



## ORIGINAL ARTICLE

### PROFILE AND QUALITY OF LIFE OF PATIENTS WITH ESOPHAGEAL AND GASTRIC CANCERS

#### PERFIL E QUALIDADE DE VIDA DE PACIENTES COM CÂNCER DE ESÔFAGO E DE ESTÔMAGO PERFIL Y CALIDAD DE VIDA DE PACIENTES CON CÁNCER DE ESÓFAGO Y DE ESTÓMAGO

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#### ABSTRACT

**Objective:** to identify the sociodemographic profile of patients with esophageal and gastric cancer, assess the overall quality of life and compare it with respect to sex and period of life cycle. **Methodology:** prospective analytical cross-sectional study. The questionnaire proposed by the *European Organization for Research and Treatment of Cancer, Quality of Life Core-30-Questionnaire* and a sociodemographic questionnaire were used. The sample consisted of 41 patients (average age 61.6, SD = 9.9 years), mostly men (85.4%), married (73.2%), 61% with esophageal cancer and 39% with stomach cancer. **Results:** mainly affected domains were: role performance, emotional function and the symptoms "lack of appetite", "fatigue" and "insomnia." Men had more often nausea and vomiting and adults had more often lack of appetite and financial difficulties. **Conclusion:** the results corroborate literature and can be applied to identify the effects caused by cancer and its treatment on the quality of life of patients. **Descriptors:** Quality of Life; Esophagus Cancer; Stomach Cancer.

#### RESUMO

**Objetivo:** identificar o perfil sociodemográfico de pacientes com câncer de esôfago e estômago, avaliar a qualidade de vida global e compará-la relativamente ao sexo e ao ciclo de vida. **Metodologia:** estudo transversal analítico prospectivo. Foi utilizado o questionário *European Organization for Research and Treatment of Cancer, o Quality of Life Core-30-Questionnaire* e questionário sociodemográfico. A amostra constituiu-se de 41 pacientes (idade média 61,6; DP = 9,9 anos), sendo a maioria homens (85,4%), casados (73,2%), 61% apresentavam câncer de esôfago e 39% câncer de estômago. **Resultados:** os domínios mais afetados foram: desempenho de papel, função emocional e sintomas "falta de apetite", "fadiga" e "insônia". Os homens apresentaram mais náuseas e vômitos e os adultos apresentaram mais falta de apetite e dificuldades financeiras. **Conclusão:** os resultados corroboram com a literatura e podem ser aplicados na identificação dos efeitos que o câncer e seu tratamento têm na qualidade de vida dos pacientes. **Descritores:** Qualidade de Vida; Câncer de Esôfago; Câncer de Estômago.

#### RESUMEN

**Objetivo:** identificar el perfil sociodemográfico de pacientes con cáncer de esófago y estómago, evaluar la calidad de vida global y compararla relativamente al sexo y al ciclo de vida. **Metodología:** estudio transversal analítico prospectivo. Fue utilizado el cuestionario *European Organization for Research and Treatment of Cancer, el Quality of Life Core-30-Questionnaire* y el cuestionario sociodemográfico. La muestra fue compuesta por 41 pacientes (edad media 61,6; DP = 9,9 años), siendo la mayoría hombres (85,4%), casados (73,2%), 61% presentaban cáncer de esófago y 39% cáncer de estómago. **Resultados:** los dominios más afectados fueron: desempeño de papel, función emocional y síntomas "falta de apetito", "fatiga" y "insomnio". Los hombres presentaron más náuseas y vómitos y los adultos presentaron más falta de apetito y dificultades financieras. **Conclusión:** los resultados coinciden con la literatura y pueden ser aplicados en la identificación de los efectos que el cáncer y su tratamiento tienen en la calidad de vida de los pacientes. **Descriptor:** Calidad de Vida; Cáncer de Esófago; Cáncer de Estómago.

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## INTRODUCTION

The World Health Organization (WHO) estimated that in the decade starting in 2030 there will be 27 million cases of cancer (CA), 17 million deaths from CA and 75 million people living annually with CA.<sup>1</sup>

Esophageal and stomach cancers have gained prominence in global statistics.<sup>2</sup> The latest worldwide estimate revealed nearly one million new cases of stomach CA in 2012, this way assuming the fifth place among the most common malignant tumors in the world, after lung, breast, prostate and colorectal cancers, and the third leading cause of death due to CA in both sexes in the world. In the case of esophageal CA, this is the eighth most common type of CA in the world with an estimate of 456,000 new cases in 2012 and representing the sixth most common cause of death by CA, with an estimate of 400,000 deaths.

In Brazil, 12,870 new cases of stomach CA in men and 7,520 in women are estimated for the year 2014. These values correspond to an estimated risk of 13.19 new cases per 100,000 men and 7.41 per 100,000 women. With regard to esophagus CA, 8,010 new cases of esophageal cancer in men and 2,770 in women are expected in Brazil for 2014. These values correspond to an estimated risk of 8.18 new cases per 100,000 men and 2.70 per 100,000 women.<sup>3</sup>

Stomach CA is the fourth most common CA in men and the sixth most common in women in the South of Brazil. Esophageal CA is the fifth most frequent in men and 13th more frequent in women the South region.<sup>3</sup>

Scientific advances in new treatments and diagnostic methods made the cure for CA as well as increased life expectancy to become an attainable possibility. Patients were subjected to massive doses of cytotoxic drugs or radiation, by chemotherapy (CT) and radiotherapy (RT), respectively, causing a variety of side effects.<sup>4</sup> However, although life length of the person under treatment is extended, this does not necessarily imply quality of life (QOL).

For these reasons, health-related QOL is now taken into account along with disease-free survival and absence of recurrence of CA, one of the most important parameters to assess the impact of a CA treatment in patients.<sup>5</sup>

There are many definitions of QOL. One of the most used concepts is the one offered by the WHO which states that QOL comprises objective and subjective aspects and include functionality, cognitive competence and

interaction of the individual with the environment and the perception by individuals or groups of the satisfaction of their needs and of what is not denied them in propitious occasion for their achievement and their happiness.<sup>6</sup>

Thus, this study has the following objectives:

- ◆ To identify the sociodemographic profile of patients with esophageal and gastric cancer
- ◆ To assess the overall quality of life and compare it with respect to sex and period of life cycle.

## METHOD

This is a prospective analytical cross-sectional study linked to the institutional research "Quality of life of cancer patients assisted in a High Complexity Cancer Treatment Center - CACON" of the Regional University of the Northwest of Rio Grande do Sul State (Unijuí). The study was submitted to appreciation by the Ethics Committee of Unijuí and approved on the opinion embodied 275/2010, on October 18, 2010.

The study population corresponded to 670 oncologic patients treated at the High Complexity Cancer Treatment Center (CACON) located in the Northwest Region of the State of Rio Grande Sul, Brazil, and representing 30% of the population monthly assisted by this service. The following criteria were adopted for inclusion: patient under CT or RT or conjugated treatment; in the case of patients undergoing chemotherapy, the patient should have necessarily completed one CT cycle; in the case of radiotherapy, patients from the first session on were included. Patients participating in protocols of clinical research of the hospital were excluded once that they already respond to such instruments as part of the routinely assessment in this institution. Also, patients with cognitive impairment and unable to answer the instruments, as attested in medical records, were excluded.

Forty-one patients from the database of institutional research diagnosed with esophageal and stomach cancers were selected for this study and these correspond to 6.1% of the institutional research population.

The institutional research occurred from April to December 2011. Data were collected through interviews, analysis of medical record (documentary) and application of the evaluation protocol of quality of life proposed by the *European Organization for*

*Research and Treatment of Cancer, Quality of Life Core-30-Questionnaire* - EORTC QLQ-C30<sup>7</sup> properly validated for Brazilian population.<sup>8</sup> Variables selected from the database for this research were: socio-demographic data (age, sex, marital status, level of education and income), type of treatment (CT, RT or conjugated - CT and RT) and dimensions of the QOL questionnaire.

The questionnaire of the *European Organization for Research and Treatment of Cancer, Quality of Life Core-30-Questionnaire* - EORTC QLQ-C30 addresses five functional scales (physical function, cognitive function, emotional function, social function and role performance), three symptom scales (fatigue, pain, nausea and vomiting), a scale of QOL and overall health, six other items assessing commonly reported symptoms of patients with CA (dyspnea, lack of appetite, insomnia, constipation and diarrhea) and evaluation scale of financial impact of treatment and of the disease.

The scores of scales and measures range from zero to 100 and a high score represents a high level of response. Thus, if the score shown in the functional level is high, this represents a healthy functional level, while a high score for the symptom scale represents a high level in the range of symptoms and side effects. Standards recommended by the EORTC were used for interpretation of generated scores.<sup>9</sup> For the purpose of analysis and comparison, QV<sup>10</sup> scale parameters were used and 70 points were established as cutting threshold: less than 70 points = reasonable QOL and values above 70 points = satisfactory QOL.

In order to compare period of life cycle, patients were divided into two groups: adults (20-59 years old) and elderly (60 years old or over), once Brazil's elderly statute considers as elderly the individuals aged at 60 years or over.<sup>11</sup>

Statistical analyses were performed using the *Statistical Package for Social Sciences* (SPSS). Data were analyzed using descriptive statistics; measures of central tendency and dispersion were used for analysis of quantitative variables and absolute and relative frequencies were used for qualitative variables. A test for nonparametric and independent variables (Mann-Whitney test) was used to compare the mean of groups. Reliability of 95% was adopted for the comparison of means.

## RESULTS

The average age of the 41 participants was  $61.6 \pm 9.9$  years (95% CI = 58.4 and 64.7), minimum age was 44 years and maximum age, 82 years. Among these, 61% (25) were diagnosed with esophageal cancer and 39% (16) with gastric cancer.

Regarding gender, 85.4% (35) were male and 14.6% (6) were female and most of them, 75.6% (31), were married. As for level of education, 80.4% (33) did not complete elementary school, and 73.2% (30) have incomes between 1 and 2 minimum salaries, as shown in Table 1. As for the treatment, 70.7% (29) of patients did CT; 9.8% (4) did RT and 19.5% (8) did combined therapy.

Table 1. Sociodemographic profile of patients assisted in a CACON of the Northwest region of Rio Grande do Sul, Brazil, in 2011.

Variable	n	%	
Age group	Adult 20 - 59 years	17	41.5
	Elderly $\geq$ 60 years	24	58.5
Sex	Male	35	85.4
	Female	6	14.6
Marital status	Married	31	75.6
	Single	3	7.3
	Widow/widower	3	7.3
	Separated or divorced	4	9.8
Education	Complete elementary school	4	9.8
	Incomplete elementary school	33	80.4
	Complete high school	2	4.9
	Incomplete high school	2	4.9
Income*	Bellow 1 minimum salary	3	7.3
	1 a 2 minimum salaries	30	73.2
	3 a 8 minimum salaries	8	19.5

\* Based on the minimum salary in the year 2011 which was R\$ 545.00

Table 2 shows means and standard deviations found of results of the QLQ-C30 instrument. General Health Status has an

average of 69.95 with standard deviation of about 18.86. Regarding functional scales, the highest score is that of the cognitive function

(82.90) which is related to the ability of concentration and memory, followed by social (78.10), physical (71.80) and emotional (70.27) functions. With respect to Role Performance, a lower score (64.61) was found in comparison to other scores and this shows

that patients have difficulty in performing leisure and work activities.

In symptom scales, the predominant symptom was "loss of appetite" with a score of 33.29, followed by "fatigue" (31.05) and "insomnia" (30.05).

Table 2. Quality of life of patients assisted in a CACON of the Northwest region of Rio Grande do Sul, Brazil, in 2011.

Variable	Mean	SD
Overall health	69.95	18.86
Functional scales		
Physical function	71.80	19.82
Role performance	64.61	31.43
Emotional function	70.27	24.72
Cognitive function	82.90	21.52
Social function	78.10	19.09
Symptoms scales		
Fatigue	31.05	22.35
Nausea and vomiting	22.37	27.02
Dyspnea	17.02	28.01
Pain	25.66	31.21
Insomnia	30.05	37.15
Loss of appetite	33.29	35.01
Constipation	20.29	31.53
Diarrhea	12.15	25.52
Financial hardship	21.12	27.58

SD = standard deviation

Tables 3 and 4 show the comparison of means of variables analyzed by the EORTC QLQ-C30 instrument according to gender and the period of life cycle, respectively. The

item "nausea and vomiting" showed statistically significant differences when comparing men to women, women presenting higher scores.

Table 3. Comparison of means of variables analyzed by the EORTC QLQ-C30 instrument according to sex of patients assisted in a CACON of the Northwest region of Rio Grande do Sul, Brazil, in 2011.

	Sex	Mean	SD	p
Overall health	Male	71.00	15.3	0.90
	Female	63.83	34.4	
Functional scales	Male	73.86	19.6	0.15
Physical function	Female	59.83	18.1	
Role performance	Male	65.20	29.8	0.98
	Female	61.17	42.9	
Emotional function	Male	69.71	24.9	0.76
	Female	73.50	25.4	
Cognitive function	Male	84.71	17.2	0.70
	Female	72.33	38.9	
Social function	Male	79.11	19.0	0.43
	Female	72.17	20.0	
Symptoms Scale	Male	29.71	21.2	0.52
Fatigue	Female	38.83	28.9	
Nausea and vomiting	Male	17.14	20.3	*0.03
	Female	52.83	41.3	
Dyspnea	Male	15.20	26.0	0.45
	Female	27.67	38.9	
Pain	Male	15.20	26.0	0.33
	Female	27.67	38.9	
Insomnia	Male	30.43	36.5	0.70
	Female	27.83	44.3	
Loss of appetite	Male	29.49	33.1	0.13
	Female	55.50	40.4	
Constipation	Male	19.97	30.4	0.95
	Female	22.17	40.3	
Diarrhea	Male	11.37	22.7	0.84
	Female	16.67	40.8	
Financial hardship	Male	20.94	25.6	0.67
	Female	22.17	40.3	

SD = standard deviation

\*  $p \leq 0.05$  (statistically significant)

When comparing means of QOL with life period, "loss of appetite" ( $p = 0.00$ ) and "financial difficulty" ( $p = 0.03$ ) were significantly showed to be associated with age

with higher scores for adults in relation to elderly.

Table 4. Comparison of means of variables analyzed by the instrument EORTC QLQ-C 30 according to life period of patients assisted in a CACON of the Northwest region of Rio Grande do Sul, Brazil, in 2011.

	Life period	Mean	SD	p
Overall health	Adult	69.24	15.4	0.42
	Elderly	70.46	21.2	
Functional scales	Adult	67.00	18.5	0.15
	Elderly	75.21	20.3	
Physical function	Adult	58.71	35.3	0.38
	Elderly	68.79	28.3	
Emotional function	Adult	64.65	26.1	0.20
	Elderly	74.25	23.4	
Cognitive function	Adult	83.29	17.6	0.74
	Elderly	82.63	24.2	
Social function	Adult	74.59	20.4	0.36
	Elderly	80.58	18.0	
Symptoms scales	Adult	34.53	24.2	0.39
	Elderly	28.58	21.0	
Fatigue	Adult	30.41	29.0	0.07
	Elderly	16.67	24.5	
Nausea and vomiting	Adult	17.65	31.4	0.78
	Elderly	16.58	25.9	
Dyspnea	Adult	35.41	35.8	0.09
	Elderly	18.75	26.1	
Pain	Adult	39.24	42.9	0.30
	Elderly	23.54	31.8	
Insomnia	Adult	51.00	37.5	*0.00
	Elderly	20.75	27.4	
Loss of appetite	Adult	25.47	32.3	0.26
	Elderly	16.63	31.0	
Constipation	Adult	9.76	19.5	0.86
	Elderly	13.83	29.3	
Diarrhea	Adult	33.24	33.3	*0.03
	Elderly	12.54	19.0	

SD = standard deviation

\*  $p \leq 0.05$  (statistically significant)

## DISCUSSION

The results of this study show that patients with esophagus and stomach CA assisted in a CACON of southern Brazil are mostly men over 60, married, with low education and low income.

The results found in the present study are supported by literature. This confirms the prevalence of esophageal and gastric cancers in men and that the incidence of CA markedly increases with age just as it happens in other diseases. Low socioeconomic level by itself does not increase the risk of CA, but its correlation with several risk factors such as diet, tobacco use, and association with *H. pylori* infection, especially in the case of stomach CA, does. Data associated with low education may find justification in the ignorance that patients have about CA risk factors and the difficulties of understanding prevention and treatment aspects.<sup>12-13</sup>

In a study<sup>14</sup> on QOL of 30 patients with stomach CA, the profile of patients was characterized by an average age of 63.02 years, prevalence of men, married, with elementary education. Another study<sup>15</sup> developed with gastric cancer patients showed that 55% of subjects were men. Among 95 patients with esophageal CA listed

in a study<sup>16</sup> carried out in Taiwan, the average age was 59 years. Additionally, a study<sup>17</sup> developed with esophageal (148) and stomach (86) cancer patients in hospitals of France, Germany, the UK and Sweden pointed out that most were male, married, with complete elementary school, this last data on level of education being contrary to what was found in our present study.

Regarding level of education, a research<sup>18</sup> carried out with 70 patients with stomach CA reveals that 61% (43) had not completed elementary school. Studies examining the QOL of patients with other types of neoplasms corroborate the results found in our study that the majority of patients have incomplete elementary school.<sup>19-20</sup>

With regard to income, a study<sup>14</sup> with subjects with gastric CA reveals that two thirds of patients do not possess paid employment, and a study<sup>21</sup> on QOL related to breast CA was noted that more than 80%, a total of 110 patients, belonged to middle and lower socioeconomic classes. Both studies are in accordance with the results found in the present study.

The results of the EORTC QLQ C30 instrument presented in Table 2 make possible to characterize the QOL of esophagus and stomach CA patients. Notably, subjects

believe that they enjoy a reasonable overall health, what is deducted from their attributing a value of 69.95 to overall health, a figure similar to that found in a study<sup>10</sup> that used the same instrument with a population mostly affected by gastrointestinal CA.

Role performance was found to be the item in the functional scale that mostly affects QOL. This can be interpreted by the difficulty of performing work or leisure activities.<sup>22</sup> Studies developed with patients with esophageal and/or stomach CA also report role performance as the most affected area, corroborating our results.<sup>17, 23</sup>

The analysis of other items in the Functional Scale makes clear that emotional function followed by physical function have the lower scores and this indicates that patients feel irritable, tense, depressed and anxious, and have difficulties in carrying out tasks such as bathing, feeding and dressing.<sup>22</sup>

The best results are found in the social and cognitive functions. This shows that physical condition and treatment interfere little in family life and social activities, and that patients have little difficulty in concentrating and using memory.<sup>22</sup>

The QLQ-C30 instrument also allows for characterization of symptoms experienced by patients that influence directly or indirectly the QOL. Higher averages were found for the symptoms "loss of appetite", "fatigue" and "Insomnia" according to Table 2. These contribute to the result of overall health in this study, by interfering negatively on QOL. Similar results are found in another study.<sup>23</sup>

The "loss of appetite" stands out in this study as the most frequent symptom or greater impact on patients' lives. That symptom is a common complication found in patients with CA, especially those with tumors of the gastrointestinal tract, which tend to have more frequent nutritional disorders than those with other types of tumor.<sup>24</sup> We emphasize, thus, the importance of acknowledging the loss of appetite as a symptom in patients with CA for studies of QOL.<sup>23</sup>

"Fatigue" was the symptom the caused greater impact on the lives of 148 patients with esophageal CA and 86 patients with gastric CA.<sup>17</sup> This symptom can be defined as a persistent and subjective sense of tiredness related to the disease or to its treatment that interferes with usual activities.<sup>25</sup> Finally, "dyspnea" and "diarrhea" were the least common symptoms found in our study and corroborate other findings in studies using the same instrument.<sup>26</sup>

The only variable showing statistically significant differences when comparing QOL of men and women is "nausea and vomiting". Women feel more nauseated and with more vomiting than men (see Table 3). When comparing QOL of adults and elderly, a relevant statistical significance is found in the variable "loss of appetite". Similar results were found in a study<sup>10</sup> with 30 patients, the majority (53.3%) with gastrointestinal tumor, where adult patients have a higher score for "loss of appetite" than the elderly (see Table 4). Another variable with significant p value was financial difficulty. The results show that adults perceive major financial difficulties caused by the physical condition and the treatment.

## CONCLUSION

The presented set of results allowed for the characterization of the sociodemographic profile of patients with esophageal and stomach CA treated at a CACON of southern of Brazil and also allowed the appreciation of some possible impacts that esophagus and stomach cancers have on patient QOL. Patients are mostly male, over 60, married, with low education and low income. Regarding QOL scores, the lowest values were found for the variables role performance and emotional function, and the symptoms loss of appetite, fatigue and insomnia. These variables may have influenced the overall health value found, which was considered reasonable.

Therefore, it is the responsibility of health professionals involved in the care of patients with these malignancies to observe the results of the present study and the profile features and most affected areas in order to act in the prevention of new esophagus and stomach CA cases and to develop more effective interventions to patients in treatment, in order to improve their quality of life.

The results found in this study corroborate the literature and can be applied in the identification of CA as well as treatment effects on patient QOL. However, we note that this sample may not represent the totality of patients affected by these types of cancers in south region of Brazil. This perception points to the need for greater investment in research in this area.

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