLQ-C30 version 3.0 instrument in Portuguese was used to analyze QL⁹. This instrument

includes five functional scales (physical, role, cognitive, emotional, and social), three scales of symptoms (fatigue, pain, nausea and vomiting), global health status/QL scale, six other items that evaluate symptoms commonly reported by oncologic patients (dyspnea, loss of appetite, insomnia, constipation and diarrhea) and perceived financial impact of the treatment and disease.).

For QL evaluation through QLQ-C30, it were considered scores for each scale varying from 0 to 100. In the functional scale and global health status (GHS)/QL, the highest the score the patient had, closer to healthy QL. However, for the scales of symptoms and financial difficulty, the highest the score, greatest the side effects¹⁰.

The statistical analyzes were conducted with SPSS v.20.0. It was applied the Shapiro-Wilk test for data normality. The quantitative variables were compared between two pairwise moments with t-Student test for normal variables and Wilcoxon test for non-parametric variables.

Linear intra correlations and between times T0 and T1 were performed utilizing the linear correlation coefficient of Pearson for data with normal distribution and Spearman correlation coefficient for the non-parametric distribution, with statistical significance for $p < 0.05$, confidence interval of 95%.

The study complied with Resolution number 466/2012¹¹, and was approved by the Institutional Review Board for Human Research of HU/UFPI, report CAAE: 85281318.8.0000.8050.

RESULTS

The distribution of the sample according to socioeconomic, demographic and clinical characteristics is shown in Table 1. Seventeen patients were studied, the mean age was 54.21 years, the majority were females (82.4%), of brown ethnicity (76.5%), married (70.6%), incomplete elementary education (58.8%) and family income between one and two minimum wages (64.7%).

In relation to the clinical profile, the most prevalent cancers in this population were breast (52.9%) and cervix (23.5%). The predominant time of diagnosis was lower than three months (53%).

The scores of food aversion in two moments are listed in Table 2. The food listed below have statistical significance ($p < 0.05$).

For every food, the score values were lower after chemotherapy treatment (T1), standing out “pizza, pie, Sfiha, pastry, Kibbeh, chicken drumstick” ($p=0.001$), “sausages, ham, other cold cuts” ($p=0.004$); “butter spread on bread” ($p=0.003$); “ice cream” ($p=0.004$); “Minas cheese, ricotta, light creamy cheese” ($p=0.007$).

Table 1. Distribution of the sample studied according to the socioeconomic and clinical characteristics

Variables	N	%
Gender		
Female	14	82.4
Male	3	17.6
Ethnicity		
Brown	13	76.5
Black	4	23.5
Marital Status		
Married	12	70.6
Single	3	17.6
Divorced	1	5.9
Other	1	5.9
Education		
Incomplete elementary school	10	58.8
Complete elementary school	3	17.6
Complete high school	4	23.5
Family Income		
Less than 1 minimum wage	5	29.4
1 to 2 minimum wages	11	64.7
2 to 3 minimum wages	1	5.9
Type of cancer		
Cervix	4	23.5
Breast	9	52.9
Ovary	1	5.9
Prostate	2	11.8
Rectum	1	5.9
Time of diagnosis		
≤ 3 months	9	53.0
> 3 months	4	23.5
Not informed	4	23.5

While reviewing the scores of food aversion (Table 3), it was noticed a significant reduction of the scores of the groups “soups and pasta” ($p=0.001$), “meats and fishes” ($p=0.016$) and “sweets, desserts and appetizers” ($p=0.001$), between times T0 and T1. The other groups of food presented a tendency of reduction of the mean scores obtained in T1, however, without statistical significance.

In relation to QL, Table 4 shows the variables analyzed with the corresponding scores of the two moments of the chemotherapy treatment. It is noticed the alteration in the perception of the QL by the patients enrolled to the study when T0 and T1 were compared for the domains: GHS ($p=0.001$) and “financial difficulty” ($p=0.026$). For the other variables, there were no significant alterations between times T0 and T1.

Table 2. Scores of food aversion per food in moments T0 and T1

Variables	Time	Mean	Standard Deviation	p*
Pasta. lasagna	T0	5.24	2.22	0.022
	T1	3.35	1.77	
Pizza. pie. Sfiha. pastry. Kibbeh. chicken drumstick	T0	4.53	2.27	0.001
	T1	1.76	0.97	
Jerk beef. sun-dried meat	T0	4.71	2.39	0.028
	T1	3.24	1.92	
Sausage. ham. other cold cuts	T0	4.59	2.60	0.004
	T1	2.18	1.88	
Potato. cassava. yam - baked/boiled	T0	7.71	1.31	0.042
	T1	6.29	2.09	
Minas cheese. ricotta. light creamy cheese	T0	5.35	2.55	0.007**
	T1	3.06	1.64	
Cucumber. pepper	T0	5.29	2.95	0.048
	T1	4.00	2.62	
Natural juice of other fruits	T0	7.41	2.03	0.041
	T1	6.41	1.70	
Rolls. loaf. whole bread. toast. sweet rolls.	T0	7.41	1.81	0.038
	T1	5.65	2.32	
Butter spread on bread	T0	4.00	2.45	0.003
	T1	1.76	1.79	
Chocolate. chocolate candies. "brigadeiro" (typical Brazilian sweet made with cocoa. condensed milk and sugar)	T0	3.59	2.12	0.038
	T1	2.41	1.50	
Ice cream	T0	4.65	2.15	0.004
	T1	2.24	1.79	

Captions: *Test of Wilcoxon; **Test t-Student.

It were also analyzed the possible correlations between QL and eating behavior in two moments whose results are described in Table 5. According to these results, it were observed significant correlations between these variables in moment T1 that did not exist before the chemotherapy treatment (T0).

It is noticed for GHS that "fruits and juices" and "sweets, desserts and appetizers" presented positive correlation and statistically significant ($p=0.040$ and

Table 3. Scores of food aversion according to food groups in moments T0 and T1

Variables	Time	Mean	Standard Deviation	p*
Soups and pasta	T0	22.71	4.73	0.001
	T1	16.41	4.37	
Meat and fishes	T0	54.41	11.53	0.016
	T1	43.71	9.15	
Legumes and egg	T0	21.35	4.43	0.195
	T1	19.53	4.02	
Rice and tubers	T0	32.71	6.34	0.244
	T1	29.94	7.22	
Milk/dairy and cereals	T0	35.41	8.08	0.067
	T1	30.82	5.88	
Vegetables	T0	35.12	10.42	0.159
	T1	32.00	7.57	
Sauces	T0	12.53	6.17	0.256
	T1	9.88	5.22	
Fruits and juices	T0	62.24	14.54	0.065
	T1	55.94	8.47	
Breads and cookies	T0	17.76	4.19	0.056
	T1	14.47	5.30	
Beverages	T0	14.41	6.71	0.126**
	T1	11.76	4.29	
Sweets. desserts and appetizers	T0	29.59	5.46	0.001
	T1	21.29	7.87	
Total scores	T0	338.29	47.72	0.002
	T1	282.82	40.09	

Captions: *Test t-Student; **Test Wilcoxon.

$p=0.031$) in moment T0. The study indicated significant and negative correlation for the group of "sweets, desserts and appetizers" ($p=0.003$) and "meats and fishes" ($p=0.020$). There was also significant negative correlation in relation to the onset of symptoms and intake of "legumes and eggs" ($p = 0.047$), "sauces" ($p = 0.024$) and "beverages" (0.028).

DISCUSSION

Considering the increasing incidence of cancer, and particularly, the consequences of the antineoplastic treatment under the physical and psychological conditions of this public, the necessity of studies that investigate the medium and long term influence of the chemotherapy treatment over the eating behavior and quality of life of these patients is of essence.

Table 4. EORTC QLQ-C30 Scores and domains in moments T0 and T1

Variables	Time	Mean	Standard Deviation	p*
Global measure of health	T0	66.18	25.25	0.001
	T1	86.27	18.85	
Functioning Scale	T0	21.82	14.92	0.836
	T1	20.27	18.99	
Physical function	T0	22.35	22.23	0.479
	T1	25.88	22.47	
Role performance	T0	17.65	27.30	0.385
	T1	21.57	25.85	
Emotional function	T0	28.92	25.02	0.074
	T1	16.67	25.85	
Cognitive function	T0	16.67	23.57	0.593
	T1	14.71	26.27	
Social function	T0	23.53	28.30	0.877
	T1	22.55	30.01	
Scale of symptoms	T0	21.08	13.19	0.851**
	T1	20.30	16.57	
Fatigue	T0	29.41	30.67	0.488
	T1	33.99	29.26	
Nausea and vomit	T0	9.80	17.74	0.259
	T1	18.63	23.48	
Pain	T0	31.37	27.56	0.263
	T1	21.57	28.11	
Dyspnea	T0	11.76	23.40	0.334
	T1	5.88	13.10	
Insomnia	T0	33.33	40.82	0.167
	T1	17.65	26.66	
Loss of appetite	T0	25.49	36.38	0.915
	T1	25.49	38.24	
Constipation	T0	19.61	29.01	0.336
	T1	15.69	29.15	
Diarrhea	T0	7.84	25.08	0.062
	T1	23.53	30.65	
Financial Difficulty	T0	50.98	44.28	0.026
	T1	23.53	34.89	

Captions: *Test Wilcoxon; **Test t-Student.

The result of the present study regarding gender was similar to Hisse et al.¹², whose objective was to know the sociodemographic and economic characteristics, the self-reported morbidities and the habits of life of individuals with cancer in chemotherapy treatment and hormone therapy attended at the oncology unit of a school hospital in Brazil's South region. In this study, 52.9%

Table 5. Correlation between QL and eating behavior in moments T0 and T1

EORTC QLQ-C30 Scores	Variable of Correlation	r	p*
T0			
Global Measure of Health	Fruits and juices	0.503	0.040
	Sweets, desserts and appetizers	0.524	0.031
Functioning scale	Fruits and juices	-0.632	0.006
	Sweets, desserts and appetizers	-0.676	0.003
Scale of symptoms	Meats and fishes	-0.58	0.020
	Legumes and egg	-0.488	0.047
	Sauces	-0.543	0.024
	Beverages	-0.531	0.028
Financial Difficulty	Milk/dairy and cereals	-0.486	0.048**
	Vegetables	-0.593	0.012**
	Fruits and juices	-0.602	0.011**
	Sweets, desserts and appetizers	-0.555	0.021**
T1			
Financial Difficulty	Meat and fishes	0.486	0.048**

Captions: *Correlation of Pearson; **Correlation of Spearman.

of the participants were females. For ethnicity, there was discrepancy since in the present study, the majority (76.5%) was brown. In the study of Hisse et al.¹², there was predominance (81.5%) of Caucasian individuals, which may have been caused because of the existing differences among Brazil's regions where they were conducted, the south region was more prevalent for Caucasian and European descent individuals.

The most prevalent type of cancer were: breast (52.9%), cervix (23.5%) and prostate (11.8%). These results follow the tendencies indicated by Ferlay et al.¹³ and corroborate the findings of other studies^{14,15} conducted with oncologic patients without chemotherapy treatment. Possibly the high frequency of breast and cervix cancer can be justified by the predominance of females in the population studied.

The predominant time of diagnosis was lower than three months (53%), a data that corroborates the findings of Souza et al.¹⁶, who noticed a median time of 45 days in a study with women older than 60 years diagnosed with breast cancer in São Paulo; and of Paiva et al.¹⁷ whose time of diagnosis was lower than 30 days in 88.9% of the cases. It is noteworthy that as early as neoplasms diagnosis is made, more direct impact it has in the patients' survival.

Acquired food aversions in patients with cancer result from the association between malaise, which occurs as an aftermath of the antineoplastic treatment and the taste of the food simultaneously consumed. Consequently, food is felt as bad and avoided, which brings nutritional complications, affecting the nutritional status and QL of the patients¹⁸.

It was noticed a reduction of the scores of food preferences after chemotherapy treatment (T1) for every food, standing out “pizza, pie, Sfiha, pastry, Kibbeh and chicken drumstick” ($p=0.001$) in regard to the evaluation of food aversion in the two proposed moments, “sausage, ham, other cold cuts” ($p=0.004$), “butter spread on bread” ($p = 0.003$), “ice cream” ($p=0.004$) and “natural juice of other fruits” ($p=0.041$); “Minas cheese or ricotta, light creamy cheese” ($p=0.007$), indicating aversion after chemotherapy treatment. Differently from the results obtained in the studies of Verde⁷, in a work performed with 25 breast neoplasm patients, it was verified a reduction only for coffee, after the beginning of the treatment and of Silva et al.¹, where no significant difference was observed in relation to food aversion between moments T0 and T1.

The reduction of the consumption of natural juices of other fruits can be prejudicial to these patients as it diminishes the intake of antioxidant nutrients that are primordial to protect the organism against the action of free radicals¹⁹. Therefore, it is important to encourage these patients to eat fruits and vegetables because they are natural sources of antioxidant nutrients, which provide protection and are associated to better survival.

Marinho et al.²⁰, while analyzing the population in three periods (before, during and after chemotherapy) verified in breast cancer patients, bigger appetite for salty food in T1 and T2 than in T0, while spiced food were better evaluated in T1, similar to the results obtained in the present study.

It was verified a significant reduction of the consumption of red meat ($p = 0.16$) in the scores of preference for the group of meats and fishes, unlike to what was obtained in the study of Verde⁷, where it was noticed a significant increase of the scores of preferences for bovine meat (boiled, roasted, grilled or barbecued). Capelari et al.²¹, in a study with 100 patients in chemotherapy treatment observed predominance of meat, fatty food, sweets and solids in general related food aversions, similar to the results of the present study.

For dairy products, it was also observed a reduction of the scores of preferences in T1, different from the result obtained by Verde⁷, who identified in breast cancer patients the presence of post-chemotherapy food aversion in 23% of the patients and mentioned milk and dairy as associated to discomfort in T1.

Possibly, the reduction of the scores of preferences for some food may have been influenced by food guidances provided in the beginning of the chemotherapy treatment or even by the side effects caused by the own treatment that impact the food intake, further to other factors as type of chemotherapy protocol, antiemetic among other factors not considered in this study.

In relation to QL, the patients considered satisfactory in T0, remaining as such in T1. Unsimilar to the study of Miranda et al.²², with 60 oncologic patients in a university hospital in Belém, that used the same tool of evaluation of QL, with mean of 11.4, showing that the patients considered their QL as unsatisfactory.

The studies of Fachinello et al.²³ and Vendrusculo⁹ reached similar results to the obtained in the present study. The first with ten patients in the beginning of the oncologic treatment showed MSG/QL of T0 (32) and T1 (72.1), with statistical difference. The second, with patients diagnosed with breast cancer after beginning the treatment, GSH /QL of 70,1. Possibly, this occurs because of the health status improvement of the patients and decrease of the symptoms after the first months of treatment²³, or yet, the performance of the multiprofessional team promoting actions of well coming and follow up since the beginning of the treatment.

Another domain of the QL scale that was significant between T0 and T1 was “financial difficulty”, with decrease of the scores of this domain in T1, showing improvement of QL. This finding corroborates Sawada et al.²⁴s with 30 antineoplastic patients indicating the mean score of 35.5 for financial difficulty, demonstrating that, despite the complexity and financial burden of the treatment, this did not brought relevant financial difficulties that interfered in the QL of these patients.

Food choice is the result of a complex interaction between intra and interpersonal factors. The determinants of the food choices can be classified as biological (hungry, taste and appetite), economic (cost, income and availability), physical (access, education, kitchen facilities and time), social (culture, family, pairs and standard of meals) and psychological (disposition, stress and guilt), in addition to difficulties, beliefs and knowledge about food. For the population in general, food choice is based in taste, cost, convenience, health and variety and taste is perceived as a highly important factor in the decisions of food choice²⁵.

In this direction, it was analyzed the correlation between QL and food behavior, being identified positive and significant correlation in T1 only for the domain “financial difficulty” and consumption of meats and fishes; this shows that these food were prioritized in the second phase of the study, which can indicate a higher level of information

obtained in relation to the increase of protein consumption as food change during the chemotherapy treatment.

The study of Campos et al.²⁶ showed that dietary intake was unrelated in a significant manner with the QL of the cancer patients. In the other hand, it stands out the significant influence of appetite and symptoms of the disease for the QL of these patients, as well as clinical and demographic variables, corroborating other studies^{27,28}. These findings reinforce the necessity of nutritional monitoring since the moment of the diagnosis in order ensure improvements of the QL of these patients.

This study had a few limitations as sample size, instrument of evaluation of food aversions, interval between the two moments studied and confounding factors not considered in the analyzes.

CONCLUSION

The findings of this study showed that the population consisted, in its majority, of brown women with breast cancer diagnosis. It concluded, still, that there was significant difference between times T0 and T1 in the scores of food preferences of several foods isolated or in some groups.

The patients reported their QL was satisfactory. The domain “financial difficulty” presented significant correlation with preference for some foods in T1. The results obtained reinforce the necessity of constant nutritional monitoring since the diagnosis and during the chemotherapy treatment in order to minimize and/or avoid the negative repercussions caused in the nutritional status by the disease and, consequently, in the QL of these individuals. In addition, it is suggested more studies, considering the limitations presented.

CONTRIBUTIONS

Ana Letícia Pereira Andrade, Emilene Maciel e Maciel, Suelem Torres de Freitas and Maria da Cruz Moura e Silva participated of the conception and planning of the study, collection, analysis and/or interpretation of data as well as in wording and/or critical review and final approval of the published version; Gilmará Péres Rodrigues participated of the wording and/or critical review and final approval of the final published version.

DECLARATION OF CONFLICT OF INTERESTS

There are no conflict of interests to declare.

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