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Investigation of Quality of Life Scales in Cancer Patients

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ABSTRACT

Studies aimed at evaluating and improving the quality of life in cancer patients have an important place today. In our study, it is aimed at evaluating the usability of a scale that evaluates the quality of life in multiple dimensions in cancer patients. BETY-Biopsychosocial Questionnaire (BETY-BQ) and EORTC QLQ-C30 (European Organization for Research and Treatment of Cancer Quality of Life Questionnaire) quality of life scales were applied to 150 cancer patients aged 24-82. The surveys were evaluated in terms of sub-dimensions and total scores. According to the data obtained from the scales, a strong positive correlation was found between the BETY-Biopsychosocial Questionnaire (BETY-BQ) and EORTC QLQ-C30 (European Organization for Research and Treatment of Cancer Quality of Life Questionnaire) scales (r: 0.725, p: 0.001). A moderate correlation was found in the sub-dimensions of the scales. Especially in colon cancer, the relationship was found to be at a higher level. This study is thought to provide researchers with insight into the availability of the BETY-Biopsychosocial Questionnaire (BETY-BQ) scale in assessing quality of life for cancer patients. It can be stated that the BETY-Biopsychosocial Questionnaire (BETY-BQ) scale can contribute especially when evaluating the quality of life in cancer patients. The BETY-Biopsychosocial Questionnaire (BETY-BQ) scale can be safely preferred because it is understandable and multidimensional and gives similar results to the cancer-specific improved quality of life scale in different cancer types.

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INTRODUCTION

Current oncology approaches prioritize assessments that include not only pharmacological treatment, but also the quality of life of patients and families. This holistic approach is becoming increasingly important in order to produce healthier outputs. The term "quality of life" refers to a complex mechanism that focuses on the needs of cancer patients. Evaluates the processes for balancing the difference between the conditions of the patients within a certain time period and the desired situation (1).

The functional capacities and daily life activities of cancer patients are significantly affected by the disease. Quality of life scales are frequently preferred for this purpose in oncological rehabilitation. Scales that assess quality of life provide valuable information in determining the state of the psychological, social and spiritual aspects of cancer patients (1, 2). As the survival time of cancer patients increases, it becomes important to evaluate the long-term effects of this disease. In the literature, it has been stated that patients' quality of life is also low in the remission period (3).

Health-related quality of life refers to the consideration of physical, psychological and social functionality in different dimensions. The decrease in the physical performance of cancer patients, deterioration of sleep patterns and increase in psychosocial complaints negatively affect the quality of life (4).

The scales used to assess quality of life are usually based on the subjective opinions of people. With these scales, the degree of disease and impact is considered in a multidimensional way and

provides an assessment throughout the treatment and follow-up process (5). Some of the scales that evaluate the quality of life examine the symptoms of diseases or clinical status, while others examine individuals' functional skills, psychosocial well-being, social support and life satisfaction (6).

The BETY-Biopsychosocial Questionnaire (BETY-BQ) is a scale that evaluates the physical, psychological, and social impact of chronic patients. It provides multidimensional evaluation of individuals such as the "EORTC QLQ-C30" (European Organization for Research and Treatment of Cancer Quality of Life Questionnaire) scale, which is frequently used in evaluating the quality of life of cancer patients. It is known that the BETY scale is used to evaluate quality of life in various rheumatic diseases. The scale has subheadings on sexuality and sociability, pain, mood, and functionality (7-9).

The purpose of this study,

1. Questioning the availability of an alternative scale that evaluates the quality of life of cancer patients,

2. To evaluate cancer patients as multifaceted in terms of quality of life and to contribute to the work to be done in the field of oncological rehabilitation.

METHODS

BETY-BQ and EORTC QLQ-C30 quality of life scales were applied to 150 cancer patients aged 24-82 years. Data regarding demographic characteristics, cancer types and stages of the patients were analyzed. Before starting to collect research data, permission was obtained from the Hasan Kalyoncu University Non-Interventional Research Ethics Committee (Decision Date: 18.12.2018 and Decision No: 2018/50). Participants were informed about the purpose and nature of the study and signed an informed consent form. This study was performed in line with the principles of the Declaration of Helsinki.

Instruments

EORTC QLQ-C30 (European Organization for Research and Treatment of Cancer Quality of Life Questionnaire) Scale

This scale is frequently used to evaluate the quality of life of cancer patients. Validity and reliability analysis was performed by Beser and Oz (10). Patients' status for the last week is questioned in 3 sub-dimensions. These consist of global health status (general well-being), functional scale, and symptom scale. These three sub-dimensions consist of a total of 30 items. The first 28 items are 4 likert-type items (none: 1, a little: 2, quite: 3, or a lot: 4), 29. and 30. The substance consists of 7 likert-type substances (1: Very Bad and 7: Excellent). 29. and 30. questions assess the general state of well-being. A high score refers to an improved quality of life. In substances that include functional and symptom assessment, an increase in the score obtained indicates a decrease in the quality of life (10, 11).

BETY-Biopsychosocial Questionnaire (BETY-BQ)

The scale score is evaluated using the likert system of 5. Each question is scored between 0 and 4 (0: Never, 1: Yes rarely, 2: Yes sometimes, 3: Yes often 4: Yes always). The total score is measured with a 30-item evaluation. An increase in the score means a decrease in the quality of life. The validity and reliability of the scale was established by Unal et al in 2017 (12). The scale has subtitles of sexuality and sociability, pain, mood and functionality (7,8).

Statistical analysis

The SPSS 21.0 package program was used to evaluate the data. The Kolmogorov-Smirnov test was used to determine whether the variables had a normal distribution. Data from BETY-BQ and the EORTC QLQ-C30 were compared using correlation analysis. In the correlation analysis, the level of significance was evaluated as 0.05. Correlation levels were evaluated as $0.80<r<1$ very high, $0.60<r<0.80$ high, $0.40<r<0.60$ medium, $0.20<r<0.40$ weak and $0.00<r<0.20$ no correlation.

RESULTS

The average age of the individuals participating in the study was found to be 54.98 ± 13.06. The demographic information of the individuals participating in the study is shown in Table 1. It was seen that 80% of the individuals participating in the study were advanced stage cancer patients. However, there was no difference between individuals in terms of cancer stage and quality of life ($p > 0.05$).

Table 1. Demographic ınformation of all ındividuals participating in the study.

Variable		n	%
Gender	Man	75	50.0
	Woman	75	50.0
Age range	24-47	45	30.0
	48-61	54	36.0
	62-82	51	34.0
Type of Cancer	Lung Cancer	30	20.0
	Colon Cancer	16	10.7
	Breast Canser	38	25.3
	Other Types of Cancer	66	44.0
Stage of Cancer	Stage 1-2	30	20.0
	Stage 3-4	120	80.0

The quality of life of individuals was evaluated with the BETY-BQ and EORTC QLQ-C30 scales. The total scores of the scales are given in Table 2. A strong positive correlation was found between the two scales (r: 0.725, p: 0.001).

Table 2. Descriptive statistics of quality of life scales (n=150).

	X±SD	(Min-Maks)
BETY-BQ	49.62±25.57	0-120
EORTC QLQ-C30	69.84±18.31	30-113

BETY-Biopsychosocial Questionnaire: BETY-BQ, European Organization for Research and Treatment of Cancer Quality of Life Questionnaire: EORTC QLQ-C30.

The BETY-BQ scale consists of the sub-dimensions of sexuality-sociability, pain, mood and functionality. The EORTC QLQ-C30 scale consists of a global health score, a functional scale, and symptom scale sub-dimensions. The relationship of the sub-dimensions is given in Table 3.

A moderately significant correlation was found between the EORTC QLQ-C30 symptom scale and the sub-dimensions of the BETY-BQ scale, sexuality and sociability, pain and functionality of patients with lung cancer ($p<0.05$). A moderately significant relationship was found between the EORTC QLQ-C30 functional scale and the pain, mood and functionality sub-dimensions of the BETY-BQ scale. A moderate inverse correlation was found between the EORTC QLQ-C30 global health score and the sexuality and sociability, pain and functionality sub-idimensions of the BETY scale ($p<0.05$), (Table 3).

While there was a moderate positive relationship between the symptoms-functional sub-dimensions of the EORTC QLQ-C30 scale and the sexuality-sociality and mood sub-dimensions of the BETY-BQ scale in patients with colon cancer; a high positive correlation was found between the pain and functionality sub-dimensions ($p<0.05$). A moderate negative correlation was found between the EORTC QLQ-C30 global health score and the pain and functionality sub-items of the BETY-BQ scale ($p<0.05$), (Table 3).

There was a moderate positive correlation between the QLQ-C30 symptom scale and the QLQ-C30 functional scale and the sub-items of the BETY scale of patients with breast cancer, while a moderate negative correlation was found between the QLQ-C30 global health scale and the BETY scale sub-items ($p<0.05$). (Table 3).

While there was a moderate positive correlation between the QLQ-C30 symptom scale and QLQ-C30 functional scale and the sub-items of the BETY scale of patients with other cancer types, a moderate negative relationship was found between the QLQ-C30 global health scale and the BETY scale's sexuality-sociality and functionality sub-items. ($p<0.05$)), (Table 3).

Table 3. Relationship between scale sub-dimensions.

Type of Cancer	EORTC QLQ-C30 Symptom Scales	EORTC QLQ-C30 Functional Scales	EORTC QLQ-C30 Global Health Status
Lung Cancer			
BETY-BQ Sexuality and Sociability	r: 0.576 p: 0.001 n: 30	r: 0.490 p: 0.006 n: 30	r: -0.588 p: 0.001 n: 30
BETY-BQ Pain	r: 0.590 p: 0.001 n: 30	r: 0.653 p: 0.000 n: 30	r: -0.450 p: 0.013 n: 30
BETY-BQ Mood	r: 0.494 p: 0.006 n: 30	r: 0.367 p: 0.046 n: 30	r: -0.150 p: 0.428 n: 30
BETY-BQ Functionality	r: 0.688 p: 0.000 n: 30	r: 0.611 p: 0.000 n: 30	r: -0.450 p: 0.013 n: 30
Colon Cancer			
BETY-BQ Sexuality and Sociability	r: 0.537 p: 0.032 n: 16	r: 0.580 p: 0.019 n: 16	r: -0.357 p: 0.174 n: 16
BETY-BQ Pain	r: 0.916 p: 0.001 n: 16	r: 0.852 p: 0.001 n: 16	r: -0.547 p: 0.028 n: 16
BETY-BQ Mood	r: 0.578 p: 0.019 n: 16	r: 0.615 p: 0.011 n: 16	r: -0.222 p: 0.409 n: 16
BETY-BQ Functionality	r: 0.800 p: 0.001 n: 16	r: 0.795 p: 0.001 n: 16	r: -0.576 p: 0.001 n: 30
Breast Canser			
BETY-BQ Sexuality and Sociability	r: 0.541 p: 0.001 n: 38	r: 0.637 p: 0.001 n: 38	r: -0.518 p: 0.001 n: 38
BETY-BQ Pain	r: 0.473 p: 0.003 n: 38	r: 0.663 p: 0.001 n: 38	r:- 0.543 p: 0.001 n: 38
BETY-BQ Mood	r: 0.480 p: 0.002 n: 38	r: 0.451 p: 0.005 n: 38	r: -0.473 p: 0.003 n: 38
BETY-BQ Functionality	r: 0.594 p: 0.001 n: 38	r: 0.587 p: 0.001 n: 38	r: -0.474 p: 0.003 n: 38
Other Types of Cancer			
BETY-BQ Sexuality and Sociability	r: 0.565 p: 0.001 n: 66	r: 0.608 p: 0.001 n: 66	r: -0.312 p: 0.011 n: 66
BETY-BQ Pain	r: 0.613 p: 0.001 n: 66	r: 0.625 p: 0.001 n: 66	r: -0.240 p: 0.052 n: 66
BETY-BQ Mood	r: 0.446 p: 0.001 n: 66	r: 0.532 p: 0.001 n: 66	r: -0.153 p: 0.219 n: 66
BETY-BQ Functionality	r: 0.658 p: 0.001 n: 66	r: 0.564 p: 0.001 n: 66	r: -0.481 p: 0.001 n: 66

BETY-BQ: BETY-Biopsychosocial Questionnair, EORTC QLQ-C30: European Organization for Research and Treatment of Cancer Quality of Life Questionnaire.

DISCUSSION

Studies on the multi-dimensional evaluation and development of the quality of life in cancer patients have an important place today. In our study, the relationship between two different quality of life scales in different types of cancer was examined in detail. According to the data obtained from the scales, a strong positive correlation was found between the BETY-BQ and EORTC QLQ-C30 scales, while a moderate correlation was found in the sub-dimensions. We think that the results of the study will guide health professionals working in this field.

Cancer is a chronic disease that, in addition to being a medical-physical disease, also causes mental and psychosocial problems. Cancer patients can be severely affected psychologically and socially. The fact that the treatment covers an uncertain process leads patients to a deadlock, causing their quality of life to be seriously affected (13). For this reason, it is very important to reduce the problems that cancer patients face, improve their adaptation to treatment and their quality of life. It is inevitable to fight the multidimensional crisis caused by the disease in a healthy way. Overcoming this multidimensional influence can be overcome with a good evaluation approach. This, in turn, may be possible with systems that evaluate the patient multidimensionally, such as a biopsychosocial approach (14). Our study contributes to the literature because it shows the results of scales with different sub-dimensions in different types of cancer. At the same time, our study results showed that quality of life results may vary in different types of cancer. From this point of view, the need for more comprehensive studies in which the types of cancer are studied separately has been demonstrated.

In the selection of the scale, the purpose of the study, the characteristics of the target population, and what sub-dimensions the scale covers are all important. These features guide the selection of the scale (15). It will be appropriate to select the appropriate scale to create evidence of the causes that prevent and reduce the distress experienced by cancer patients (16). It is believed that there is a need to diversify the scales that can be used to determine the condition of cancer patients and use scales that offer more holistic assessment. It is thought that this will be an appropriate approach in terms of revealing the approaches to increase the self-efficacy of cancer patients.

Psychosocial interventions are increasingly coming to the fore to improve the quality of life associated with cancer (17). Biopsychosocially, it is difficult to evaluate diseases holistically. When the literature is examined, it is seen that conditions such as quality of life, physical function, anxiety and depression are evaluated in chronic diseases such as cancer. BETY-BQ raises concerns about the effects on pain, mood, function, and fatigue, as well as sexuality, social isolation, and sleep. It provides the opportunity to evaluate patients biopsychosocially under the concept of quality of life (18). We think that this scale can be used in the field of oncological rehabilitation in order to evaluate the quality of life of individuals in different types of cancer in detail due to its multidimensional nature and the relationship with the quality of life scale developed specifically for cancer.

An ideal quality of life scale should provide a multidimensional (emotional, social, and physical well-being) assessment opportunity, should include the subjective expression of the patient, be valid-reliable, and provide an easy application opportunity (19). The BETY-BQ scale also enables a holistic approach by providing this opportunity in evaluation.

The BETY-BQ scale consists of the sub-dimensions of sexuality-sociability, pain, mood and functionality. The EORTC QLQ-C30 scale consists of a global health score, a functional scale, and symptom scale sub-dimensions. It consists of 30 items in both scales. It is thought that the BETY-BQ scale can be used as an alternative in the evaluation of cancer patients, especially in the evaluation of sexuality and psychological status, since it is more comprehensive.

According to the results of the study, the BETY-bq scale is understandable, inclusive, as well as its high relationship with the EORTC QLQ-C30 scale and its moderate relationship with its sub-substances predict that it can also be used in cancer patients. The BETY-BQ scale can be easily preferred by clinicians, especially due to the medium and high relationship between the sub-dimensions of the scales in the evaluation of colon cancer. In this context, a contribution can be made to the literature by working with larger sample groups.

It has been stated in the literature that the EORTC QLQ-C30 is an easily applicable scale that can be completed by patients in an average of 11 minutes without any help (20). Questioning the characteristics of the BETY-BQ scale, such as how it is perceived by patients and the duration of administration, will be beneficial in terms of future research. In our study, it was seen that it was understood and applied by the patients in a short time. But a clear comparison with the literature could not be presented due to the lack of time tracking. We think that studies that include patient opinions about the scale and evaluate scale completion time will contribute to the literature in the field of oncological rehabilitation.

In the literature, it has been emphasized that there is a positive relationship between the data obtained from the quality of life of cancer patients and their survival time. It was stated that these data made a significant contribution to clinicians before and during the rehabilitation process (21). In this respect, we think that using the BETY-BQ scale will contribute to the literature in order to evaluate the effects of rehabilitation strategies, especially with a holistic approach, on cancer patients.

The low sample size is among the limitations of this study. It is recommended that future studies should make the BETY-BQ scale with a larger sample size. In addition, it should be questioned how long it takes to apply the scale and whether the patients have difficulty in using it. It will be possible to overcome these deficiencies by carrying out more comprehensive studies in which cancer types are evaluated separately.

It is thought that this study will give researchers an idea about the usability of the BETY-BQ scale in evaluating the quality of life of cancer patients. It can be stated that the BETY-BQ scale can contribute to the realization of optimal interventions in all stages of the disease, especially since it provides comprehensive evaluation. The BETY-BQ scale can be safely preferred because it is understandable, multidimensional, and

gives similar results to the quality of life scale developed specifically for cancer.

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Conflict of Interest

The authors have no relevant financial or non-financial interests to disclose.

Ethics approval

This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of Hasan Kalyoncu University. (Decision Date: 18.12.2018 and Decision No: 2018/50).

Consent to participate

Informed consent was obtained from all individual participants included in the study.

Availability of data and material

Available.

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