








## QUALITY OF LIFE, SOCIAL SUPPORT, AND DEPRESSIVE SYMPTOMS AMONG MEN UNDERGOING ONCOLOGICAL FOLLOW-UP: A CROSS-SECTIONAL STUDY

QUALIDADE DE VIDA, APOIO SOCIAL E SINTOMAS DEPRESSIVOS DE HOMENS COM CÂNCER EM ACOMPANHAMENTO ONCOLÓGICO: ESTUDO TRANSVERSAL

CALIDAD DE VIDA, APOYO SOCIAL Y SÍNTOMAS DEPRESIVOS EN HOMBRES CON CÁNCER DURANTE EL SEGUIMIENTO ONCOLÓGICO: UN ESTUDIO TRANSVERSAL

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### ABSTRACT

**Objective:** to correlate social support and depressive symptoms with health-related quality of life among men undergoing oncological follow-up. **Method:** cross-sectional analytical study conducted in 2020 with 95 men diagnosed with cancer receiving oncological care at a reference hospital in southern Minas Gerais, interviewed using characterization instruments, European Organization for Research and Treatment Cancer Quality of Life Questionnaire Core 30, Medical Outcomes Study Social Support Scale, and Beck Depression Inventory. Data were analyzed using Spearman's correlation test. Study approval was obtained from an ethics committee. **Results:** predominance of older adults, married, incomplete elementary education, former smokers, and prostate cancer diagnosis was observed. In relation to quality of life, cognitive and social functions presented the highest means. Regarding social support, material support was the most perceived. According to Beck Depression Inventory, minimal intensity of depressive symptoms was found. **Conclusion:** positive correlation was observed between emotional/informational support domain and role functioning and negative correlation between emotional/informational support and fatigue. Positive social interaction correlated positively with role functioning and social function and negatively with fatigue and financial difficulty. Beck Depression Inventory showed positive correlation with dyspnea, appetite loss, fatigue, pain, insomnia, and financial difficulty and negative correlation with dimensions cognitive function, social function, emotional function, physical function, role functioning, and global health status/quality of life.

**Keywords:** Men's Health; Men; Neoplasms; Social Support; Quality of Life; Depression.

### RESUMO

**Objetivo:** correlacionar o apoio social e os sintomas depressivos à qualidade de vida relacionada à saúde de homens com câncer em acompanhamento oncológico. **Método:** estudo transversal e analítico, realizado em 2020, com 95 homens diagnosticados com câncer, em atendimento oncológico em um hospital de referência no Sul de Minas Gerais, entrevistados por meio dos instrumentos de caracterização, European Organization for Research and Treatment of Cancer Quality of Life Questionnaire Core 30, Medical Outcomes Study's Social Support Scale e Inventário de Depressão de Beck. Os dados foram analisados pelo teste de correlação de Spearman. O estudo foi aprovado por comitê de ética. **Resultados:** observou-se predomínio de idosos, casados, com ensino fundamental incompleto, ex-tabagistas e com diagnóstico de câncer de próstata. Em relação à qualidade de vida, as funções cognitiva e social apresentaram as maiores médias. Quanto ao apoio social, o apoio material foi o mais percebido. Pelo Inventário de Depressão de Beck, constatou-se intensidade mínima de sintomas depressivos. **Conclusão:** verificou-se correlação positiva entre o domínio apoio emocional/informação e o desempenho de papel e correlação negativa entre apoio emocional/informação e a fadiga. A interação social positiva correlacionou-se positivamente com o desempenho de papel e com a função social, e negativamente com a fadiga e a dificuldade financeira. No Inventário de Depressão de Beck, observou-se correlação positiva com dispnéia, perda de apetite, fadiga, dor, insônia e dificuldade financeira e correlação negativa com as dimensões função cognitiva, função social, função emocional, função física, desempenho de papel e estado de saúde global/qualidade de vida.

**Palavras-chave:** Saúde do Homem; Homens; Neoplasias; Apoio Social; Qualidade de Vida; Depressão.

### RESUMEN

**Objetivo:** correlacionar el apoyo social y los síntomas depresivos con la calidad de vida relacionada con la salud de hombres con cáncer en seguimiento oncológico. **Método:** estudio transversal y analítico realizado en 2020 con 95 hombres diagnosticados con cáncer, atendidos en un hospital de referencia en el sur de Minas Gerais. Los participantes fueron entrevistados mediante instrumentos de caracterización, el European Organization for Research and Treatment of Cancer Quality of Life Questionnaire Core 30, la Medical Outcomes Study's Social Support Scale y el Inventario de Depresión de Beck. Los datos fueron analizados utilizando la prueba de correlación de Spearman. El estudio fue aprobado por un comité de ética. **Resultados:** se observó un predominio de hombres mayores, casados, con educación primaria incompleta, exfumadores y con diagnóstico de cáncer de próstata. En cuanto a la calidad de vida, las funciones cognitiva y social presentaron las medias más altas. Respecto al apoyo social, el apoyo material fue el más percibido. Según el Inventario de Depresión de Beck, se constató una intensidad mínima de síntomas depresivos. **Conclusión:** se verificó una correlación positiva entre el dominio de apoyo emocional/información y el desempeño de rol, y una correlación negativa entre el apoyo emocional/información y la fatiga. La interacción social positiva se correlacionó positivamente con el desempeño de rol y con la función social, y negativamente

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*con la fatiga y la dificultad financiera. En el Inventario de Depresión de Beck, se observó una correlación positiva con disnea, pérdida de apetito, fatiga, dolor, insomnio y dificultad financiera, y una correlación negativa con las dimensiones de función cognitiva, función social, función emocional, función física, desempeño de rol y estado de salud global/calidad de vida.*

**Palabras clave:** Salud del Hombre; Hombres; Neoplasias; Apoyo Social; Calidad de Vida; Depresión.

## INTRODUCTION

Cancer is considered the second leading cause of premature death worldwide, with negative impacts on physical, social, and economic dimensions<sup>(1)</sup>. Within men's health, statistics indicate higher incidence and mortality rates among men compared to women, associated with lower male participation in cancer prevention campaigns and screening programs. Moreover, there is higher prevalence of modifiable risk factors such as smoking and alcohol consumption<sup>(1,2)</sup>.

Lung cancer is most frequent among men, followed by prostate, colon and rectal, nonmelanoma skin, and stomach cancers, considering the number of new cases annually<sup>(3)</sup>. In relation to age groups, older men show lower survival rates, attributed to reduced treatment tolerance due to age, diagnosis at more advanced stages, and limited access to health services<sup>(2,4)</sup>.

Men with cancer, when facing illness experience, manifest feelings of denial, anger, sadness, fear, and distress, in addition to confronting challenges related to a new lifestyle characterized by changes in social and work life, which negatively impacts their quality of life. In this context, social support becomes a necessity, highlighting the importance of family, friends, and health professionals for disease control and coping<sup>(5)</sup>.

Literature shows that men with prostate cancer who develop depression have a 50% higher risk of death compared to those without depression<sup>(6)</sup>. Furthermore, for this cancer type, unmet needs and intestinal, urinary, and sexual symptoms related to therapy contribute to reduced quality of life during the first years after diagnosis<sup>(7)</sup>.

Similar impacts on quality of life for men and women with lung cancer were observed, contradicting other studies indicating a greater impact on the female population<sup>(8)</sup>. One study points to the association between cancer and depressive symptoms, suggesting that, beyond physical aspects, cancer compromises mental health, with informal social ties and higher engagement in social activities contributing to mitigating the cancer's negative psychological consequences<sup>(9)</sup>.

Thus, it is understood that social support is essential for the adaptation of people with cancer to their new reality, and the absence of such support may be related to

the emergence of depressive symptoms and worsening quality of life. Therefore, this study aims to answer the following question: is there a relationship among quality of life, social support, and depressive symptoms in men with cancer?

For this purpose, the objective of this study is to correlate social support and depressive symptoms to the health-related quality of life of men with cancer undergoing oncological monitoring.

## METHOD

This is a cross-sectional, analytical study conducted at an outpatient clinic of a philanthropic hospital, a reference for high-complexity oncological care serving 26 municipalities in the southern region of Minas Gerais, carried out between March 2019 and January 2020. The present study followed the guidelines of the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) initiative.

The sample consisted of 95 men diagnosed with cancer, aged 18 years or older, residing in municipalities belonging to the Alfenas-Machado and Alfenas-Guaxupé macrorregions, in the State of Minas Gerais. A non-probabilistic convenience sampling technique was employed, without losses among the invited participants. The sample power calculation was based on a previous study on quality of life in men after prostatectomy, which determined correlation coefficients around 0.30, using  $\alpha = 0.05$  and  $\beta = 0.20$ , resulting in a minimum number of 85 participants<sup>(10)</sup>.

Participants were undergoing oncological monitoring at a reference hospital for cancer treatment located in a municipality in southern Minas Gerais with an approximate population of 80,000.

Inclusion criteria were: individuals aged 18 years or older, diagnosed with cancer regardless of staging, and undergoing monitoring at the institution. Exclusion criteria included difficulty responding to personal information during the research presentation and participation invitation. All invited men were able to respond to personal information and thus participated in the study.

Data collection occurred from March 2019 to January 2020, conducted by undergraduate and graduate nursing students, duly trained by the faculty responsible for the research. Men were approached by researchers in the outpatient waiting room and invited to participate in the study. Upon consent, they were taken to a private room for the interview, where only the researcher and the interviewee were present, this being the initial contact with participants. The mean duration of interviews

was approximately 30 minutes. Interviewers used tablets, computers, and cell phones to record responses, and the questionnaire was created online using Google Forms®, a free tool that allows creation and management of online forms such as surveys and questionnaires.

Information obtained during the interview included: 1) socioeconomic aspects (age, skin color, marital status, education level, religion, alcoholism, smoking, presence of caregiver, and cancer type); 2) health-related quality of life, through the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire Core 30 (EORTC-QLQC30)<sup>(11)</sup>; 3) social support, measured using the Medical Outcomes Study's Social Support Scale (MOS-SSS)<sup>(12)</sup>; and 4) depressive symptoms, evaluated by the Beck Depression Inventory<sup>(13)</sup>.

The EORTC-QLQC30 scale was developed by the European Organization for Research and Treatment of Cancer (EORTC) in 1986 and validated for Brazilian Portuguese in 2006<sup>(14)</sup>. It contains 30 items assessing dimensions of health-related quality of life through five functional scales (physical, cognitive, emotional, social function, and role functioning); three symptom scales (fatigue, pain, and nausea/vomiting); one item assessing financial impact of treatment and disease; five items assessing symptoms commonly reported by oncology patients (dyspnea, insomnia, loss of appetite, constipation, and diarrhea); and a Global Health Status and Quality of Life scale (GHS/QOL)<sup>(11)</sup>.

Scores are obtained by calculating scores for each domain, transformed into values from 0 to 100 (the sum of selected item values divided by number of responses, multiplied by 100). According to the scale authors, interpretation of scores should be understood as follows: the closer to 100, the better the assessed individual's functionality. For symptom scales, however, the closer to 100, the higher the symptom prevalence<sup>(14)</sup>.

Perceived social support was evaluated using the MOS-SSS. The original version<sup>(12)</sup>, translated into Portuguese<sup>(15)</sup>, had its psychometric properties assessed in the Pró-Saúde Study conducted in Rio de Janeiro<sup>(15)</sup>.

This instrument comprises 19 items grouped into four dimensions: material (four items), affective (three items), positive social interaction (three items), and emotional/informational (eight items). Each response has a corresponding value: "never" receives 1 point, "rarely" 2 points, "sometimes" 3 points, "almost always" 4 points, and "always" 5 points. Scores for each dimension range from 1 to 5, where higher scores indicate better perception of social support. Calculation is performed by assigning a

response value to each item, then summing all responses and dividing by total items in each dimension<sup>(15)</sup>.

In relation to depressive symptoms, the Beck Depression Inventory was used, composed of 21 items covering symptoms and attitudes evaluated on an intensity scale from 0 to 3. Summing item scores produces a total score ranging from 0 to 63. The closer to 0, the greater the absence of depressive symptoms; the closer to 63, the greater the symptom severity. Intensity intervals for classification are: minimal (0–11), mild (12–19), moderate (20–35), and severe (36–63). Items refer to: sadness, pessimism, feelings of failure, dissatisfaction, guilt, punishment, self-dislike, self-accusations, suicidal ideas, crying, irritability, social withdrawal, indecision, change in self-image, difficulty working, insomnia, fatigability, loss of appetite, weight loss, somatic concerns, and loss of libido<sup>(16)</sup>.

Data were entered into Microsoft Excel® and analyzed using STATA® statistical package version 17.0, considering a significance level of 5%. Descriptive statistics were presented by percentages, means, standard deviations, medians, and minimum and maximum values. As scores from EORTC-QLQC30, MOS-SSS, and Beck Depression Inventory did not follow normal distribution according to Kolmogorov-Smirnov test, Spearman correlation was used to assess correlations among social support, depressive symptoms, and quality of life.

The study obtained institutional approval from the referral oncology hospital in the municipality and was approved by the Research Ethics Committee under opinion n.º 3.199.866/2019 and CAAE n.º 08784919.7.0000.5142. Participants were verbally informed about research objectives, potential risks and benefits, expected contributions, and ethical considerations.

Subsequently, the Free and Informed Consent Form was handed out for participants to read and clarify any doubts before signing. After formalizing the form, one copy was delivered to participants while another remained with the researchers. Data collection commenced only after this procedure.

## RESULTS

The sample in this study consisted of 95 men diagnosed with cancer, undergoing oncological monitoring. A predominance of older adults was observed, who identified as white-skinned, lived with partners, did not have caregivers, had incomplete elementary education, professed the Catholic faith, earned between one and three minimum wages, primarily from retirement, and reported a regular income perception to meet their needs.

Regarding lifestyle habits and clinical characteristics, most denied alcohol consumption. However, in terms of smoking, they reported a history of this habit in the past. In relation to cancer type, the highest percentage of men had prostate cancer, followed by intestinal cancer and head and neck cancer (Table 1).

In relation to data presented in Table 2, mean scores of EORTC QLQ-C30 domains show that within the functional scale, cognitive function and social function items had the highest means and smaller standard deviations compared to other items. Physical function had the lowest mean. On the symptom scale, insomnia, fatigue, and pain were the most prevalent symptoms among participants. However, high standard deviation suggests influence of extreme values on the mean, indicating inconsistent results. Financial difficulty scale and global health status/quality of life means reflect good indicators, as financial difficulty is minimal and the general index points to a high level of self-reported global quality of life by participants.

Regarding MOS-SSS, the material support domain had the highest mean compared to other domains, though all scores are close, indicating a high perceived level of all types of social support.

Beck Depression Inventory showed consistent values across all measures of central tendency and dispersion, ensuring reliability of participants' data despite a high maximum value.

Table 3 shows Spearman correlation results among EORTC QLQ-C30 domains, MOS-SSS domains, and Beck Depression Inventory, considering a 5% significance level.

Table 1: Sociodemographic and clinical characteristics of men with cancer (n = 95) Alfenas, Minas Gerais, Brazil, 2020.

Variable	Category	n	%
Age	Adult	23	24.21
	Older adult.	72	75.79
Skin color	White	58	61.05
	Brown	25	26.32
	Black	11	11.58
	Asian	1	1.05
Marital status	Without a partner	34	35.79
	With a partner	61	64.21
Caregiver	Yes	11	11.58
	No	84	88.42
Schooling	Illiterate	9	9.47
	Incomplete Elementary School	50	52.63

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Variável	Categoria	n	%
	Elementary School	19	20.0
	High School	14	14.74
	Higher Education	3	3.16
Religion	Catholic	68	71.58
	Evangelical	19	20.0
	Spiritist	3	3.16
	Others	1	1.05
	No	4	4.21
Income	Less than 1 Minimum Wage (MW)	7	7.37
	1 to 3 MW	81	85.26
	4 to 5 MW	4	4.21
	More than 5 MWs	3	3.16
Income source	Work	24	25.26
	Retirement	57	60.0
	Others	14	14.74
Income perception	Very good	5	5.26
	Good	37	38.95
	Fair	45	47.37
	Bad	6	6.32
	Very bad	2	2.10
Alcoholism	Yes	10	10.53
	No	44	46.32
	No, but former alcoholic	41	43.16
Smoking	Yes	13	13.68
	No	37	38.95
	No, but former smoker	45	47.37
Type of cancer	Prostate cancer	30	31.58
	Intestinal cancer	15	15.79
	Head and neck cancer	12	12.63
	Leukemia	9	9.57
	Stomach cancer	6	6.32
	Lung cancer	5	5.26
	Myeloma	5	5.26
	Esophageal cancer	3	3.16
	Skin cancer	3	3.16
	Kidney cancer	2	2.10
	Peritoneal cancer	1	1.05
	Hodgkin's lymphoma	1	1.05
	Mediastinum	1	1.05
	Multiple myeloma	1	1.05
	Desmoplastic small round cell tumor	1	1.05

Source: The authors



Among assessed dimensions, a positive correlation was observed between emotional/informational support and role functioning, as well as a negative correlation between emotional/informational support and fatigue. Positive social interaction correlated positively with role functioning and social function, and negatively with fatigue and financial difficulty.

In Beck Depression Inventory, positive correlations appeared with dyspnea, loss of appetite, fatigue, pain, insomnia, and financial difficulty. Conversely, negative correlations were observed between Beck Depression Inventory and cognitive function, social function, emotional function, physical function, role functioning, and global health status/quality of life.

## DISCUSSION

In relation to the predominant age group in the study, a high percentage of older adults was observed, a characteristic strongly associated with prostate cancer, the

most prevalent type in the analyzed sample. Advanced age contributes to higher mortality rates, increased burden of comorbidities, and frailty, causing detriments to quality of life<sup>(4,17)</sup>.

Cancer treatment can bring benefits and harms within a complex scenario of geriatric conditions, potentially significantly impacting quality of life. Hence, the importance of comprehensive geriatric assessment is emphasized, considering comorbidities, physical and cognitive function, frailty, nutritional status, and medication use, prior to treatment decision-making<sup>(4)</sup>.

Moreover, the relevance of integral care directed to young adults with cancer is highlighted, whose psychosocial needs must be met. A study evaluating young men with testicular cancer underscored this importance, indicating that beyond interprofessional care, peer support and mentoring are essential to provide support, since unresolved mental health issues may significantly impact

Table 2: Descriptive statistics of the EORTC QLQ-C30, MOS-SSS, and Beck Depression Inventory scales (n = 95). Alfenas, Minas Gerais, Brazil, 2020.

Scales/Dimensions	Mean	Median	Standard Deviation	Minimum	Maximum
Functional scale					
Physical function	78,9	86,7	23,6	0,0	100,0
Role functioning	82,6	100,0	27,8	0,0	100,0
Cognitive function	89,6	100,0	18,2	0,0	100,0
Social function	88,9	100,0	18,8	33,3	100,0
Emotional function	83,6	91,7	21,2	8,3	100,0
Scale of symptoms					
Fatigue	16,8	11,1	23,0	0,0	100,0
Dor	16,7	0,0	24,8	0,0	100,0
Nausea/vomiting	6,5	0,0	17,6	0,0	100,0
Dyspnea	15,8	0,0	32,9	0,0	100,0
Loss of appetite	16,1	0,0	31,8	0,0	100,0
Insomnia	26,7	0,0	38,8	0,0	100,0
Constipation	11,6	0,0	27,0	0,0	100,0
Diarrhea	7,4	0,0	21,8	0,0	100,0
Financial difficulties	20,4	0,0	32,0	0,0	100,0
Global Health Status (GHS/QOL)	81,3	83,3	17,9	16,7	100,0
Social Support Scale					
Emotional/informational support	89,8	100,0	21,9	0,0	100,0
Material support	96,1	100,0	13,4	0,0	100,0
Positive social interaction	90,3	100,0	21,7	0,0	100,0
Affective support	94,3	100,0	19,6	0,0	100,0
Beck Depression Inventory	6,6	5,0	6,4	0,0	43,0

Source: The authors

Table 3: Spearman correlation between EORTC QLQ-C30, MOS-SSS, and Beck Depression Inventory domains (n = 95). Alfenas, Minas Gerais, Brazil, 2020.

	Emotional/Informational Support		Material support		Positive social interaction		Affective support		Beck Depression Inventory	
	rho	p	rho	p	rho	p	rho	p	rho	p
<b>Functional scale</b>										
Physical function	0,056	0,589	0,096	0,354	0,099	0,339	-0,072	0,490	-0,493	<0,001
Role functioning	0,246	0,016	0,179	0,083	0,325	0,001	0,031	0,764	-0,502	<0,001
Cognitive function	0,090	0,387	-0,030	0,770	0,077	0,461	-0,056	0,591	-0,282	0,006
Social function	0,237	0,021	0,066	0,526	0,329	0,001	-0,058	0,580	-0,245	0,017
Emotional function	0,057	0,580	0,014	0,895	0,147	0,155	0,095	0,362	-0,323	0,001
<b>Scale of symptoms</b>										
Fatigue	-0,247	0,016	-0,140	0,176	-0,275	0,007	-0,070	0,503	0,478	<0,001
Dor	-0,014	0,892	0,028	0,789	-0,171	0,097	-0,020	0,849	0,423	<0,001
Nausea/ vomiting	-0,050	0,631	0,011	0,916	-0,028	0,785	-0,099	0,339	0,159	0,124
Dyspnea	-0,075	0,470	-0,061	0,554	-0,057	0,582	0,061	0,559	0,213	0,038
Loss of appetite	-0,026	0,803	0,046	0,656	-0,136	0,187	0,069	0,509	0,260	0,011
Insomnia	-0,092	0,373	-0,127	0,220	-0,201	0,051	-0,111	0,283	0,434	<0,001
Constipation	-0,082	0,431	-0,091	0,379	-0,088	0,398	-0,030	0,773	0,157	0,128
Diarrhea	0,091	0,379	-0,028	0,785	-0,065	0,530	0,046	0,658	0,089	0,392
Financial difficulties	-0,125	0,227	-0,025	0,807	-0,228	0,007	-0,045	0,662	0,268	0,009
Global Health Status (GHS/ QOL)	0,185	0,073	0,141	0,173	0,210	0,41	0,049	0,639	-0,389	<0,001

Source: The authors

quality of life, as well as social and health outcomes among people with cancer<sup>(18)</sup>.

Another relevant characteristic of the studied population concerns the percentage of men who were former smokers, which, combined with current smokers, constitute the majority. An ecological study evaluating smoking prevalence and lung cancer morbidity and mortality in Brazilian states demonstrated higher mortality and hospital admission rates attributed to the male population, besides identifying higher smoking prevalence among men, consistent with global data<sup>(2,19)</sup>.

In relation to functional scale results in this study, men exhibited little difficulty concentrating and with memory, and physical condition and treatment interfered little with family life and social activities. However, physical function may involve greater needs for assistance with bathing, dressing, or feeding<sup>(14)</sup>. Specific items related to certain cancer types may not have been covered by this generic quality of life scale. A Brazilian study with men after prostatectomy identified, through a specific quality of life scale, means below 60, suggesting impairment in sexual function<sup>(10)</sup>.

Research evaluating effects of hormone therapy on quality of life in men with prostate cancer in Italy evidenced statistically significant worsening of physical

functioning, increased fatigue and insomnia, and significant decline in sexual functioning. Qualitative data demonstrated a marked increase in men reporting depressed mood, worsened body image and sexuality perception, intensified feelings of dependency, and emergence of challenges in social and relational spheres<sup>(20)</sup>.

In this regard, symptomatology may be associated with both manifestations arising from cancer illness and from treatments received. A cohort study with 1,203 men with localized prostate cancer undergoing initial prostatectomy found that receipt of post-prostatectomy radiotherapy was associated with statistically significant long-term decreases in patient-reported urinary incontinence, urinary and intestinal irritation, as well as sexual life quality. However, no significant difference was found long term between men who received early or late radiotherapy after prostatectomy<sup>(21)</sup>.

Concerning social support, all domains showed satisfactory results in perceived social support. A study evaluating men and women diagnosed with different types of cancer demonstrated that women had lower quality of life than men, mainly in disease coping. Moreover, it showed satisfaction with sources and types of support, resilience, and optimism were positively related to quality of life<sup>(21)</sup>.

Furthermore, predictive models showed that informational support from friends is the variable that most increases overall health, while emotional support from a partner is significant for disease coping. Partner emotional support, combined with informational support from family, are the strongest contributors to reducing symptoms stemming from cancer illness, demonstrating the importance of support networks for coping with disease<sup>(22)</sup>.

A minimum score in role functioning indicates that the person is unable to work or engage in leisure activities due to illness, whereas maximum score indicates absence of limitations in these activities. This quality of life scale item showed positive correlation with emotional support and positive social interaction. Such correlation may suggest that perceived support derives from relationships established in work and leisure activities<sup>(14)</sup>.

A study on processes involved in men's return to work after radical prostatectomy and its relation with masculinity indicated that, for some men, returning to work is essential as it confers meaning to life and well-being. Thus, recommendations highlight the need for health professionals to adopt a comprehensive approach, promoting discussions about treatment impacts and professional possibilities<sup>(23)</sup>.

Positive social interaction correlated negatively with fatigue and financial difficulty. Additionally, participants reported a higher percentage of regular income perception. Financial toxicity, referring to financial difficulties associated with cancer and its treatment, may cause clinical worsening, indebtedness, loss of professional opportunities, family habit changes, and decline in quality of life<sup>(24)</sup>.

In this context, health professionals can contribute by clarifying therapeutic options and associated costs, respecting patient autonomy to help mitigate feelings of helplessness facing the disease<sup>(24)</sup>.

In Beck Depression Inventory, positive correlation was observed between depressive symptoms and dyspnea, loss of appetite, fatigue, pain, and insomnia, demonstrating that depressive symptoms accompany illness-related symptoms. Conversely, better quality of life outcomes are inversely proportional to presence of depressive symptoms.

In this study, depressive symptoms were minimal, which may relate to good results in quality of life and social support. Literature shows a study evaluating psychological distress, quality of life, and coping strategies in colorectal cancer patients of both genders found

that women presented more depressive symptoms than men<sup>(25)</sup>.

A study analyzing data from 9,345 people with cancer comparing gender differences revealed a statistically significant association between cancer and depressive symptoms in both men and women, and that lung or colorectal cancer diagnosis increases depressive symptoms only in men, not in women<sup>(9)</sup>.

Additionally, among men, social engagement may exert a protective role against cancer-related depressive symptoms, as those participating in more social, civic, or leisure activities developed fewer symptoms. Thus, men adhering to hegemonic masculinity norms tend to be more reluctant to seek help from others and consequently avoid social engagement after cancer diagnosis, which may intensify the disease's negative psychological impact<sup>(9)</sup>.

Given these findings, the importance of interprofessional health actions is highlighted, facilitating men's access to health services, especially at primary care level, promoting adherence to early detection programs for different cancer types and adoption of healthy lifestyle habits.

At specialized care level, support needs should be promptly identified and addressed, so that assessment of quality of life and depressive symptoms is performed continuously throughout the therapeutic journey and care-seeking trajectories, as such symptoms and impairments may persist or emerge over time.

Regarding social support, investigation of support networks and resource provision needs is integral to comprehensive care that must be guaranteed to people with cancer and their families.

Among strengths and contributions of this study, stand out the use of internationally validated instruments, sample power calculation for its 95 participants, and absence of sample losses, reinforcing reliability of findings and originality by integrating simultaneously validated measures of quality of life, social support, and depressive symptoms in men with cancer, allowing a broader understanding of psychosocial interrelations in this context.

The study also directs attention to relevant demands in oncological care, which should be addressed in teaching programs, especially in nursing, focused on men's health across the life cycle, prioritizing health promotion actions, prevention of smoking, and support needs for mental health and social support.

Future multicenter and longitudinal research is suggested, applied to other national and regional contexts.

Moreover, qualitative and mixed-method studies exploring men's understanding of quality of life, social support, and mental health in oncological context may broaden knowledge and guide contextualized actions.

Limitations of this study include the impossibility of generalizing results and the fact that research was conducted in a single oncology referral center.

## CONCLUSION

A positive correlation was found between the emotional/informational support domain and role functioning, as well as a negative correlation between emotional/informational support and fatigue.

Positive social interaction correlated positively with role functioning and social function, and negatively with fatigue and financial difficulty.

In the Beck Depression Inventory, positive correlation was observed with dyspnea, loss of appetite, fatigue, pain, insomnia, and financial difficulty, and negative correlation with cognitive function, social function, emotional function, physical function, role functioning, and global health status/quality of life.

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