

Original article

Quality of Life in Patients With Malignant Disease

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Abstract

Aim: To assess the quality of life in patients with a malignant disease.

Research subjects and methods: Research included 105 patients with a malignant disease who were receiving stationary and daily treatment at the Radiotherapy and Oncology Department of the University Hospital Center, Osijek, Croatia. A questionnaire containing various demographic data and including a scale for measuring the quality of life in patients with a malignant disease – the Functional Assessment of Cancer Therapy-General (FACT-G) – was used as a research instrument.

Results: Average score on the scale was 89. Level of satisfaction with social/family relationships was significantly lower in older respondents ($p = 0.027$), single persons ($p = 0.018$) and participants with total income under HRK 3,000 ($p = 0.031$). Regarding family and social relationships, the patients receiving hospital day care expressed a significantly higher level of satisfaction ($p = 0.001$), as well as the subjects with college/university qualifications ($p = 0.007$). Patients with malignant disease of the head and neck expressed significantly lower levels of satisfaction on all subscales and with regard to overall health ($p = 0.005$).

Conclusion: Quality of life in patients with a malignant disease is satisfactory.

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Introduction

Quality of life is an extremely complex concept involving various scientific disciplines. Given the complexity and number of perspectives that the concept reflects on, it is almost impossible to provide an unambiguous definition of the quality of life (1). Its definitions vary, just as the manner in which it is assessed. Raphael et al. state that the assessment method can also influence the definition of the quality of life. Whereas a medical approach emphasizes the impact of illnesses and difficulties on the quality of life, an approach focusing on health draws attention to well-being and the abilities required in everyday life (2). Researchers agree that the concept of quality of life is multidimensional and subjective (3). Krizmanić and Kolesarić state that the quality of life is a subjective experience of one's own life determined by objective circumstances in which a person lives, personality traits affecting the experience of reality and the person's specific life experience (4). The concept of quality of life in each person relates to the experience of satisfaction with the way of life, its course and conditions, perspective, possibilities and limitations (5).

Felce and Perry define the quality of life as an overall, general well-being including objective factors and a subjective evaluation of physical, material, social and emotional well-being. It includes personal development and purposeful activity valued through a personal set of values. They also accentuate the linkage of objective and subjective indicators. It has been found that there is a weak connection between a person's subjective feeling of life satisfaction and a self-assessment of the quality of life and objective living conditions (6). A significant correlation of subjective and objective indicators has been found in situations of poverty and misery, when basic human needs are not met. Regarding life in developed countries, some authors stated that "people in the 1990s are, on average, four and a half times richer than their ancestors from the beginning of the 20th century but are not four and a half times happier" (7). Cella and Tulsy presented the four basic dimensions of

the quality of life: physical, business, emotional and social well-being (8).

Patients diagnosed with cancer often experience a reduction in the quality of life to a variable degree, but they can adapt to life with cancer (9). Today, the therapeutic effects in the treatment of patients should no longer be compared and evaluated only on the basis of improvements in laboratory findings and survival of patients, but also on the basis of improvements in their quality of life (10).

Despite a great progress in the treatment of malignant diseases, the course of illness, treatment and psychological challenges have a negative impact on a patient's quality of life (11). Being diagnosed with a malignant disease is in itself stressful. Apart from excessive physical stress caused by illness and its treatment, many patients also experience psychological stress and worry about their diagnosis and prognosis, difficult treatments and decisions, as well as the change in common life functions and roles. A recent study conducted in the United States has shown that long-term cancer survival increases serious psychological difficulties among those who have been disease-free for five-years compared to the general population (12). Malignant disease can lead to major life-style changes; it can cause serious disorders in a person's normal functioning, from illness to severe financial crises (13). It has been found that 33% of individuals diagnosed with cancer experience psychological pain, whereas up to 70% of cancer patients experience some degree of anxiety and depression (14). Regardless of treatment, these individuals experience changes in their physical and emotional integrity, restlessness, pain, changes in appearance, dependence on others and loss of self-confidence, which consequently reduces their quality of life in a short time (15).

People living with malignant diseases have a greater risk of developing various psychological problems. Studies have shown that such patients suffer not only from physical symptoms of a disease, but also from psychological and social stress associated with the diagnosis.

Research has also shown that, apart from the fear of dying, patients feel endangered by interventions, such as chemotherapy or radiotherapy, and they worry about losing their physical integrity, independence and social roles (16). Prolonging a patient's life has always been one of the dominating objectives of traditional medicine. As the success in this direction has increased, it has become clear that such a goal is inadequate. Medicine must strive not only to add years of life, but also help ensure the quality of life acceptable and worthy of human being for the years added (15).

Incidence of malignant diseases (cancer) varies across the world and has been changing over time. Cancer is a major public concern in the entire world. In developed countries, it is often the second leading cause of death after cardiovascular disease. According to the latest international data, 12.7 million new cases are discovered annually, 7.6 million people die of cancer, and 28.0 million people live with cancer within 5 years of diagnosis. Cancer is also the second most significant cause of death in Croatia, from which every fourth resident dies. Cancer incidence rates by the 15 most common primary sites in Osijek-Baranja County in 2013 was 472.5/100,000 for men and 383.8/100,000 for women. Also, cancer incidence rates in Croatia have been increasing (17).

The main objective of this study was to examine the quality of life in patients with a malignant disease. Specific goals were focused on the following issue: examining whether there is a difference in the quality of life in patients with malignant diseases regarding the type of malignant disease, age, gender, education level, marital status, financial situation and place of treatment (day hospital, stationary treatment).

Research Subjects and Methods

Research subjects were patients suffering from malignant diseases who were receiving stationary treatment and those treated in the day hospital at the Department of Radiotherapy

Oncology, Osijek University Hospital Center. There were 105 respondents participating in the study, of whom 71 were treated in a day hospital and 34 were ward patients. Research was conducted from 18 August to 30 October 2015.

A survey questionnaire containing various demographic data (age, gender, level of education, illness, marital status, and financial situation) was used as a research instrument. Functional Assessment of Cancer Therapy-General (FACT-G) scale was used for the self-assessment of the quality of life in malignant patients. FACT-G questionnaire contained 27 particles. It evaluated the four following areas: physical well-being, social/family well-being, emotional well-being and functional well-being. Physical well-being was covered by GP particles (GP 1, 2, 3, 4, 5, 6, 7), social/family well-being was covered by GS particles (GS 1, 2, 3, 4, 5, 6, 7) and emotional benefit was included in GE particles (GE 1, 2, 3, 4, 5, 6). Functional benefits were covered by GF particles (GF 1, 2, 3, 4, 5, 6, 7). The answer for each particle was evaluated on the Likert scale of 0 – 4 (0 – not at all, 1 – a little, 2 – somewhat, 3 – a lot, 4 – very much). Overall result on the whole scale was 0 – 108. Total result for the area of physical and social/family well-being could range from 0 to 28, whereas the result for the area of emotional and functional well-being could range from 0 to 24. The assessment of the quality of life related to seven days prior to the testing day. In all areas of the questionnaire, higher results represented better quality of life (9). In a literature review, Victorson et al. (2008) reported Cronbach's Alpha reliability coefficients from about 78 published studies. Average FACT-G score reliability was .88 and subscales ranged between .71–.83 (ref). Internal consistency for the sample of participants in this research was very good (Cronbach's alpha 0.72 – 0.85) (18).

Statistical analysis

Category data was represented in absolute and relative frequencies. Numerical data was described by the median and the interquartile range limits.

Normality of the distribution of numeric variables was tested by Kolmogorov-Smirnov Test. Differences between normally distributed numeric variables between the two independent groups were tested by the Mann-Whitney U-Test, and, in the case of 3 and more groups of independent groups, by the Kruskal-Wallis Test. Due to a deviation from the normal distribution, the correlation was estimated by the Spearman coefficient of correlation ρ (rho). All p values were two-sided. Level of significance was set to $\alpha = 0.05$.

Statistical analysis of the data was done by the statistical program SPSS for Windows (version 16.0, SPSS Inc., Chicago, IL, USA).

Ethical principles

Prior to the research, a written consent of the Commission for Ethical and Vocational Issues of Nurses at the Osijek University Hospital Center was obtained on 29 June 2015, as well as a written consent of the Head Nurse of the Department of Radiotherapy Oncology of the Osijek University Hospital Center.

All respondents were informed about the purpose of the research. They received a written notice for respondents, a document on consent and a statement of consent of the informed interviewee to participate in the research. They all willingly agreed to participate in the research, which they confirmed by their signature.

Research was conducted in accordance with ethical principles and human rights in research.

Results

Study was conducted on 105 respondents with a malignant disease, of whom 71 (67.6%) were treated in a day hospital, and 34 (32.4%) were patients receiving stationary treatment. Average age of respondents was 62 (interquartile range of 55-71), ranging from 33 to 88 years of age. There were more male than female respondents – 58 (55.2%). Regarding the level of education, 60 (57.1%) of respondents had vocational qualifications. There were 71 (67.0%) married respondents and 93 respondents (88.6%) reported having children. Eight subjects (8.0%) had under HRK 3,000 of monthly household income, 55 (55.0%) of them had monthly household income in the amount of HRK 3,000 to 5,000 and only two respondents had income ranging from HRK 12,000 to 20,000. The most common site of malignant disease was the thoracic region and digestive tract.

With regard to whether the subjects were being treated in a day hospital or receiving stationary treatment, the mean values of single particles and of the overall scale were equal, with the exception of social/family relationships: the patients treated in the day hospital responded significantly better – the median was 24.0 (interquartile range of 22.2 to 26.8) ($p = 0.001$). The mean value on the overall FACT-G scale was 89.0 (interquartile range of 73.3 to 95.5).

The lowest rating on the overall scale was given by those with a lower education level – the median of 80.5 (interquartile range of 64.8 – 94.2). Overall satisfaction was significantly higher in subjects with a college or higher education level – the median of 98.5 (interquartile range 87.1 to 101.8) ($p = 0.007$). Regarding the particles, these subjects were more satisfied with their physical health ($p = 0.009$), social/family relationships ($p = 0.032$), and functional state ($p = 0.016$), while the emotional state was equal regardless of the level of education (Table 1).

Table 1. Quality of life regarding education level

Subscales	Median (interquartile range) regarding education level				p*
	Unqualified	Vocational	College or Graduate	Total	
Physical health	21.5 (15.5 - 25.3)	23 (18.2- 26.0)	26.5 (22.1- 28.0)	23 (18.0- 26.0)	0.009
Social/family relationships	22.1 (17.9 - 26.2)	23 (21.0- 25.0)	25.1 (24.0 - 26.9)	24 (21.0 - 25.9)	0.032
Emotional state	19 (12.0- 22.0)	21 (18.0- 23.0)	22 (18.8 - 23.3)	21 (17.0- 23.0)	0.103
Functional state	20 (16.0 - 24.3)	21 (16.0- 25.0)	25 (21.0- 27.0)	21 (17.0- 25.0)	0.016
Overall FACT-G Scale	80.5 (64.8 - 94.2)	89 (74.2- 95.0)	98.5 (87.1 - 101.8)	89 (73.3 - 95.5)	0.007

* Kruskal-Wallis Test

Patients with malignant disease of the head and neck reported the lowest satisfaction with their physical health (p = 0.004), social/family

relationships (p = 0.003), emotional state (p = 0.044), functional state (p = 0.021) and overall health (p = 0.005) (Table 2).

Table 2. Quality of life regarding site of malignant disease

Subscales	Median (interquartile range) regarding site of malignant disease					p*
	Head and neck	Thoracic region	Digestive tract	Uro-genital tract	Total	
Physical health	17.5 (16.0- 21.0)	24.5 (20.0- 26.0)	21 (15.5 - 25.0)	26 (22.8 - 27.3)	23 (18.0- 26.0)	0.004
Social/ family relationships	18 (16.0 - 22.2)	24 (21.0 - 26.8)	23 (21.0 - 24.7)	24.2 (22.8 - 25.4)	24 (21.0 - 25.9)	0.003
Emotional state	14 (12.0- 22.0)	21 (19.0- 23.0)	18 (15.0 - 22.5)	21 (20.0 - 22.5)	21 (17.0- 23.0)	0.044
Functional state	16 (13.0- 20.0)	22 (19.0 - 25.2)	20 (17.0 - 24.5)	21 (19.5 - 24.0)	21 (17.0- 25.0)	0.021
Overall FACT-G Scale	66.5 (53.0 - 81.2)	90.4 (83.8 - 97.3)	84 (72.0 - 94.9)	92.8 (84.5 - 96.3)	89 (73.3 - 95.5)	0.005

* Kruskal-Wallis Test

Respondents up to 50 years of age were significantly more satisfied with social/family relationships – the median of 26 (interquartile range of 23.2 to 28.0). There were no significant differences in other subscales ($p = 0.027$).

Areas of the scale have a significantly positive correlation ($p < 0.001$).

Discussion

According to the research literature, the most common cancer site was the thoracic region, which is in accordance with our research results. Most respondents had secondary education qualifications, were married and had average income in relation to the standard of our country.

The number of deaths due to prostate cancer has been increasing (19). This is also apparent from our research, which found that malignant diseases of the urogenital tract are the third most frequent diseases.

Regarding physical health, the majority of respondents, 59 (57.8%) of them, stated that they had energy. On the other hand, it is interesting to note that a large number of respondents, 24 (23.5%) of them, were quite or very much lacking in energy. Such a finding was expected considering the nature of the disease, especially of malignant diseases in lung and thoracic regions, as described in the available literature (20).

It is also interesting that patients can hardly meet the expectations of their families. This may point to an inadequate psychological assistance provided to cancer patients and their families. Psychological support for patients and their families is extremely important when they go through the shock and stress of being confronted with a diagnosis and being in the state of fear, loneliness and demoralization between therapies, as well as in critical situations when their condition worsens and prognoses are not optimistic. Support can be offered by the persons whom the patients trust and with whom they are close. Family and friends are play a vital role in providing patients with boost and help (5, 21). This is also apparent from our research, which shows that for the

largest number of respondents, a great amount of support comes from their family or a person close to them, most commonly a partner. The majority of the respondents agreed that their friends were giving them a lot of psychological help and support.

Sexuality, which unfortunately receives very little attention, is a major issue for severely ill patients. Health care staff is so busy that there is no time to ask the patient about their sex life. Such discussions are often confusing for patients, or they are lacking sufficient knowledge to provide an answer to the questions asked. Most people in our community consider talking about sex life indecent. It is still a taboo topic, even in conversation with healthcare staff (22). The majority of subjects did not want to answer the question of whether they were satisfied with their sex life, while 29 of them (40.3%) responded that they were barely or not satisfied with their sex life. It is apparent from our research that a number of respondents were lacking in sexual rehabilitation, which can no longer be a matter of choice rather than a need.

Most of our respondents were sleeping well and enjoying things they do for entertainment. Compared to other researchers who have dealt with the same topic, our results did not deviate from the values of their results. The results support the fact that physical activity and the inclusion of oncological patients and their families in the community contribute to a more successful outcome of rehabilitation, the objective of which is an increase in the quality of life (5).

The overall value of the quality of life in patients with a malignant disease in our study was 89 (FACT-G), which is similar to the results of other studies (8, 5). The majority of research has shown that patients with a malignant disease have a good quality of life. Good social and family relationships certainly have a significant impact on the quality of life of our respondents.

A higher level of satisfaction with the quality of life has been found in highly educated subjects. Higher education leads to a better knowledge about the illness and the manner of coping with it, as well as to increased availability of

information about the treatment and psychological self-help. In the Martinis' research, the results have shown that men aged between 50 and 59, younger people and people with higher education qualifications are more satisfied in all areas of the quality of life (23).

Results of a research conducted on a large group of Australian women, three and twelve months after early breast cancer surgery, have shown that the impact of illness and treatment on the quality of life varies according to age, education and marital status. Single women and those with a lower education level have rated their quality of life as bad in a number of particles (24, 25). Croatian authors have also suggested that a better quality of life is associated with higher education. Higher level of education is positively associated with a greater degree of satisfaction in certain areas of life, as well as with the achievement of patients' goals, wishes and hopes (26).

The lowest score was given by unmarried respondents, especially on the social/family relationships subscale. This is understandable in terms of the impact of family and friends on caring for such patients. The same results were also described in a study conducted in Queensland, where married or cohabiting respondents had better results in the area of social-family relationships than unmarried respondents (8).

A significantly lower level of satisfaction with the quality of life was found in respondents in less favourable financial situations. Generally, it is expected that patients with a lower total income will be more dissatisfied with the quality of their life because treatment causes expenses due to which they are unable to provide everything they need for the best quality of life.

Patients with malignant disease of the head and neck are least satisfied with the quality of life. Head and neck cancer is specific because the disease itself and the surgical removal of the tumour affect the most visible parts of the body and often have an adverse effect on daily activities, such as swallowing, breathing, speech and appearance (25, 27).

Respondents up to 50 years of age are significantly more satisfied with social/family relationships. With the increase of age, the level of satisfaction with social/family relationships decreases significantly, while the connection with other particles was weak. The overall value of the scale was also higher among the youngest group of respondents. This means that older patients are less satisfied with social/family relationships, i.e. they are emotionally and functionally dissatisfied. Studies have shown that a family-oriented treatment of chronic diseases represents progress in treatment when compared to a traditional disease- or patient-oriented treatment (5). Patients want to be treated as persons with a character rather than persons with a malignant diagnosis. A person's character implies a physical, emotional, and spiritual dimension. Neglecting any of these human dimensions leaves the patient feeling empty and incomplete, which can result in a more difficult and slower recovery. That is certainly not the patient's goal nor should it be the goal of the health care staff (28).

The quality of life of patients with a malignant disease is satisfactory. There is a significant difference in the quality of life of respondents, in all areas of health, in relation to the site of a malignant disease. Patients with malignant disease of the head and neck are considerably less satisfied with physical health, social/family relationships, emotional and functional state and with overall health. There is also a significant difference with regard to the age of respondents in the field of social/family relationships. The quality of life is lowest among the respondents aged 51 to 60.

There is no significant difference in the area of health of respondents and the overall quality of life with regard to gender. There is a considerable difference in the quality of life regarding the level of education of respondents in the areas of physical health, social/family relationships and functional state. A significantly greater overall satisfaction with the quality of life was noticed among the respondents with college or higher education qualifications.

There is a significant difference on the subscale of social/family relationships with regard to the marital status of respondents. The highest rating on the overall quality of life scale was noticed in divorced respondents and the lowest in unmarried respondents, without statistically significant differences.

A significant difference exists in the quality of life of respondents in the field of social/family relationships with regard to their financial situation. The lowest rating was given by the patients whose total income amounted to under HRK 3,000. There is a significant difference regarding the place of treatment in the subscale of social/family relationships. The patients treated in the day hospital are more satisfied with the quality of life.

There is no recent data available for this geographic area on the subject of research.

Conclusion

FACT-G meets all requirements for use in oncological clinical trials, including ease of administration, brevity, reliability, validity and ability to respond to clinical change. Selecting it for a clinical trial adds the capability to assess the relative weight of various aspects of QL from the patient's perspective.

Quality of life based on the health of people with a malignant disease must be the ultimate outcome of the rehabilitation process for each patient with a malignant disease.

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