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Health self-perception associated with coping strategies in cancer patients

Autopercepção de saúde associada a estratégias de enfrentamento em pacientes com câncer

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Abstract

Objective
To evaluate the association between self-perception of health, coping strategies, and the respective staging of the neoplasm, as well as socioeconomic and demographic factors.

Method
This is a quantitative, descriptive, and exploratory research, with 182 adults and elderly patients, guided by an psychometric, and sociodemographic instrument, and analyzed by bivariate tests.

Results
The elderly were more indifferent to their health, while those who consider their health to be very good are younger (p = 0.001). Participants from regions with medium human development considered themselves to be in good or very good health and those from regions with high human development declared themselves to be indifferent or to have poor or very poor health (p = 0.031).

Conclusion
Given these results, a more humanized multidisciplinary care, with individualized medical and psychological follow-up, redirecting thoughts, optimizing comorbidities, and enabling greater social/family support would be necessary interventions.

Keywords: Neoplasms; Psychological; Psychology; Physicians; Self-evaluation.

Resumo

Objetivo
Avaliar a associação entre autopercepção de saúde, estratégias de enfrentamento e o respectivo estadiamento da neoplasia, bem como fatores socioeconômicos e demográficos.

Método

Trata-se de uma pesquisa quantitativa, descritiva e exploratória, com 182 pacientes adultos e idosos, norteada por instrumento psicométrico e sociodemográfico, e analisada por testes bivariados.

Resultados

Os idosos se mostraram mais indiferentes à sua saúde, enquanto aqueles que a consideram muito boa são mais jovens (p = 0,001). Participantes de regiões com médio desenvolvimento humano se consideraram com saúde boa ou muito boa e aqueles de regiões com alto desenvolvimento humano se declararam indiferentes ou com saúde ruim ou muito ruim (p = 0,031).

Conclusão

Diante desses resultados, um cuidado multidisciplinar mais humanizado, com acompanhamento médico e psicológico individualizado, redirecionando pensamentos, otimizando comorbidades e possibilitando maior suporte social/familiar seriam intervenções necessárias.

Palavras-chave: *Neoplasias; Psicológico; Psicologia; Médicos; Autoavaliação.*

Because it is a stigmatized disease, full of uncertainties and anguish, the self-perception processes in the health of an individual newly diagnosed with cancer can undergo sudden changes and lead to changes in prognosis. Several recent studies show the importance of self-rated health and its relationship with health outcomes and behaviors. According to Pagotto et al. (2013), self-perception of health status is one of the indicators recommended by the World Health Organization (WHO) to verify the health of populations. It has a simple, practical, and holistic approach to various aspects of an individual's life that directly interfere with their health and health and disease processes.

The disease process, including the diagnosis of cancer, is experienced by the patient and his family as a moment of intense anguish, suffering, and anxiety, as this disease carries the label of a painful and deadly disease. Among the ways of dealing with the reality imposed by the neoplasm, there is coping, which is understood as facing a situation (Lorencetti & Simonetti, 2005). The process of self-perception in health among individuals with chronic diseases, including cancer, has been shown to be altered (Rañó-Santamaría et al., 2022), highlighting the importance of addressing this issue to identify opportunities for improving their quality of life and overall health.

Coping can have its focus directed at the problem, which occurs when the person seeks to resolve the situation by obtaining information about the stressor and, thus, can assess the most efficient way to solve the stress-causing event; or it can still be centered on emotion when the adopted strategies are loaded with emotion, which is a type of self-defense that aims to avoid confrontation with the source of stress (Silva et al., 2017). Social support appears to be a potential tool that may assist in improving coping levels among individuals with cancer (Bottaro et al., 2023). Self-perception tools have proven to be important in the cancer coping process by strengthening aspects related to well-being (Martinez-Calderon et al., 2023).

Given the above, it is clear that how a patient self-assess their health can be a predictor of their outcomes, so we need to observe how this response is presented among adults and elderly people with cancer. Therefore, this research is justified by the fact that self-perception of health is shown to have an intimate relationship with the patient's outcomes, as well as their prognosis, and aims to evaluate the association between self-perception of health, coping strategies, and the respective staging of the neoplasm, as well as socioeconomic and demographic factors.

Method

This is descriptive, exploratory research of a quantitative nature. The study was carried out in the city of Mossoró, in Rio Grande do Norte State, on the premises of the hospitals (Hospital

Units I and II) of the *Liga de Mossoró de Estudos e Combate ao Câncer* (LMECC, League of Studies and Fight against Cancer), which serve the population of the city, as well as the municipalities of the western region of the state of Large northern river. Study participants were cancer patients over 18 years of age, assisted in both LMECC units.

This work included 182, adults and elderly, patients. The sample calculation was based on average number of 574 patients attended per semester, considering a 95% Confidence Interval and a 5% Margin of Error. This calculation resulted in a sample of 231 individuals. In the end, this research had a shortfall of 49 patients, because of the questions involved in the Coronavirus Disease 2019 (COVID-19) Pandemia.

Data collection was carried out with a practical and objective interview. The instrument was composed to obtain data such as age, gender, education, place of origin, and religion, in addition to a short questionnaire to assess the patient's self-perception of health on a psychometric scale. For this, the following question was used: "What do you think about your health status in the last month?" being able to choose one of the 5 response options: "very good", "good", "regular", "weak", "terrible" (Pagotto et al., 2011, p. 1594).

In addition, the instrument contained a section to assess how the patient coped with the neoplasm. For this, the *Escala Modos de Enfrentamento de Problemas* (EMEP, Mode of Coping with Problems Scale) was chosen and validated for Portuguese through factor analysis of a Brazilian population composed of people from the general population and people affected by chronic diseases (Silva et al., 2017).

The EMEP, in the adapted Brazilian version, contains 45 items, divided into four factors: problem-focused coping (18 items, $\alpha = 0.84$); emotion-focused coping (15 items, $\alpha = 0.81$); search for religious practices (7 items, $\alpha = 0.74$) and search for social support (5 items, $\alpha = 0.70$). Responses are given on a five-point Likert scale (1 = I never do that; 5 = I always do that) (Seidl, 2005).

After data collection by the instrument, information was sought from the patient's medical records, to identify the diagnosis, type of neoplasm, degree of staging, and, consequently, the severity of the clinical picture, composing other independent variables, for comparison with that had been answered in the applied questionnaires.

Economic and social assessment coefficients were also analyzed as independent variables, to complement the socioeconomic analysis based on the city informed by the individual, so that the influence of these indicators on the patient's self-perception/self-assessment of health could be sought. The chosen coefficients were the Human Development Index (HDI) and the Gini Index.

The collected data were organized, firstly, through exploratory analysis, to find possible omissions in answers. The normality of the distribution of quantitative data was verified using the Kolmogorov-Smirnov test, and these were described using the mean and standard deviation or median and interquartile range, according to their normality or asymmetry. Categorical data were presented in the form of absolute and relative frequencies.

Student's *t*-test and ANOVA test of variance with Sidak 's post hoc was used to compare means, and Pearson's chi-square test and Fischer's exact test were used for an association between categorical variables. Pearson's coefficient was used to verify the correlation between quantitative variables. Multivariate analysis was performed using Poisson Regression. The data were analyzed with the Statistical Software Package for the Social Sciences, 21.0, and analyses with $p < 0.05$ were considered significant.

The research respects all the ethical precepts contained in Resolution nº 466/12 of the National Health Council, which dictates the guidelines for research involving human beings. It was appreciated and approved by the Research Ethics Committee of the State University of Rio Grande do Norte under CAAE 14616619.3.0000.5294 and protocol nº 3.445.362.

Results

A total of 182 patients with a mean age of 54.6 ± 14.3 years (range 20 to 85 years) were evaluated, most of whom were younger than 60 years (61.5%), female (69.2%), of the Catholic religion (61.5%) and, more often, with incomplete primary education (34.4%). The origin of patients was equally from the city of Mossoró and other cities (50.0%). The HDI classification showed that most of the evaluated regions of origin had medium (48.4%) and high human development (50.0%) and the Gini Index, had a higher concentration of income (85.7%) (Table 1).

Table 1
Sociodemographic characteristics of the participants. Mossoró/RN, Brazil

Characteristics	*n*	%
Sex		
Masculine	56	30.8
Feminine	126	69.2
Education		
Illiterate or uneducated	26	16.9
Incomplete fundamental	53	34.4
Complete Elementary	18	11.7
Full medium	43	27.9
Graduated	14	9.1
Religion		
Catholic	112	61.5
Evangelical	54	29.7
Other religions/beliefs	16	8.8
Origin		
Mossoró	91	50.0
Other Cities	90	50.0
HDI 2010 (*M* ± *SD*)	0.669 ± 0.057	
2010 HDI Classification		
Low	03	1.6
Average	88	48.4
High	91	50.0
2010 Gini Index (*M* ± *SD*)	0.529 ± 0.358	
Gini Index Ranking		
Lower concentration of income	26	14.3
Greater concentration of income	156	85.7

Note: Missing data were 28 for education. HDI: Human Development Index.

Most patients perceive their health as good (54.9%) or good/very good (78.0%). Considering the patient's age group, those who are indifferent to their health are more often elderly, while those who consider their health to be very good are younger. When the variable is dichotomized, those who are indifferent or who consider their health to be bad or terrible are older, while those who perceive themselves to be in good or very good health are younger. There was no statistically significant association between age group and disease stage (Table 2).

Table 2
Health and treatment characteristics by age group of participants. Mossoró/RN, Brazil

Characteristics	Age < 60 years (*N* = 112)		Age ≥ 60 years (*N* = 70)		V de Cramer	*p*
	n	%	*n*	%		
Self-perception of health						0.001**[a]
Very good	32	28.6	10	14.3	0.310	
Good	64	57.1	36	51.4		
Indifferent	7	6.3	18	25.7		
Bad	7	6.3	6	8.6		
Terrible	2	1.8	0	0.0		
Self-perception of health						0.002**[b]
Good and very good	96	85.7	46	65.7	0.235	
Indifferent, bad, and terrible	16	14.3	24	34.3		
Disease staging						0.630[a]
Stadium 0	1	1.0	1	1.4	0.139	
Stadium 1	7	6.9	8	11.6		
Stadium 2	27	26.5	19	27.5		
Stadium 3	28	27.5	18	26.1		
Stadium 4	22	21.6	17	24.6		
Absence	17	16.7	6	8.7		
Disease staging						0.300[b]
Localized disease	35	34.3	28	40.6	0.119	
Advanced disease	50	49.0	35	50.7		
Absence	17	16.7	6	8.7		

Note: **$p < 0.01$. *p*: [a]Fisher's Exact Test; [b]Pearson's chi-square test.

The mean score on the EMEP, on factor 2, focused on emotion, of patients who perceived themselves as having poor health was higher than the mean of patients who declared themselves to be in very good health. Other factors and total scores did not differ according to self-rated health (Table 3).

Table 3
Coping strategy and participants' self-perception of health. Mossoró/RN, Brazil

Coping Strategy	Self-Perception of Health		*p*
	Good and Very Good (*N* = 142)	Indifferent, Bad, or Terrible (*N* = 40)	
	M ± *SD*	*M* ± *SD*	
Factor 1	4.50 ± 0.32	4.41 ± 0.55	0.315
Factor 2	1.93 ± 0.56	2.28 ± 0.61	0.001**
Factor 3	4.38 ± 0.52	4.31 ± 0.58	0.493
Factor 4	3.84 ± 0.83	3.78 ± 0.80	0.655
Total score	11.78 ± 1.08	11.95 ± 1.26	0.398

Note: *p*: Student's T-test. **$p < 0.01$. Factor 1: Focused on the problem; Factor 2: Focused on emotion; Factor 3: Religious practices/fantasy thinking; Factor 4: Seeking social support.

The age of patients with self-perceived good and very good health was lower than the age of patients who declared themselves indifferent or with poor or very poor health; adults under 60 years of age considered their health to be very good or very good, while those aged 60 years or older considered themselves indifferent, or in poor or very poor health (Table 4).

Patients from Mossoró were indifferent or in very poor or poor health, and those from other cities reported having good or very good health. Participants from regions with medium human

development considered themselves to be in good or very good health, and those from regions with high human development declared themselves to be indifferent or to have poor or very poor health. Other associations showed no statistically significant difference (Table 4).

Table 4

Sociodemographic, health, and treatment characteristics associated with participants' self-rated health. Mossoró/RN, Brazil

Sociodemographic Characteristics	Self-Perception of Health				V de Cramer	*p*
	Good very good (*N* =142)		Indifferent/Bad/Terrible (*N* = 40)			
	n	%	*n*	%		
Age in Years (*M* ± *SD*)	53.3 ± 14.2		59.4 ± 13.9			0.017*[a]
Gender					0.077	0.296[b]
Male	41	28.9	15	37.5		
Female	101	71.1	25	62.5		
Education					0.094	0.887[c]
Illiterate or uneducated	20	16.7	06	17.6		
Incomplete fundamental	40	33.3	13	38.2		
Complete Elementary	15	12.5	03	8.8		
Full medium	35	29.2	08	23.5		
Graduated	10	8.3	04	11.8		
Religion					0.251	0.600[c]
Catholic	90	63.4	22	55.0		
Evangelical	40	28.2	14	35.0		
Other undefined religions/beliefs	12	8.5	04	10.0		
Origin					0.186	0.012*[b]
Mossoró	64	45.1	27	67.5		
Other Cities	78	54.9	13	32.5		
HDI 2010 (*M* ± *SD*)	0.664 ± 0.056		0.685 ± 0.056			0.040*[a]
2010 HDI Classification					0.195	0.031*[b]
Low	02	1.4	01	2.5		
Average	76	53.5	12	30.0		
High	64	45.1	27	67.5		
2010 Gini Index (*M* ± *SD*)	0.529 ± 0.038		0.528 ± 0.025			0.902[a]
2010 Gini Index Ranking					0.141	0.057[b]
Lower concentration of income	24	16.9	02	5.0		
Greater concentration of income	118	83.1	38	95.0		
Disease staging					0.144	0.156[c]
Localized disease	54	40.3	09	24.3		
Advanced disease	64	47.8	21	56.8		
New absences/progressions/follow-up	16	11.9	07	18.9		

Note: *p <0.05. p: [a]Student's T-test; [b]Pearson's chi-square test; [c]Fisher's Exact Test. The missing data were 28 for schooling; 11 for disease staging and one for treatment. HDI: Human Development Index.

Variables with stastistical association with perceived health were included in the Poisson regression model (age, origin, factor 2 – focused on emotion, HDI, and disease stage) whose final analysis result is included in Table 5.

The older the patients, the greater the frequency of poor health perception, with a PR of 3.5% (95% CI 1.0%-6.0%); patients with an emotion-focused coping strategy have a higher occurrence of poor health perception, with a PR of 106.5% (95% CI 49.94%-185.4%); and, patients with no new progressions and follow-up have a higher frequency of poor health perception, with a PR of 118.1% (95% CI 1.6%-367.8%).

Table 5
Multivariate analysis of variables associated with participants' perceived health. Mossoró/RN, Brazil

Parameter	B	PR	95% CI		*p*
			Inf	Sup	
Age in years	0.034	1.035	1.010	1.060	0.005**
Factor 2 – Focused on emotion	0.725	2.065	1.494	2.854	<0.001***
Staging					
Absence	0.780	2.181	1.016	4.678	0.045
Advanced disease	0.494	1.639	0.824	3.259	0.159
Localized disease	0	1	.	.	.

Note: **$p < 0.01$ ***$p < 0.001$. Absence: Absence of new progressions/follow-up. PR: Prevalence Ratio.

Discussion

The correlation between the adult and elderly age groups and their respective self-rated health was significant. Both for the analysis of self-rated health in five categories and for the dichotomized analysis, elderly patients tended towards a more negative assessment. The female gender and the elderly age group are associated with the highest levels of chronic pain, multimorbidity, fatigue, and neuroticism, which in turn are negatively associated with self-rated health (Cachioni et al., 2022).

O baixo grau de na qualidade da auto-percepção em saúde é entendido como um fator de risco para aumento da mortalidade entre pessoa com morbidades crônicas, em longo prazo (Mino-Léon et al., 2023). One of the main reasons for this result is the presence of functional disabilities associated with more advanced age groups (Belmonte et al., 2017), including chronic-degenerative pathologies, associated with poor self-rated health in the literature (Keymolen et al., 2021).

Social participation is another factor that may be a predictor of greater self-perception of negative health in old age. Living in society is essential for the well-being of the population over 60 years of age, with deprivation of frequency and/or difficulty in accessing this practice being related to a worse self-assessment of health and was mainly caused by social vulnerability, low accessibility, and availability of public transport, and various health problems in this age group (Oliveira et al., 2021).

The better self-rated health of younger patients may be mainly related to a lower prevalence of comorbidities and a less fatalistic perspective of cancer. Urban adults who claimed to have poor health were associated with low consumption of fruits/vegetables/vegetables, low practice of physical activity, being a smoker or ex-smoker, psychological distress, dissatisfaction with life, and being overweight (Meireles et al., 2015).

Regarding the patient's coping strategies and the influence of coping on self-assessment of health, patients who had their coping focused on emotion, self-perceived their health as being bad more often. Coping can have its focus directed toward emotion when the adopted strategies are loaded with emotion, which is a type of self-defense that aims to avoid confrontation with the source of stress (Silva et al., 2017).

The significant association between the use of emotional coping (Factor 2) and greater damage to health has already been found in other studies in the literature. Turning off thoughts and discourse about the pathology (not talking or thinking about the disease), self-blaming, and intense search for meaning was associated with impaired adjustment in a study of women newly diagnosed with cancer (Lally et al., 2012).

In this sense, it is evident that emotion-oriented coping strategies, represented by Factor 2 of the EMEP, by causing great damage to the psyche and physical health of patients, influence

how the individual perceives his/her health. The negative mood and resigned acceptance of the neoplasm led cancer patients to greater difficulties in mobility, self-care, anxiety/depression, pain/discomfort, and, consequently, worse quality of life (He et al., 2019).

The city of residence was also evaluated by the present study, demonstrating curious findings: cancer patients residing in Mossoró self-rated their health more negatively when compared to patients from other cities in the interior of the west of the state of Rio Grande do Norte. This trend was followed by the HDI: patients from cities with high HDI also self-rated their health indifferently, poor, or very bad, while patients from cities with medium HDI self-rated their health as good or very good more often.

The municipality of Mossoró, since 1940, has been consolidating itself as one of the main centers of urbanization, due to its economic diversification over time and the current territorial occupation process. Currently, the city concentrates a high density of modernization, services, and higher education centers, with diversified cultural activities, maintaining interrelationships with other municipalities in the region, such as Açu and Areia Branca (Gomes & Costa, 2009).

Thus, the finding of better self-assessment of health in cancer patients who need to travel between cities daily or weekly and who live in cities with lower economic and social indices generates a certain strangeness and leads us to think about which factors associated with larger urban conglomerates can significantly impact on patient's perception of health.

The incorporation of environmental factors in cities in the individual's perception of health is essential for understanding the phenomena that are manifested 49 in this present study. Social life, especially for the elderly, in another study, was also associated with worse self-rated health, especially in areas with less urban mobility, which proved to be a major obstacle to accessing cultural, sporting, and religious events (Oliveira et al., 2021). Therefore, even with the great concentration of modernities and services, the big cities distributed by the federative units suffer from structural, social, and economic problems that have a great influence on how the individual perceives his health.

Urban mobility in Mossoró is also a big and old problem in the city, with several peripheral neighborhoods with few lines of public transport. The strategic placement of new shopping centers and leisure activities in regions away from the city center, due to the interests of real estate speculation, makes it even more difficult for a large part of the population to access these spaces, reducing social interaction and interpersonal relationships, essential for the population's better perception of health. As a solution, countless residents opt for individual transport, manifested by the high growth in the city's motorcycle and scooter fleet, which are more practical, faster, and save on purchase and maintenance costs, but at the expense of greater exposure to traffic accidents with victims fatal, with material losses, injuries, and irreparable damages (Souza & Vasconcelos, 2016).

The ability to move around the city to access services and collective spaces has a great responsibility for raising the quality of life from the perspective of the social determinants of health, an aspect that is directly influential in the perception of health (Rosa et al., 2022).

In small and rural cities, on the other hand, the segregation of spaces occurs to a lesser extent, and people from different social classes tend to enjoy the same spaces and equipment, such as squares, theaters, parks, transport services, lighting, water, etc. As a result, user-friendliness, which is replaced by fear, misunderstanding, intolerance, individualism, and the privatization of life in large urban centers, is better preserved, with greater social belonging and homogenization of spaces (César et al., 2018).

In this sense, residents of small towns in the interior of the state, who rated their health as good or very good more frequently in this present study, are armored against aspects that deteriorate

socio-affective relationships in larger cities, such as the excess of cars, the hyper consumption, lack of sanitation, pollution, violence, economic segregation, indigence, poverty, stress, and psychological disorders (César et al., 2018).

Although no relationship was found between self-assessment and disease staging, the association between survival and self-rated health has already been documented. Self-rated health is the best predictor of survival compared to other indicators. This finding indicates that self-rating can be an accurate measure of disease severity and that patients have an excellent internal capacity to assess their health (Shadbolt et al., 2002).

In multivariate analysis, however, the staging, this time recategorized into Advanced Disease, Localized Disease, and Absence of New Progressions/Follow-up, showed significance: patients who had already completed the treatment and were being followed up or who did not present new progressions of the neoplasia or new recent staging showed worse self-rated health. This association can be understood not only by the terrifying stigma at diagnosis but also by the apprehension of the risk of cancer recurrence after treatment, which involves a significant number of people (Mell et al., 2022; Snyder et al., 2022).

In this way, completing the cancer treatment and having a high survival rate is a great victory, but it also means living with a paradox between the condition of a definitive cure and the anguish of recurrence (Rha et al., 2022). Thus, the patient suffers from a "daily ghost", which brings anguish and anxiety in the face of the possibility of a recurrence of the neoplasm and a new cycle of oncological treatments, generating a worsening of the quality of life and a worse self-assessment of health.

Among the limitations of the present study, the large extent of the collection instrument applied was one of the difficulties encountered by the researchers. The consultation of medical records resulted in missing data in some variables, due to lack of information, incorrect completion, or lack of updating and detailing of the biomedical situation of some participating patients.

The problem of medical records was further accentuated by the COVID-19 pandemic, which limited researchers' access to patients, resulting in a deficit of 49 patients from the previously planned sample. Another impact of the pandemic on this study was the postponement of the preparation of a new Instituto Brasileiro de Geografia e Estatística (IBGE, Brazilian Institute of Geography and Statistics) demographic census in Brazil, implying the use of HDI and Gini Index data for the year 2010, which may no longer represent the current local reality.

In addition, the lack of studies with self-assessment of health in the oncology population, mainly at the regional level, proved to be another limiting factor, since most of the works in the area are concentrated in the populations of the South and Southeast regions of Brazil. This made it difficult to discuss some findings, especially those related to HDI, the Gini coefficient, and the location of patients.

Conclusion

It was possible to elucidate some of the main factors influencing self-perception health, such as age, with younger individuals having a more positive perception of their health when compared to older people and the type of coping adopted by cancer patients since emotional coping was associated with a more negative self-perception. The staging was also significant as a factor for worsening self-rated health for cancer patients who had already completed treatment and were being followed up.

Place of residence and related findings were also important. Patients residing in Mossoró had worse self-rated health than residents in other areas. A high HDI was also associated with worse self-rated health, which is in line with the finding of the location. It is evident, then, that self-rated health is also influenced by several other urban problems.

More humanized care for patients, especially the elderly, with individualized medical and psychological follow-up, redirecting thoughts, optimizing comorbidities, and providing greater social and family support would be interventions to be considered. In addition, a multidisciplinary approach, also with psychological support, can intervene in the patient's coping, redirecting him to an active search for social support, information, and solutions, readjusting his coping and improving his self-perception in health, with impacts on the clinical outcome, mortality, and survival. To that end, it is important to develop new research aimed at more thoroughly identifying effective methods for preventing deficits in self-perception quality among individuals with cancer, considering the potential risks involved.

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