Social and Social Security Profile: Influence on the Quality of Life of Patients Undergoing Radiotherapy

Perfis Social e Previdenciário: Influência na Qualidade de Vida dos Pacientes submetidos à Radioterapia
Perfil Social y de Seguridad Social: Influencia en la Calidad de Vida de los Pacientes Sometidos a Radioterapia

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ABSTRACT
Introduction: Cancer is being diagnosed more and more frequently all over the world, and advances in radiotherapy treatment are extending the survival time for affected patients, however, little attention is given to the quality-of-life and the management of emotions triggered by their social condition. **Objective**: To analyze the social and social security profile of patients undergoing radiotherapy treatment at *Hospital de Base de São José do Rio Preto* and to correlate them with their quality-of-life. **Method**: Descriptive exploratory study, with a quantitative approach, with 60 patients diagnosed with cancer in radiotherapy. Two evaluation questionnaires, one socioeconomic and social security of Graciano & Lehfeld and the Whoqol-bref generic of quality-of-life. **Results**: During treatment there was a negative effect on quality-of-life, in the physical and psychological domains, impacting the positive correlations between education *versus* quality-of-life and retirement *versus* quality-of-life, revealing that social and social security issues have considerable influence on these specificities. **Conclusion**: The importance of the communicative behavior of the multidisciplinary team, through well-coming, qualified and humanized listening, and a comprehensive consultation evaluating the quality-of-life can minimize the factors affecting daily life and encourage them to adhere to the treatment satisfactorily.
Key words: neoplasms/radiotherapy; social conditions; retirement; quality of life.

RESUMO
Introdução: O câncer está sendo diagnosticado cada vez com mais frequência em todo o mundo, e os avanços no tratamento radioterápico estão estendendo o tempo de sobrevivência para os pacientes acometidos, contudo, pouca atenção é dada à qualidade de vida e ao gerenciamento das emoções desencadeadas por sua condição social. **Objetivo**: Analisar os perfis social e previdenciário dos pacientes em tratamento radioterápico no Hospital de Base de São José do Rio Preto e correlacioná-los à sua qualidade de vida. **Método**: Estudo exploratório, descritivo, com abordagem quantitativa, realizado com 60 pacientes com diagnóstico de câncer em tratamento radioterápico. Foram utilizados dois questionários avaliativos, o de perfil socioeconômico e previdenciário da Graciano & Lehfeld e o genérico de qualidade de vida Whoqol-bref. **Resultados**: Durante o tratamento, houve um efeito negativo significativo na qualidade de vida, nos domínios físico e psicológico, impactando as correlações positivas entre escolaridade *versus* qualidade de vida, e aposentadoria *versus* qualidade de vida, revelando que as questões sociais e previdenciárias têm consideráveis influências nessas especificações. **Conclusão**: A importância do comportamento comunicativo da equipe multidisciplinar, realizado por meio de acolhimento, escuta qualificada e humanizada, e um atendimento abrangente avaliando a qualidade de vida podem minimizar os fatores que afetam o cotidiano e encorajá-los à adesão correta do tratamento.
Palavras-chave: neoplasias/radioterapia; condições sociais; aposentadoria; qualidade de vida.

RESUMEN
Introducción: El cáncer se diagnostica cada vez con más frecuencia en todo el mundo, y los avances en el tratamiento de radioterapia están ampliando el tiempo de supervivencia de los pacientes afectados, sin embargo, se presta poca atención a la calidad de vida y a la gestión de las emociones desencadenadas por su condición social. **Objetivo**: Analizar el perfil social y de seguridad social de los pacientes en tratamiento de radioterapia en el Hospital de Base de São José do Rio Preto y correlacionarlos con su calidad de vida. **Método**: Estudio descriptivo exploratorio, con abordaje integral, realizado con 60 pacientes diagnosticados de cáncer en radioterapia. Se utilizaron dos cuestionarios económicos, el perfil socioeconómico y el previsional de Graciano & Lehfeld y el valor genérico de calidad de vida Whoqol-bref. **Resultados**: Durante el tratamiento hubo un efecto negativo en la calidad de vida, en los dominios físico y psicológico, impactando con correlaciones positivas entre educación *versus* calidad de vida y jubilación *versus* calidad de vida, revelando que las cuestiones sociales y de seguridad social tienen influencias considerables en estas especificaciones. **Conclusión**: La importancia del comportamiento comunicativo del equipo multidisciplinario, respetado y adecuado al tratamiento, y un servicio integral que evalúe la calidad del comportamiento humano pueden minimizar los factores de la calidad de vida diaria y incentivar la correcta adherencia al tratamiento.
Palabras clave: neoplasias/radioterapia; condiciones sociales; jubilación; calidad de vida.

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INTRODUCTION

Cancer is being diagnosed more frequently worldwide and advances in treatment are extending survival time for cancer patients[1].

A recent United Kingdom study concluded that cancer survivors seem to have continuous health problems, worst overall general health and physical well-being, increase of pain, more financial concerns and reduced ability to work compared to individuals undiagnosed with cancer[2]. Understand the consequences of the diagnosis and treatment is more important to optimize the support to the patient and minimize the impact on activities of the daily life[3].

Radiotherapy is one of the basic modalities and most common strategy utilized with nearly 60% of the patients with solid tumors receiving curative or palliative irradiation as part of the therapy[4]. High precision techniques are currently available, a safe and effective procedure sparing normal adjacent tissues[4,5].

In the last two decades, the survival of the patient with cancer improved substantially due to early detection, surgical technical advances and better planning of radiotherapy[5].

In the last 30 years, the investigators have been adopting several methods to evaluate the efficacy of therapeutic interventions based on the impacts on health-related quality-of-life (HRQoL). This initiative led to a relatively change of cancer treatments, not only prolonging life but keeping the quality-of-life (QoL) as long as possible[6].

The QoL of a patient with cancer before and after the treatment is a relevant question, especially for cancer survivors, their families and health caretakers[7]. QoL in the perspective of cancer can be defined as a feeling of well-being across several physical, psychological, social and spiritual dimensions and changes in one of them can impact perceptions in other dimensions too[8]. Current studies report that patients with cancer should ask for information of treatment-related adverse events and required actions to reduce them before the procedure regardless of the type of treatment[8,9].

According to the World Health Organization (WHO)[10], QoL is not only the absence of disease or infirmity but the ability of an individual to live productively and pleasantly, with family and multidisciplinary medical support ensuring the required conditions to reduce the anxiety.

Patients with cancer should receive enough information prior to beginning any procedure/treatment and integrated to it for improved safety and autonomy[11].

Pereira et al.[12] indicate that the analysis of HRQoL of oncologic patients is a form of quantify scientifically the consequences of diseases and treatments as perceived subjectively by the patients. Thus, the evaluation of HRQoL gained relevance as measure of evaluation of the efficacy, effectiveness and impact of certain treatments because, in addition to maintaining the multidimension and general characteristics of QoL is a measure that highlights the symptoms, impairment and limitations caused by the infirmities[12].

However, further to radiotherapy effects directly impacting physical aspects, socioemotional repercussions as fear, stress, anxiety, body image change occur too as warning signs of anguishes and even depression[13]. The knowledge and appraisal of the singularity help health professionals to conduct their actions beyond technical aspects, expanding their field of action to offer comprehensive and assertive care[11].

Several studies[14,15] indicate socioeconomic and demographic factors interfering on the HRQoL of oncologic patients and review how these variables associated to sociodemographic and social security profiles in different settings can minimize the negative impacts of the treatment.

Cancer treatment is going through a disease-centered process to provide patient-customized treatment and the action of the multidisciplinary team defines the strategies through shared decision-taking among health professionals and the patient[16].

No studies evaluating the impact of social and social security profile of patients with cancer on the QoL in radiotherapy treatment were found in the literature, however, Pereira et al.[12] report that the increase of incidence and prevalence of cancer became a public health problem with new demands on health services. The authors affirm that the working limitations the treatment causes leads the patient to seek social security support.

The objective of this article is to analyze the social and social security profile of patients diagnosed with cancer submitted to radiotherapy treatment and evaluate the QoL due to the knowledge gap on this theme.

METHOD

Observational, cross-sectional, quantitative and analytic study developed at the radiotherapy outpatient unit of "*Hospital de Base de São José do Rio Preto*, State of São Paulo, from March to July 2021. All the patients older than 18 years of age, of both sexes, lucid, able to respond verbally to the study instruments diagnosed with cancer by the National Health System (SUS) were enrolled and initiated the radiotherapy treatment at the institution.

Patients with clinical complications (respiratory, cardiac or neurologic) during data collection were

excluded because they did not meet the minimum required conditions to participate according to the responses to the questions: present location, year of birth, origin, month and day of the week.

The Institutional Review Board of "*Faculdade de Medicina de São José do Rio Preto* (Famerp)" approved the study, report number 3,922,130 (CAAE (submission for ethical review: 28218620.0.0000.5415).

The generic questionnaire Whoqol-bref[16], consisting in physical, psychological, social relations and environment domains was utilized to evaluate the QoL and the social profile through the socioeconomic and social security questionnaire of Graciano et al.[17], which addresses the following indicators: socioeconomic status, number of family members, education, occupation and housing presented in a table titled "Socioeconomic Evaluation Instrument". The patient was contacted previously to be informed about the study and obtain its consent. The data were collected during the consultations through the instruments applied in a single encounter.

The size of the sample was calculated with the formula:

$$n0=1/E^2 \text{ and } n=(N.n0)/(N+n0)$$

where n0 is the initial approach of the population and n is the final sample size with sampling error (E) of 5%, reaching n of 60 (approximately 80% of the total).

The sample selection was based in non-probabilistic, consecutive sampling formed by individuals enrolled consecutively, accessible for a period of time and who met the inclusion criteria. The data were entered in an Excel spreadsheet and the Statistical Package for the Social Science (SPSS) was utilized for statistical tests: frequency and percentage to characterize the sample, mean and standard-deviation to analyze the responses to the instruments and Pearson and Spearman correlation tests to compare the responses. The instrument Whoqol-bref to assess quality-of-life was calculated according to the manual of instructions.

RESULTS

During the data collection period, 60 patients were eligible to join the study, 65% (n-39) males and 35% (n-21) females, mostly married (81.6%; n=49), and 51.6% (n=31) claimed they were cared by their spouses with good family relationship (96.8%; n=58) and the majority had completed (63.3%; n=38) the elementary school. In average, they were in the 10th radiotherapy session, living in their own property in the urban area,

between 50km to 100 km from the origin city and the hospital. The majority, 70% (n=42) travelled in City buses to "*Hospital de Base*" for radiotherapy treatment. Most of them (51.6%; n=31) was retired for length of service followed by 23.3% (n=14) for disability, 33.4% (n=20) used alcohol and 50% (n=30) smoked.

It was possible to define a specific social profile of the patients with low education, catholic, rural workers, married and who did not work according to Table 1.

Table 1. Characterization of the patients according to occupation, work and social security (n=60)

Variable	n	%
Occupation		
Rural worker	17	28.3
House maid/janitorial	15	25
Metallurgy/machine operator	6	10
Driver	5	8.3
Seamstress	3	5
Mason	3	5
Commerce	2	3.4
Trade representative	2	3.4
Others	7	11.6
Worked during treatment		
Yes	10	16.7
No	50	83.3
Social Security		
Retired	31	51.6
Sickness benefit	6	10
Retired due to impairment	14	23.3
Salary	4	6.6
Others	5	8.3

The most frequent malignant neoplasm was head and neck cancer (21.6%; n=13), followed by prostate cancer (18.3 %; n=11). Most of the study patients was submitted to chemotherapy and radiotherapy concomitantly contingent upon clinical staging and histology of each patient.

Mean and standard-deviation of the responses were calculated for each domain of the generic questionnaire Whoqol-bref[16] (Table 3) to detect which aspects of QoL were unsatisfactory during the radiotherapy treatment.

Cronbach's Alpha coefficient was utilized to measure the internal consistency or reliability of the instrument in relation to the domains (0.73), facets (0.91) and each domain separately – physical (0.88), psychological (0.74), social relations (0.73) and environment (0.60), deemed as satisfactory results of the study.

The physical (54.) and psychological (61.1) aspects were the most compromised, negatively impacting the general QoL (61.4).

Table 2. Characterization of the clinical aspects of the patients (n=60)

| Types of cancer	n	%
Prostate	11	18.3
Head/neck	13	21.6
Bronchus/lungs	9	15
Breast	8	13.3
Rectum	6	10
Cervix	5	8.3
Esophagus	2	3.3
Brain	2	3.3
Bladder	1	1.7
Skin	1	1.7
Myeloma	1	1.7
Anal canal	1	1.7
Oncologic treatment		
Surgery and radiotherapy	4	6.6
Surgery/chemotherapy/radiotherapy	22	36.6
Chemotherapy/radiotherapy	34	56.8

Based in the results obtained, it was attempted to identify the most negative aspects for QoL in every domain. Figure 1 portrays the evaluation of the scores of the patients in radiotherapy treatment, the most compromised (<50) were pain, discomfort and medication or treatment-dependence belonging to the physical domain, in addition to negative feelings within the psychological domain.

The work-related aspects within physical domain, positive feelings of the psychological domain and financial resources related to the environment were rated low which is a negative impact on QoL (<50). Three interviewees failed to respond to the questions of sexual activity, but it did not compromise the general statistics with only 57 respondents, however, as part of the domain of social relations, the score was impacted (50).

Pearson's (r) and Spearman's (p) tests were utilized to calculate the correlations among education *versus* QoL with positive results, r=0.78 and $p \leq 0.01$; as low the

Table 3. Whoqol-bref scores of patients in radiotherapy (n=60), March-July 2021

Domains	Mean	Standard-deviation	Coefficient of Variability	Minimum	Maximum	Range
Physical	54.4	3.00	23.60	6.29	17.71	11.43
Psychological	61.1	2.75	19.93	8.00	18.67	10.67
Social Relations	67.6	2.92	19.67	6.67	20.00	13.33
Environment	67.8	2.00	13.58	10.50	19.00	8.50
General Quality-of-life	61.4	4.04	31.40	4.00	20.00	16.00
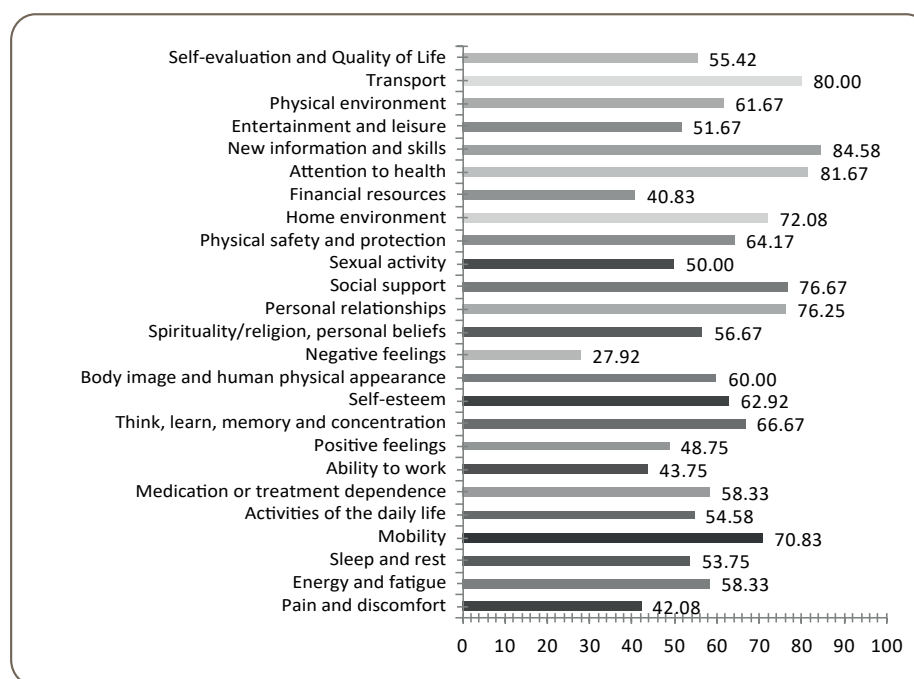
Figure 1. Results of each domain of Whoqol-bref of patients in radiotherapy (n=60)

education level is, lower is the QoL and retirement *versus* QoL (r=0.96 and $p \leq 0.01$) had positive correlations, suggesting that as large the retirement pension is, better is the QoL.

Specific and linear characteristics were noticed in the results of the study patients indicating the relevance to relate the domains of Whoqol-bref with social and social security profiles.

DISCUSSION

The results show that males (65%), in the age-range of 36-82 years of age (mean 61 years), mostly married (81.6%), low education/incomplete elementary school (63.3%), retired (51.6%), alcohol (33.4%) and tobacco users (50%) are the predominant sociodemographic characteristics of the study participants. These information justify the estimates of the National Cancer Institute (INCA)[18] for head and neck cancers, the most incident in 60-years old males, smokers and excessive alcohol use found in the present study.

The majority claim they are catholic (46%), the predominant religion in Brazil since the 16th century consistent with studies of *Fundação Getúlio Vargas* that concluded that in the State of São Paulo, more than 60% of the population claim they are catholic. These findings corroborate the literature about patients in radiotherapy treatment with predominance of males, older than 40 years of age, low education and regular use of tobacco and alcohol[19].

Social isolation, changes, anxieties, fears among others are the aftermath of the COVID-19 pandemic which heavily impacted the application and results of the evaluation of the QoL with clear decline of the domains[20,21].

The low scores of the physical domain including the capacity to work, pain and discomfort (≤50) reveal the impact on the QoL.

The study of Beamer et Grant[22] evaluated 40 women submitted to radiotherapy and worsening of the physical domain of the QoL was found, corroborating this study and associating this symptom to a decline of the global QoL, social concern, psychological and physical well-being.

Rim et al.[23], in a prospective post radiotherapy study on QoL with 1,156 women submitted to surgery and radiotherapy had low scores of pain/discomfort and self-care.

Other categories of the psychological domain (positive feelings) and environment (financial resources) have also revealed worst QoL (≤50). Patients in the last week of radiotherapy according to Yucel et al.[2], had psychological domains affected and consequently, the QoL.

The financial damage to the families is one of the least discussed consequences after the diagnosis according to Silva et al.[24] even with free of charge treatment by SUS; currently, patients with financial difficulties consulted by SUS have to wait for consultations, exams and treatment.

The patients investigated submitted to surgery and radiotherapy have physical and psychological domains compromised, however, associations with the social profile – education, retirement pension – have been found. These two variables were chosen because of the frequency of responses.

No guiding publications addressing these questions were found, but the study of Cabral et al.[25] revealed that the interval from the diagnostic of cancer and beginning of the treatment was greater for patients with more sensitive social characteristics as low education. This conclusion validates the positive correlation among education and quality-of-life of oncologic patients in radiotherapy treatment investigated in the current study.

Yoo et al.[26] detected in their study that social inequalities of patients with cancer, when associated with individual characteristics as education, income, race, among others are disadvantages for some groups if compared to others and can reflect difficulties of access and utilization of services and treatments.

Barata[27] observed that the utilization of health services is a complex resulting from the interaction of several factors as socioeconomic, demographic, cultural and psychic characteristics, health-related needs, quality of the service and health professionals and availability of social and geographic access, among others. In addition, the author affirms that these factors can cause different impacts on access to health contingent upon the type of consultation (prevention, cure or rehabilitation), service (admission, chemotherapy and radiotherapy) and level of complexity (primary, specialized or high complexity).

Braz et al.[6] reported that many scientific societies recommend multidisciplinary cancer teams as a key component of an effective treatment policy. For better patient-centered treatment, it is important to understand the respective context with good communication and assertiveness[16,17].

Profiles of low education, race/skin color, poor access to health are interconnected according to Liedke et al.[28] and can reflect inequalities in utilizing oncologic services.

The current investigation attempted to shed light on new information and relations to expand and check the available knowledge.

CONCLUSION

The results reveal a social profile mostly of men, older, married, low education, living in satisfactory conditions in their own property, whose main source of family income is their pension of two minimum wages in average which causes important social issues.

Based in the correlations found the QoL was negatively impacted by several factors and domains.

Health care needs to be provided in its integrality considering the specificities and complexities, acknowledging the social inequities to access the oncologic and radiotherapeutic treatments. Eventually, new strategies for patient-centered humanized treatment will be designed regarding their actual needs to control and prevent the impacting factors of the therapy and QoL.

The investigation was conducted with local population treated at a specific center, which is a limitation of the study to generalize the data. New studies are necessary to contribute to a better understanding of the difficulties faced by patients in radiotherapy, considering the social and social security profiles found in the present study and future systematization of the care provided.

Studies which design the profile and attempt to know the QoL of a certain population can be utilized as signs of social changes through humanized attention and multidisciplinary approach and help the implementation of institutional and public policies.

CONTRIBUTIONS

All the authors contributed substantially to the study design, acquisition, analysis and interpretation of the data, wording and critical review. They approved the final version to be published.

DECLARATION OF CONFLICT OF INTERESTS

There is no conflict of interests to declare.

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