BREAST AND PROSTATE CANCER: PERSONALITY FACTORS, ANXIETY, DEPRESSION AND PSYCHIATRIC DISORDERS

CÂNCER DE MAMA E PRÓSTATA: FATORES DE PERSONALIDADE, ANSIEDADE, DEPRESSÃO E TRANSTORNOS PSIQUIÁTRICOS

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ABSTRACT

Cancer treatment promotes changes in the patient's life, and although it is important, it can be associated with risk for the development of psychological and psychiatric disorders. The present study aimed to identify symptoms of anxiety and depression, psychiatric disorders (neurotic and psychotic) and personality factors in patients with breast and prostate cancer. For data collection, the following were used: sociodemographic questionnaire, Hospital Anxiety and Depression Scale (HAD), Big Five Factor Inventory (BIF2), and Self Report Questionnaire. 60 cancer patients participated in the research, 50% female and diagnosed with breast cancer and 50% male and diagnosed with prostate cancer. The data were analyzed using descriptive statistics and Spearman's correlation analysis. Possible and probable anxious and depressive symptoms were identified, respectively, in 36.7% (n=11) and 33.3% (n=10) in the female sample and 33.3% (n=10) and 16.7% (n=5) in the male sample; in 33.3% (n=20) of the total sample, possible psychiatric disorders were identified; and the predominant personality trait was agreeableness, with 100% (n=30) in the male sample and 83.3% (n=25) in the female sample. The findings refute the initial hypothesis,

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based on the current literature, that patients with neuroticism traits could have higher scores for mood disorders and/or psychiatric disorders (neurotic or psychotic). The study reveals the importance of considering the emotional impacts associated with cancer diagnosis and treatment, considering that anxious, depressive and psychiatric symptoms are associated with personality traits. Consequently, this emotional impact influences the way each individual experiences the process of illness and treatment.

Keywords: Psychology. Oncology. Mental Disorders.

RESUMO

O tratamento oncológico promove alterações na vida do paciente, e apesar de ser importante, pode estar associado a risco para o desenvolvimento de transtornos psicológicos e psiquiátricos. O presente estudo teve como objetivo identificar sintomas de ansiedade e depressão, transtornos psiquiátricos (neuróticos e psicóticos) e fatores de personalidade em pacientes com câncer de mama e de próstata. Para coleta de dados foram utilizados: questionário sociodemográfico, Escala Hospitalar de Ansiedade e Depressão (HAD), Inventário dos Cinco Grandes Fatores (BIF2), e Self Report Questionnaire. Participaram da pesquisa 60 pacientes oncológicos, sendo 50% do sexo feminino e com diagnóstico de câncer de mama e 50% do sexo masculino e com diagnóstico de câncer de próstata. Os dados foram analisados por meio de estatística descritiva e análise de correlação de Spearman. Foram identificados possíveis e prováveis sintomas ansiosos e depressivos, respectivamente em 36,7% (n=11) e 33,3% (n=10) na amostra feminina e 33,3% (n=10) e 16,7% (n=5) na amostra masculina; em 33,3% (n=20) da amostra total foram identificados possíveis distúrbios psiquiátricos; e o traço de personalidade predominante foi à amabilidade, com 100% (n=30) na amostra masculina e 83,3% (n=25) na amostra feminina. Os achados refutam a hipótese inicial, baseada na literatura vigente, de que pacientes com traços de neuroticismo poderiam apresentar maiores escores de transtornos de humor e/ou distúrbios psiquiátricos (neuróticos ou psicóticos). O estudo revela a importância de considerar os impactos emocionais associados ao diagnóstico e tratamento oncológico, considerando que as sintomatologias ansiosas, depressivas e psiquiátricas, estão associadas aos traços de personalidade. Consequentemente, esse impacto emocional influencia na forma com que cada indivíduo experimenta o processo de adoecimento e de tratamento.

Palavras-chave: Psicologia. Oncologia. Transtornos Mentais.

RESUMEN

El tratamiento oncológico provoca cambios en la vida del paciente y, aunque esto es importante, puede asociarse a un riesgo de desarrollar trastornos psicológicos y psiquiátricos. El objetivo de este estudio fue identificar síntomas de ansiedad y depresión, trastornos psiquiátricos (neuróticos y psicóticos) y factores de personalidad en pacientes con cáncer de mama y próstata. Para la recogida de datos se utilizaron: cuestionario sociodemográfico, Escala Hospitalaria de Ansiedad y Depresión (HAD), Inventario de los Cinco Grandes Factores (BIF2) y Cuestionario de Autoinforme. Participaron en el estudio 60 pacientes oncológicos, de los cuales el 50% eran mujeres diagnosticadas de cáncer de mama y el 50% hombres diagnosticados de cáncer de próstata. Los datos se analizaron mediante estadística descriptiva y análisis de correlación de Spearman. Se identificaron posibles y probables síntomas ansiosos y depresivos, respectivamente, en el 36,7% (n=11) y el 33,3% (n=10) de la muestra femenina y el 33,3% (n=10) y el 16,7% (n=5) de la muestra masculina; se identificaron posibles trastornos psiquiátricos en el 33,3% (n=20) de la muestra total; y el rasgo de personalidad predominante fue la amabilidad, con un 100% (n=30) en la muestra masculina y un 83,3% (n=25) en la muestra femenina. Los hallazgos refutan la hipótesis inicial, basada en la literatura actual, de que los pacientes con rasgos

de neuroticismo podrían tener puntuaciones más altas en trastornos del estado de ánimo y/o trastornos psiquiátricos (neuróticos o psicóticos). El estudio revela la importancia de considerar los impactos emocionales asociados al diagnóstico y tratamiento del cáncer, teniendo en cuenta que los síntomas ansiosos, depresivos y psiquiátricos están asociados a rasgos de personalidad. En consecuencia, este impacto emocional influye en la forma en que cada individuo experimenta la enfermedad y el proceso de tratamiento.

Palabras clave: Psicología. Oncología. Trastornos Mentales.

INTRODUCTION

The disordered growth of cells promotes the appearance of cancer, which can be classified into more than a hundred subtypes. Due to rapid cell division, these cells become aggressive and can spread to specific organs or other regions of the body, forming metastases (INSTITUTO NACIONAL DO CÂNCER [INCA], 2020).

According to data from INCA (2022), in Brazil, the most common type of cancer in males is prostate cancer and breast cancer in females. It is noteworthy that there are worrying notes regarding the incidence of cancer, with 704 thousand new cases of cancer expected for the 2023-2025 triennium. Breast and prostate cancer occurred in 73 thousand and 71 thousand new cases, respectively in 2023 (INCA, 2023).

Oncological treatment considers the stage of the tumor, its location and especially the health conditions of each patient (MINISTRY OF HEALTH, 2013). Among the most common treatments are surgery, radiotherapy and chemotherapy. Regardless of the treatment defined, it is known that interference occurs in the patient's life, including the possibility of emotional imbalance, mainly due to the fact that the disease is conceived as life-threatening, full of stigmas and changes, such as loss of functionality and autonomy, side effects of treatment, and invasive procedures (SILVA & ROLIM, 2021; SILVEIRA et al., 2021).

Psychic disorganization, internal conflicts, and the patient's suffering due to the stressful aspects of cancer treatment are risk factors for the development of psychological disorders and mental disorders (SILVA & ROLIM, 2021; SILVA et al., 2016). Cancer patients are at higher risk of developing mental disorders, the most frequent being anxiety, depression, stress, and suicidal ideation. The presence of these symptoms may be associated with the occurrence of worsening of the patient's clinical condition, poor prognosis, changes in routine, exposure to the hospital environment, including invasive medical procedures, and processes related to finitude (MUÑOZ et al., 2022).

There is research that indicates that the emotional impact of the diagnosis is intrinsically linked to personality characteristics. The first studies on personality began in two different theoretical approaches, namely Experimental Psychology and Psychoanalysis. However, it was only in the 1930s that investigations on the subject were formalized by Allport (SCHULTZ, 2015).

Currently, studies on the subject indicate the Big Five Personality Factors (CGF) model as one of the most appropriate to evaluate the personality construct, as it considers personality traits to understand lasting patterns of thoughts, feelings, and actions (PASSOS & LAROS, 2014; SOTO & JOHN, 2017). The factors that make up the CGF model are

Neuroticism, Agreeableness, Conscientiousness, Openness to Experience and Extraversion (PASSOS & LAROS, 2014).

Neuroticism refers to people who experience emotional states in a negative way, so they are more likely to develop symptoms of anxiety or depression. Kindness is related to those who have quality interpersonal relationships, characterized by being pleasant, harmonious and friendly. The conscientiousness trait, on the other hand, typifies individuals who are determined, focused on goals, who follow norms and control their impulses, seeking to achieve their goals through consistent actions, while openness to experience encompasses those who are interested in exploring new environments, acquiring new knowledge and innovative ideas, being more curious, liberal, imaginative and intellectual. Finally, extroversion describes people who have a high facility in interacting with others, exposing their ideas, being motivating and affectionate, thus easily creating bonds of friendship (PASSOS & LAROS, 2014).

Based on the Five Major Personality Factors (CGF) model, in a study carried out with breast cancer patients, it was identified that the neuroticism factor and the conscientiousness factor were conceptually related to retroflexion, as they consist of personality patterns characteristic of people with emotional instability, predisposition to negative affects, tension, psychosomatic diseases, impulse control, sense of duty and discipline, respectively (FREITAS et al., 2018).

In a study carried out with patients with breast and prostate cancer, it was evaluated whether personality dimensions, based on the CGF model, were associated with health behaviors. It was concluded that the greater the conscientiousness and the lower the neuroticism, the better the health behaviors, including greater physical exercise, more adequate diet, less substance use, and safer sexual behaviors (ROCHEFORT et al., 2019).

Although the CGF model is consolidated in the literature, few studies on personality and cancer have been carried out, mainly due to the multiple factors and conditions that can be related to oncological illness, there are still no conclusive results on its etiology (FREITAS et al., 2018). However, it has already been identified that psychological factors could be associated with the genesis of the disease, especially taking into account individuals with a predominance of the neuroticism factor, which is related to a greater propensity to develop emotional symptoms (PERES & SANTOS, 2009).

The importance of conducting research with this population is reinforced, due to the presence of limited studies on this theme, as well as in view of the worrying prospects of an increase in cancer cases each year. It is necessary to reflect on the demands for

psychological care, as well as the need to establish intervention protocols aimed at illness and personality traits, which could thus improve outcomes and reduce health costs.

In view of the above, the objectives of the present research were to identify and correlate symptoms of anxiety, depression, psychiatric disorders (neurotic and psychotic) and personality factors in patients with breast and prostate cancer during cancer treatment. Patients with traits of neuroticism were expected to have higher scores for mood disorders and/or psychiatric disorders (neurotic and psychotic).

METHODOLOGY

STUDY DESIGN AND LOCATION

This research is a cross-sectional, descriptive, exploratory study with a quantitative design. Data collection was carried out at a Teaching Hospital located in the interior of São Paulo, in the oncology sector. The participants were approached at the Clinical Oncology Outpatient Clinic, in the hospitalization of the Clinical Oncology and Chemotherapy Ward, previously randomly selected via electronic medical records, according to the inclusion and exclusion criteria.

PARTICIPANTS

A total of 60 cancer patients participated in the research, 50% (n=30) of whom were female and diagnosed with breast cancer, and 50% (n=30) were male and diagnosed with prostate cancer.

INCLUSION AND EXCLUSION CRITERIA

Patients with breast or prostate cancer, aged 18 years or older, with an income between 1 and 5 minimum wages, and who had been undergoing treatment for at least three months at a Teaching Hospital located in the interior of São Paulo. As exclusion criteria, it was listed that patients who had hearing and intellectual disabilities, neurodegenerative diseases and severe psychological disorders had their participation in the research made unfeasible.

INSTRUMENTS

Sociodemographic Questionnaire. Prepared by the authors, with the objective of collecting information related to age, sex, marital status, family income, education, diagnosis, oncological treatments performed, psychological and/or psychiatric follow-up previously performed, medications of continuous use, use of alcohol or tobacco.

Hospital Anxiety and Depression Scale (HAD). Instrument validated for the Brazilian population by Botega et al. (1995). The Scale consists of 14 items, subdivided into two subscales, of which seven items measure anxiety (HAD-A) and seven measure depression (HAD-D). Each of the items is scored from 0 to 3, making a maximum total of 21 points for each subscale. In both subscales, values from 0 to 7 indicated the absence of anxiety or depression, between 8 and 10 indicated possible cases of anxiety or depression, and equal to or greater than 11 indicated probable cases of anxiety or depression (ZIGMOND & SNAITH, 1983). In the study by Faro (2015), confirmatory analyses showed *Cronbach*'s alpha of 0.813 for the general scale, 0.702 for the anxiety subscale and 0.695 for depression.

Big Five Factor Inventory (Short Form BIF2; SOTO & JOHN, 2017). Inventory composed of 30 items, which assess the five personality factors, namely: openness to experience, conscientiousness, extroversion, agreeableness and neuroticism. The items are arranged on a five-point Likert scale, with 1 "has nothing to do with me" and 5 "has everything to do with me". No Brazilian studies were found that verified the psychometric properties of the Brazilian version of the instrument, but the authors of the instrument showed data that indicate the adequacy of the original version of the test, with internal consistency with α = 0.69 for openness; α = 0.62 for agreeableness; α = 0.79 for conscientiousness; α = 0.76 for extraversion; and α = 0.79 for neuroticism (SOTO & JOHN, 2017).

Self Report Questionnaire (SRQ; HARDING et al., 1980). Questionnaire for the identification of psychiatric disorders at the primary care level, validated in Brazil by Mari and Willians (1986). It consists of 24 questions subdivided into two sections: 20 questions designed for the detection of neurotic disorders, and four questions for the detection of psychotic disorders. To be considered a disorder, the respondent needs to score seven or more points on the subscale of neurotic symptoms, and one or more points on the subscale of psychotic symptoms (SMAIRA, 1999).

ETHICAL ASPECTS

The research was submitted to and approved by the Research Ethics Committee (CAEE: 63200022.5.0000.5415). All research participants were instructed about the objectives of the study and signed the Informed Consent Form (ICF), according to CNS resolution no. 466/2012.

PROCEDURES

Potential patients who met the inclusion criteria were approached in person and individually, after random selection via electronic medical records, in the waiting room for medical or multidisciplinary care at the Cancer Institute, Chemotherapy Sector or during the hospitalization period in the Oncology Ward. Afterwards, the objectives of the study were presented and the invitation to participate was made. Upon acceptance, the participants filled out the Informed Consent Form and answered the instruments described in a reserved and protected space.

DATA ANALYSIS

The data were analyzed using descriptive statistics, and for the presentation of clinical and sociodemographic results, Spearman's correlation analysis was also used, considering $p < 0.05$ as significant.

RESULTS

The sample consisted of 50% (n=30) of women with breast cancer and 50% (n=30) of men with prostate cancer. The mean age of the participants was 61.8 years (SD=11.1), with a minimum age of 33 years and a maximum of 84 years. It should be noted that some percentage data refer to the total sample (n=60) and others to subsamples, from the breast cancer group (n=30) and the prostate cancer group (n=30). All information on the sample characteristics is presented in Table 1.

Table 1 - Characterization of the sample

Marital status		
	n	***%***
Single	8	13,40%
Married	36	60,00%
Divorced	10	16,60%
Widower	6	10,00%
Color/Race		
White	32	53,30%
Black	5	8,50%
Yellow	1	1,60%
Brown	21	35,00%
Indigenous	1	1,60%
Schooling		
Illiterate	2	3,30%
Complete Elementary School	1	1,70%
Incomplete Elementary School	32	53,30%

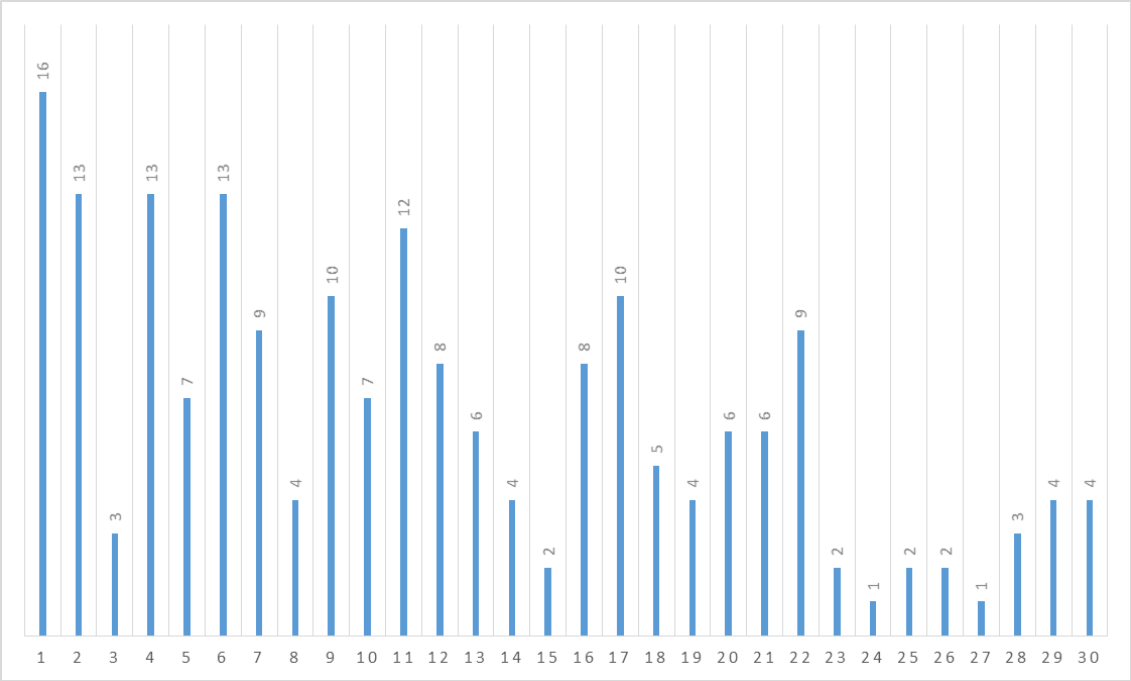
Complete High School	13	21,70%
Incomplete High School	4	6,70%
Complete Higher Education	5	8,30%
Incomplete Higher Education	1	1,70%
Postgraduate studies	2	3,30%
Income		
1 to 3 salaries	50	83,30%
3 to 5 salaries	9	15,00%
Greater than 5 salaries	1	1,70%
Treatments performed		
Surgery	27	45,00%
Chemotherapy	41	68,30%
Radiotherapy	29	48,30%
Hormone therapy	41	68,33%
Immunotherapy	1	1,60%
Psychological support		
Male	4	13,30%
Female	10	33,30%
Psychiatric follow-up		
Male	0	0%
Female	2	6,60%
Use of psychotropic drugs		
Male	8	26,60%
Female	10	33,30%
Alcohol use		
Male	18	60%
Female	9	30%
Tobacco use		
Male	15	50%
Female	9	30%

Source: The authors.

Table 1 shows that most participants were married (60%), white (53.30%), with incomplete elementary education (53.30%) and had a monthly income between 1 and 3 minimum wages (83.30%). Among those evaluated, 23,33% had already undergone psychological follow-up and 6.60% psychiatric follow-up. On the other hand, 30% of the participants had already used psychotropic medication. Among the predominant treatments, chemotherapy (68.30%) and hormone therapy (68,33%) stood out, with a mean treatment time of 28.8 months (SD=29.8).

Regarding the assessment of anxiety and depression symptoms, the results for the anxiety symptoms of the participants with breast cancer are shown in Figure 1, and for the patients with prostate cancer are shown in Figure 2.

Figure 1 - Anxiety symptoms in women with breast cancer

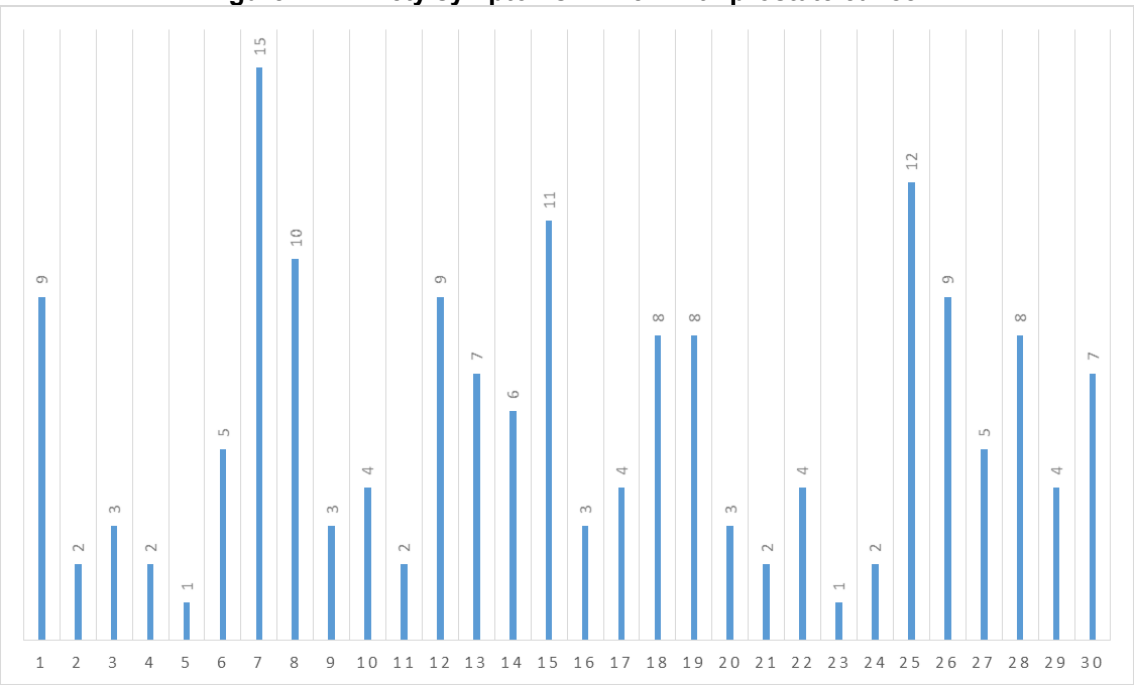


Source: The authors.

Figure 1 shows that 20% (n=6) of the participants had possible symptoms of anxiety and 16.7% (n=5) had probable symptoms of anxiety. Thus, 36.7% (n=11) of the participants demonstrated a risk of developing anxiety disorder. The mean age of the patients with possible anxiety symptoms was 59 years (SD=10.5), and of the patients with probable symptoms was 62.2 years (SD=10.2).

Among patients with possible and probable symptoms of anxiety (n=11), 36.3% (n=4) had already used or were using psychotropic drugs, 27.2% (n=3) were receiving psychological treatment, and 18.1% (n=2) were receiving psychiatric treatment.

Figure 2 - Anxiety symptoms in men with prostate cancer



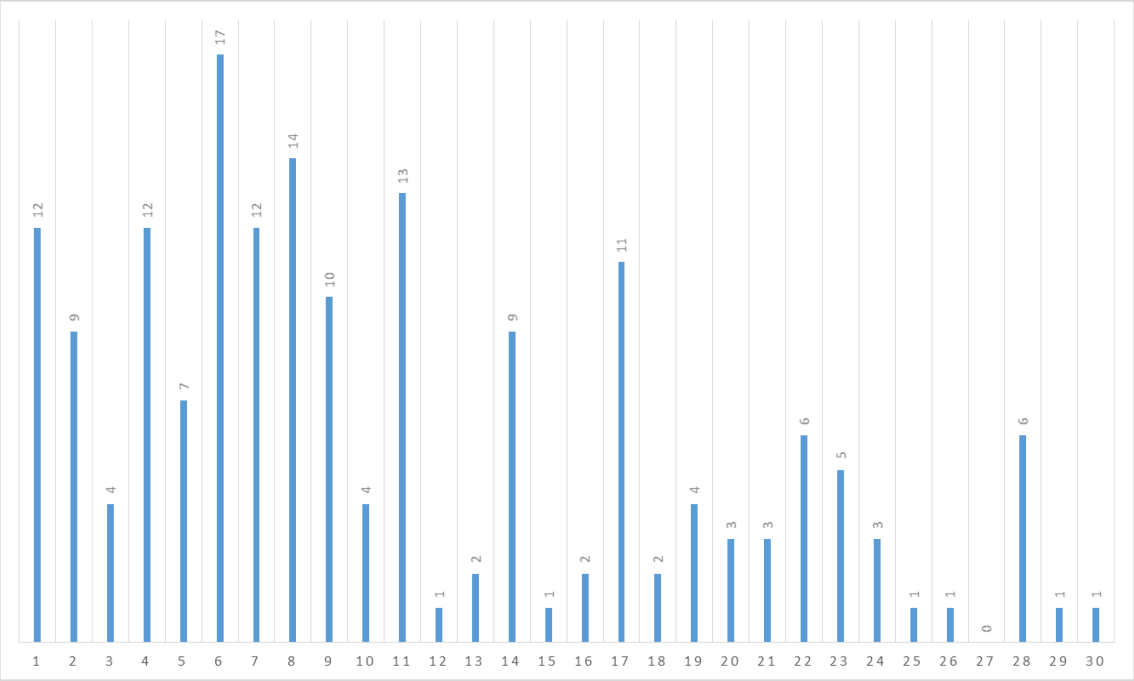
Source: The authors.

Figure 2 shows that 23.3% (n=7) of the male participants with prostate cancer had possible symptoms of anxiety, and 10% (n=3) had probable symptoms of anxiety. Thus, 33.3% (n=10) of those evaluated in this group demonstrate risk for developing anxiety disorder. The mean age of patients with possible anxiety symptoms was 63.1 years (SD=4.9), and of patients with probable symptoms was 67.3 years (SD=2.1).

Among patients with possible and probable symptoms of anxiety (n=10), 40% (n=4) had used or were using psychotropic drugs, 30% (n=3) had received or were receiving psychological treatment, and none of them had received or were receiving psychiatric treatment.

In addition to measuring anxiety symptoms, symptoms for depression were evaluated for both samples. Information on the symptoms of depression is shown in Figure 3 for patients with breast cancer, and in Figure 4 for patients with prostate cancer.

Figure 3 - Symptoms of depression in women with breast cancer.

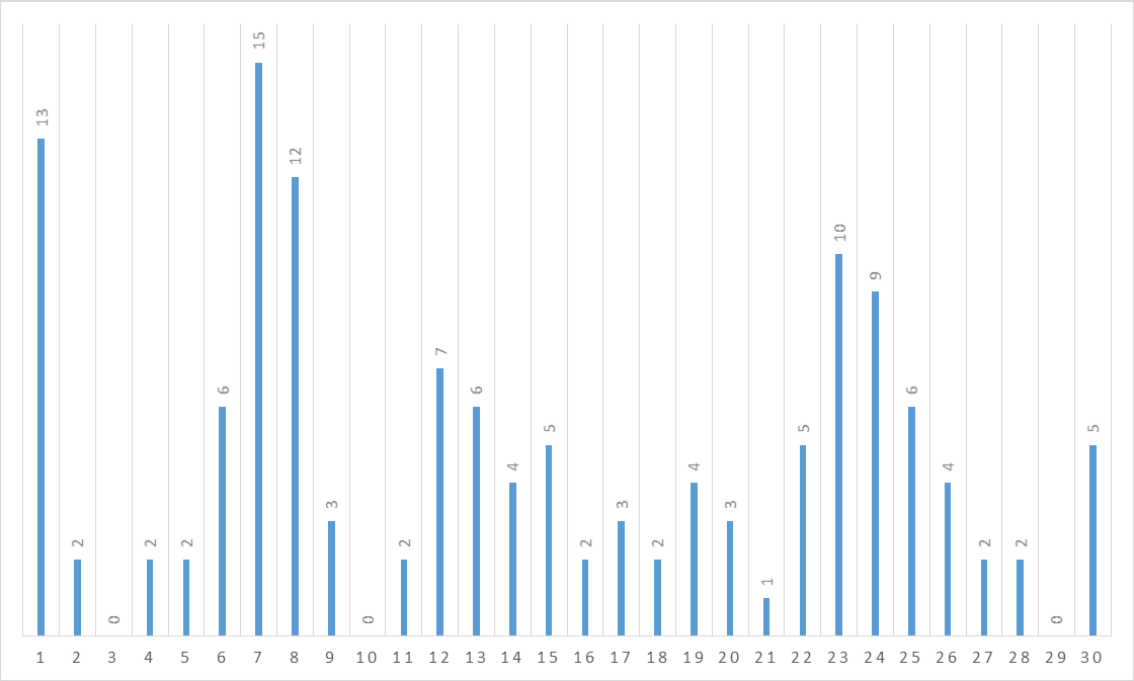


Source: The authors.

Figure 3 shows that 10% (n=3) of the participants had possible symptoms of depression and 23.3% (n=7) had probable symptoms of depression. Thus, 33.3% (n=10) demonstrate risk for developing depressive disorder. The mean age of the patients with possible symptoms of depression was 61 years (SD=7.9) and of the patients with probable symptoms was 61.5 years (SD=9.7).

Among the patients with possible and probable symptoms of depression (n=10), 40% (n=4) had already used or were using psychotropic drugs, 40% (n=4) had already received or were receiving psychological treatment, and 20% (n=2) had already received or were receiving psychiatric treatment. It is noteworthy that 13.3% (n=4) presented symptoms that demonstrated probable anxiety and depressive conditions.

Figure 4 - Symptoms of depression in men with prostate cancer.



Source: The authors.

Figure 4 shows that 6.6% (n=2) of the participants with prostate cancer had possible symptoms of depression and 10% (n=3) had probable symptoms of depression. Thus, 16.7% (n=5) demonstrate risk for developing depressive disorder. The mean age of patients with possible symptoms of depression was 67 years (SD=5.7) and the mean age of probable symptoms was 66.5 years (SD=2.1).

Among patients with possible and probable symptoms of depression (n=5), 80% (n=4) had already used or were using psychotropic drugs, and 40% (n=2) had already received or were receiving psychological treatment. Notably, 6.6% (n=2) presented symptoms that demonstrated probable anxiety and depressive conditions.

In addition to the analysis of anxiety and depression symptoms, Spearman's correlation was performed to identify the relationship between illness, anxiety symptoms, depression and personality factors. The information is shown in Table 2.

It is noteworthy that of the total number of study participants, 33.3% (n=20) had psychiatric disorders (neurotic and psychotic) and among the personality traits, the most predominant in patients with prostate cancer was agreeableness (100%; n=30), and in patients with breast cancer they were agreeableness in 83.3% (n=25), followed by conscientiousness trait in 16.6% (n=5) of the sample.

Table 2 - Spearman's correlation

Variável		Mama	Próstata	A	D	QT	RT	H	1	2	3	4	5	6	7	8	9	10	11	12	13
Mama	*r*	—																			
	p	—																			
Próstata	*r*	-1,000	—																		
	p	< ,001	—																		
Ansiedade (A)	*r*	0,097	-0,097	—																	
	p	0,462	0,462	—																	
Depressão (D)	*r*	0,097	-0,097	0,578	—																
	p	0,462	0,462	< ,001	—																
Quimioterapia (QT)	*r*	0,609	-0,609	-0,015	0,101	—															
	p	< ,001	< ,001	0,912	0,443	—															
Radioterapia (RT)	*r*	-0,233	0,233	-0,180	-0,148	-0,130	—														
	p	0,073	0,073	0,169	0,259	0,321	—														
Hormonioterapia (H)	*r*	-0,707	0,707	-0,170	-0,192	-0,481	0,401	—													
	p	< ,001	< ,001	0,193	0,142	< ,001	0,002	—													
Abertura (1)	*r*	-0,121	0,121	-0,222	-0,177	0,125	-0,100	0,093	—												
	p	0,359	0,359	0,088	0,177	0,339	0,445	0,479	—												
Conscienciosidade (2)	*r*	0,132	-0,132	-0,417	-0,524	0,057	-0,110	-0,126	0,094	—											
	p	0,316	0,316	< ,001	< ,001	0,664	0,401	0,336	0,473	—											
Extroversão (3)	*r*	-0,105	0,105	-0,366	-0,588	-0,035	-0,098	0,239	0,480	0,472	—										
	p	0,424	0,424	0,004	< ,001	0,789	0,454	0,066	< ,001	< ,001	—										
Amabilidade (4)	*r*	-0,025	0,025	-0,285	-0,379	0,075	-0,066	0,175	0,163	0,301	0,278	—									
	p	0,849	0,849	0,027	0,003	0,570	0,617	0,180	0,213	0,020	0,032	—									
Neuroticismo (5)	*r*	0,157	-0,157	0,618	0,502	0,004	-0,206	-0,193	-0,240	-0,401	-0,386	-0,365	—								
	p	0,230	0,230	< ,001	< ,001	0,975	0,115	0,141	0,064	0,001	0,002	0,004	—								
Sexo (6)	*r*	1,000	-1,000	0,097	0,097	0,609	-0,233	-0,707	-0,121	0,132	-0,105	-0,025	0,157	—							
	p	< ,001	< ,001	0,462	0,462	< ,001	0,073	< ,001	0,359	0,316	0,424	0,849	0,230	—							
Neuróticos (7)	*r*	-0,008	0,008	0,473	0,650	0,022	0,146	0,109	-0,297	-0,373	-0,420	-0,300	0,424	-0,008	—						
	p	0,953	0,953	< ,001	< ,001	0,869	0,265	0,408	0,021	0,003	< ,001	0,020	< ,001	0,953	—						
Psicóticos (8)	*r*	0,107	-0,107	0,198	0,127	0,191	-0,022	-0,124	0,115	0,119	-0,083	-0,010	0,110	0,107	0,187	—					
	p	0,417	0,417	0,130	0,333	0,144	0,870	0,345	0,381	0,364	0,530	0,942	0,402	0,417	0,153	—					
Psicologia (9)		0,236	-0,236	0,144	0,317	0,206	-0,218	-0,111	0,019	0,070	-0,099	0,021	0,177	0,236	0,200	0,359	—				
	p	0,069	0,069	0,272	0,014	0,114	0,094	0,397	0,883	0,596	0,451	0,876	0,176	0,069	0,125	0,005	—				
Psiquiatria (10)	*r*	0,186	-0,186	0,253	0,235	0,126	0,006	-0,066	-0,094	-0,245	-0,188	-0,180	0,226	0,186	0,164	0,292	0,337	—			
	p	0,155	0,155	0,051	0,071	0,336	0,963	0,618	0,475	0,059	0,150	0,168	0,083	0,155	0,210	0,024	0,009	—			
Medicamento (11)	*r*	0,073	-0,073	0,113	0,276	0,133	-0,124	-0,077	-0,048	-0,010	-0,249	0,129	0,327	0,073	0,110	0,190	0,413	0,081	—		
	p	0,581	0,581	0,390	0,033	0,311	0,346	0,558	0,713	0,943	0,056	0,327	0,011	0,581	0,404	0,145	0,001	0,538	—		
Álcool (12)	*r*	-0,302	0,302	0,042	0,082	-0,104	-0,003	0,355	0,077	-0,052	0,011	0,024	0,152	-0,302	0,229	0,058	0,135	0,205	-0,080	—	
	p	0,019	0,019	0,751	0,535	0,427	0,980	0,005	0,561	0,696	0,936	0,854	0,245	0,019	0,078	0,661	0,305	0,116	0,541	—	
Tabaco (13)	*r*	-0,204	0,204	-0,085	0,065	-0,102	-0,041	0,217	-0,847	-0,057	0,184	-0,021	-0,134	-0,204	0,055	-0,142	-0,048	0,038	-0,238	0,356	—
	p	0,118	0,118	0,519	0,621	0,436	0,757	0,097	0,994	0,664	0,159	0,875	0,307	0,118	0,675	0,278	0,714	0,774	0,068	0,005	—

Source: The authors.

Table 2 shows that gender has a positive correlation with the diagnosis of breast cancer (r=1.000; p<0.001) and chemotherapy (r=0.609; p<0.001); and negative correlations with the diagnosis of prostate cancer (r-1.000; p<0.001), hormone therapy (r-0.707; p<0.001), treatment time (r-0, 348; p=0.006) and alcohol use (r-0.302; p=0.02). Patients diagnosed with prostate cancer showed positive correlations with hormone therapy (r=0.707; p<0.001), treatment time (r=0.348; p=0.006) and alcohol use (r=0.302; p=0.02); and negative correlation with chemotherapy (r-=0.609; p<0.001) and gender (r-=1.000; p=<0.001).

The use of psychotropic drugs showed positive correlations with the personality factor neuroticism (r=0.327; p=0.011) and psychological follow-up (r=0.413; p=0.001); and negative correlations with the extraversion factor (r-0.249; p=0.056). In addition, alcohol use showed positive correlations with the diagnosis of prostate cancer (r=0.302; p=0.02), hormone therapy (r=0.355; p=0.01) and tobacco use (r=0.356; p=0.005); and negative correlations with the diagnosis of breast cancer (r-0.302; p=0.02).

Anxiety symptoms showed positive correlations with depressive symptoms (r=0.578; p<0.001), psychiatric follow-up (r=0.253; p=0.05), personality factor neuroticism (r=0.618; p<0.001) and neurotic disorders (r=0.473; p<0.001). In addition, anxiety symptoms showed negative correlations with the personality factors conscientiousness (r-0.417; p<0.001), extraversion (r-0.366; p=0.004) and agreeableness (r-0.285; p=0.027).

Depressive symptoms showed positive correlations with psychological follow-up (r=0.317; p=0.01), use of psychotropic drugs (r=0.276; p=0.03), personality factors, neuroticism (r=0.502; p=<0.001) and neurotic disorders (r=0.65; p=<0.001). Depressive

symptoms showed negative correlations with the personality factors conscientiousness (r-0.524; p<0.001), extraversion (r-0.588; p<0.001) and agreeableness (r-0.379; p=0.003).

Among the personality factors, neuroticism showed negative correlations with all other personality factors, being conscientiousness (r-0.401; p=0.001), extraversion (r-0.386, p=0.002) and agreeableness (r-0.365; p=0.004). The openness to experience factor showed a positive correlation with the extraversion factor (r=0.48; p<0.001); The extraversion factor showed a positive correlation with conscientiousness (r=0.472; p=<0.001); and the agreeableness factor showed positive correlations with openness to experience (r=0.163; p=<0.001) and conscientiousness (r=0.472; p=< 0.001).

Neurotic disorders showed positive correlations with the factor neuroticism (r=0.424; p<0.001); and negative correlations with the factors of openness to experience (r-0.297; p=0.021), conscientiousness (r-0.373; p=0.003), extraversion (r-0.42; p=<0.001), agreeableness (r-0.3; p=0.02). Psychotic disorders showed positive correlations with psychological follow-up (r=0.359; p=0.005) and psychiatric follow-up (r=0.292; p=0.02).

DISCUSSION

The overall results of the present study show that 36.7% (n=11) of the patients with breast cancer had possible or probable symptoms of anxiety and 33.3% (n=10) had possible or probable symptoms of depression. Among patients with prostate cancer, 33.3% (n=10) were possible or probable symptoms of anxiety and 16.7% (n=5) were possible or probable symptoms of depression. In addition, possible psychiatric disorders were identified in 33.3% (n=20) of the sample.

The symptoms of anxiety and depression often reflect the psychological suffering associated with the diagnosis, treatment, and side effects of the oncological illness process (SILVEIRA et al., 2021; SILVA & ROLIM, 2021; MUÑOZ et al., 2022). In the present study, it was identified that 35% (n=21) of the general sample had possible or probable anxiety and 25% (n=15) had possible or probable depression.

In studies carried out with cancer patients, a prevalence of moderate to severe anxiety was identified in 33.7%, and moderate to severe depression in 13.4% (n=246). In addition, women had more symptoms of depression (30%; n=155), especially women aged between 40 and 60 years (SEEMANN et al., 2018; FERREIRA et al., 2019; SILVA et al., 2021). In the present study, it was possible to observe a higher prevalence of possible or probable symptoms of anxiety (36.7%; n=11) in women, compared to the male sample (33.3%; n=10), as well as for possible or probable symptoms of depression, being 33.3% (n=10) in the female sample and 16.7% (n=5) in the male sample. It is also noteworthy that,

in male patients, the mean age of patients with possible or probable depressive symptoms was 67 years (SD=5.7), corroborating the data described in the research by Seemann et al. (2018).

Although the data indicate possible and probable anxious (35%) and depressive (25%) symptoms in an important part of the total sample, 23% (n=14) of the participants were or had been under psychological follow-up and 3.4% (n= 2) were or had been under psychiatric follow-up. However, 30% (n=18) had already used or used psychotropic drugs, which points to the possible presence of emotional symptoms, managed only with medication prescribed by health professionals who are not specialists in mental health. This data corroborates the study by Torres et al. (2014), who, when analyzing 1570 medical prescriptions for psychotropic drugs, identified that only 7.10% of these prescriptions had been prescribed by psychiatrists, which raises questions regarding the abusive consumption of psychotropic drugs, as well as the need for specialized evaluation of symptoms related to mental health.

Based on the incidence of anxious and depressive symptoms, it can be stated that cancer illness promotes emotional impacts, but each individual experiences this impact individually, based on the predominant personality factors in each one. Currently, the Big Five Factors (CGF) model is the main reference for understanding this phenomenon (PASSOS & LAROS, 2014; FREITAS et al., 2018).

Research data in Psycho-oncology demonstrate a relationship between breast cancer and neuroticism. Neuroticism is pointed out as a personality characteristic with a greater propensity for *distress,* as it increases susceptibility to constant tension, nervousness, apprehensive expectation, unhappiness, and anhedonia. Thus, it can precipitate the outbreak of clinically significant symptoms of anxiety, depression, and post-traumatic stress disorder. In addition, neuroticism is associated with a sedentary lifestyle and chronic fatigue (PASSOS & LAROS, 2014).

In the present study, the predominant personality trait in patients with prostate cancer was agreeableness (100%; n=30), and in patients with breast cancer, traits of agreeableness were observed in 83.3% (n=25), followed by conscientiousness trait in 16.6% (n=5) of the sample. In a study carried out in a comparison of people without and with cancer, they analyzed whether personality factors were associated with health behaviors. It was observed that the higher the conscientiousness and the lower the neuroticism, the better the health behaviors in both groups (CARVALHO et al., 2015).

Taking into account that personality traits can contribute to health behaviors, it was found that neuroticism traits can negatively influence the intentions to perform preventive

exams for prostate cancer (NEEME, 2012), on the contrary, the trait of openness to experience was identified as a predictor for performing preventive exams (NOLAN et al., 2019), as well as kindness and conscientiousness (FAKARI et al., 2020). Neuroticism was also associated with increased risk for breast cancer (WOJCIECHOWSKA et al., 2022) and related to lower survival rate, greater mental distress, and worsening quality of life (DAHL, 2010; COKER et al., 2020). It was negatively associated with life satisfaction, as opposed to traits of agreeableness and extroversion (KANG et al., 2023). Neuroticism showed positive correlations with symptoms of anxiety (BOVERO et al., 2020) and depression, and openness to experience, agreeableness, and extroversion showed negative correlations with depressive symptoms (AMIRI et al., 2018). In other words, having the neuroticism personality trait may indicate a greater propensity for the development of symptoms of anxiety and depression.

Important associations between cancer and psychiatric disorders (67.1%; n=268) were identified in a study carried out with cancer patients (LIMA, 2014), as identified in the present study, and 33.3% (n=20) of the participants had psychiatric disorders (neurotic and psychotic). It should be noted that no other studies were found that discussed the prevalence of psychiatric disorders, including neurotic or psychotic symptoms in the general and oncological population.

CONCLUSION

The objectives of the present study were to identify and correlate the symptoms of anxiety and depression, psychiatric disorders and personality factors in patients with breast and prostate cancer during cancer treatment. It was identified that 35% (n=21) of the total sample symptoms for anxiety and 25% (n=15) symptoms for depression; 33.3% (n=20) were possible psychiatric disorders, 43.3% (n=26) were neurotic symptoms and 61.6% (n=37) were psychotic. The predominant personality trait in patients with prostate cancer was agreeableness (100%; n=30) and in breast cancer patients it was agreeableness (83.3%; n=25) and conscientiousness (16.6%; n=5). The findings refute the initial hypothesis, based on the current literature, that patients with neuroticism traits could have higher scores of mood disorders and/or psychiatric disorders (neurotic and psychotic), and so far due to the scarcity of prospective studies in the area, there is still difficulty in comparing the current study with the literature.

Thus, the results of the present study point to the importance of developing other investigations that cover the oncology population in a statistically representative way, that is, investigating which are the possible variables that can influence the specific

development of a certain personality trait, such as psychoemotional development, and also including studies with populations diagnosed with other types of cancers. especially in view of the high annual estimates.

The study reveals the importance of considering the emotional impacts associated with cancer diagnosis and treatment, considering that anxious, depressive and psychiatric symptoms are associated with personality traits. Consequently, this emotional impact influences the way each individual experiences the illness process.

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