

Original article

## Satisfaction with life after radical treatment of cancer

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### ABSTRACT

**Introduction:** Cancer treatment is multidisciplinary in its character and places a heavy burden on the patient. Quality of life is a concept that is closely related to the satisfaction with life. Cancer patients' satisfaction with life, especially after recovery, is an increasingly examined indicator of treatment quality.

**Aim of the study:** Evaluation of satisfaction with life in patients after radical cancer treatment.

**Material and methods:** The study included 100 people, 81 women and 19 men of all ages, following radical treatment of various cancers. The study was conducted in 2016 at the Centre of Oncology in Bydgoszcz. The study used the Satisfaction with Life Scale (SWLS), adapted by Z. Juczyński, as well as a sociodemographic data questionnaire.

**Results:** In general, cancer patients have an average level of satisfaction with life – the average score was 22.37 and 6.19 sten. The greatest satisfaction with life (average points) was reported for professionally active people – 22.67, patients between 41–50 years old – 23.5, patients with secondary education – 23.4, and patients with at least one child – 22.73, though the differences were not statistically significant. Additionally, patients 3–5 years after treatment declared a higher satisfaction with life – 23.05, as did patients without concomitant diseases – 22.77, though again the results were statistically non-significant.

**Conclusions:** In general, patients after radical anti-cancer treatment have an average satisfaction with life, and in half of them satisfaction with life is high, regardless of the duration and type of cancer. Sociodemographic factors have no impact on the satisfaction with life scores.

**Key words:** cancer, satisfaction with life

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## INTRODUCTION

Neoplasms are high on the list of civilization or lifestyle diseases, and they are also amongst the most common causes of death. Diagnosis of cancer comes with far-reaching physical, psychological, emotional and economic consequences, triggering anxiety, fear and uncertainty as to the patient's future. Frequently, despite complete remission, cancer disease in the patient's history has a lasting impact on the life of the patient and his next of kin. Recent advances in medicine have led to a reduced cancer-related mortality and to increased remission rates.

Thus, over the past few years, we have observed an increased interest in the issue of quality of life in medicine, and in oncology in particular. The concept of quality of life is in turn closely connected with that of satisfaction with life. Satisfaction with life may be defined as an emotional state which is accomplished as a result of attaining a predefined goal. In a broader sense, encompassing human existence, satisfaction may be interpreted as achieving the goal of one's life, which brings the feeling of fulfilment and happiness [1]. The concept may be defined in a number of ways, though. For some, satisfaction with life is a "general assessment of life satisfaction of an individual, as related to that person's personal standards. It stimulates activity and helps people cope with difficult situations" [2]. Others define it as an "outcome of juxtaposing the current situation with one's personal standards" [3]. In psychology, the term is often mentioned alongside other related concepts, including happiness, wellbeing or quality of life. They are not to be understood as having the same meaning, though. Quality of life is a broader concept, encompassing many different aspects of human life [1].

Satisfaction with life in cancer patients and cancer survivors is an indicator that is ever more frequently examined in clinical studies. In light of the suffering and negative feelings related to somatic pathologies, satisfaction with life is a significant element of assessment. Following a neoplastic disease, it may differ depending on the patient's age, course of treatment, and life experiences [4]. The patient's spiritual and emotional condition is of utmost importance here, as it conditions their perception of the world and their self-acceptance. Experience of cancer is an event that may potentially lead crises, generating changes in patient behaviours, their convictions, desires and life goals, both during the long-lasting therapeutic process as well as once the treatment has been successfully completed. The higher the patient's self-esteem and satisfaction with life, the better they cope with stress, gradually improving their quality of life. Completing an anti-cancer therapy comes with a completely new way of thinking about the cause of disease,

its significance for one's present and future life, and its presence in life [5, 6].

Assessing patient satisfaction with life, following a completed anti-cancer treatment, may help explain, whether the experience of cancer makes it possible to derive satisfaction from life, and if yes, to what extent. Additionally, lack of data on it in international literature should be another reason behind undertaking research in the area.

## AIM OF THE STUDY

Assessment of life satisfaction in patients who have completed a radical cancer treatment.

## MATERIAL AND METHODS

The prospective study under discussion involved 100 subjects (81 female and 19 male patients) at different time points from the completion of radical treatment of malignant tumours. The population included 56 breast cancer patients, 13 colorectal cancer patients, 6 ovarian cancer patients, 4 skin cancer patients, 3 cervical cancer patients, testicular, lung and head and neck cancer patients (2 cases of each), larynx, bladder, prostate and liver cancer patients (1 case of each), 5 hematopoietic cancer patients, and 1 meningioma patient. The study was carried out in 2016 at the Oncology Clinic of the Franciszek Łukaszczyk Centre of Oncology in Bydgoszcz. Study exclusion criteria included: lack of informed consent, cancer recurrence, and chronic diseases that significantly compromise patient performance. Having received the approval of the Bioethics Committee of the Ludwik Rydygier Collegium Medicum in Bydgoszcz, the course of the study and its aim were explained to all of the study subjects.

The Satisfaction with Life Scale (SWLS), adapted by Z. Juczyński [3] was used to assess life satisfaction. The questionnaire includes 5 statements that respondents are requested to agree or disagree with, selecting 1 of the 7 possible options, with 1 meaning strongly disagree, and 7 meaning strongly agree. The suggested time is 2 min. The results range from 5–35 points. Afterwards, the raw scores are converted into the standardized 10-unit sten scale. The lower the score, the lower the satisfaction with life. When interpreting the results, the standardized sten scale is used [3].

The study also looked into the possible correlations between the reported results and the following variables: gender, age (age brackets), place of residence, education, number of children, employment situation, number of concomitant diseases, and time

from treatment completion. Additionally, the study made use of an original survey oriented on the patients' sociodemographic data (gender, age, education, number of children, employment situation, marital status, place of residence) as well as the time that has passed from treatment completion, and the concomitant diseases involved.

The non-parametric Mann-Whitney U test was used to determine the differences pertaining to a single item between two groups. On the other hand, when analysing the selected variables (age brackets, education, number of children, number of concomitant diseases, time from treatment completion), Spearman's rank correlation test was applied. The Kruskal-Wallis rank test, used to compare numerous independent samples (groups), was applied to analyse the "employment situation" variable. P value below 0.05 was considered statistically significant. Descriptive analysis made use of table, presenting the numbers and percentages of answers to the individual 5-item instrument questions. Arithmetic mean and standard deviation was also used in the analysis.

All of the calculations and tables were prepared with the use of the Statistica 10.0 software and Microsoft Excel sheet, making use of the software's standard functions and features.

## RESULTS

### Sociodemographic and clinical characteristics of study subjects

The study involved 81% of female and 19% of male patients. Four age brackets were selected: under 40 (11% of the study subjects), 41–50 (12%), 51–60 (25%), and over 60 (52% of the respondents). 78% of the subjects lived in urban areas. With respect to education, the largest group (43%) was constituted by those with secondary school education. Most of the respondents (79%) were married. 64% of the study subjects were parents of at least two children, and 10% had no offspring. 65% of the study participants were retired or on sick pensions (tab. 1).

The study included 56% of breast cancer patients, 13% of colorectal cancer patients, 6% of ovarian cancer patients, 5% or hematopoietic cancer patients, and 4% of skin cancer patients. Additionally, 3% of the study subjects were cervical cancer patients, with the remaining malignancies including soft tissue sarcoma, testicular cancer, lung cancer, and head and neck cancer (2% each).

TABLE 1.  
Sociodemographic data.

Variable		n = %
Gender	female	81
	male	19
Age	under 40	11
	41–50	12
	51–60	25
	over 60	52
Place of residence	countryside	22
	urban areas	78
Education	primary school	4
	vocational school	31
	secondary school	43
	higher education	22
Marital status	unmarried	9
	married	79
	widowed	10
	divorced	2
Children	none	10
	one	26
	two or more	64
Employment situation	professionally active	27
	retirement pension/sick pension	65
	unemployed	8

Some patients reported more than one concomitant disease – 43 respondents provided 66 answers. They mostly included cardio-vascular diseases (48.5%), followed by diabetes (18.2%), osteoarticular diseases (9.1%), thyroid pathologies (7.6%), asthma (6.1%), chronic gastritis and venous insufficiency (3% each) as well as glaucoma, hepatitis and systemic lupus erythematosus (1.5% each).

57% of study subjects indicated no concomitant disease, 24% of patients pointed to a single concomitant disease only, and the remaining 19% of respondents declared two or more comorbidities (tab. 2).

The majority of study subjects (39%) completed cancer treatment 3–5 years before the initiation of the present study, and the minority (26%) completed it 2 years before the study. The average time from treatment completion was 6.4 years (tab. 2).

TABLE 2.  
Time from treatment completion and number of comorbidities.

Variable		n = %	Mean/SD
Time from treatment completion	2 years	26	6.4/5.67
	3–5 years	39	
	> 5 years	35	
Number of comorbidities	none	57	0.66/0.88
	1	24	
	2 or more	19	

### Satisfaction with life

The respondents generally declared an average satisfaction with life, but verging on a high level of life satisfaction. The average raw score was 22.37, and the mean sten score was 6.19. A low level of satisfaction (1–4 sten) was reported for 27% of the study subjects, an average sten score (5–6 sten) was accomplished by 21% of the respondents, and a high sten score (7–10 sten) was obtained by 52% of the patients. Most of the study participants obtained the sten score of 7 (25%), with the least number of patients scoring 2 sten (5%) and 1 sten (1%) (tab. 3).

TABLE 3.  
Satisfaction with life.

Satisfaction	Sten	n = %
Low	1	1
	2	5
	3	7
	4	14
Average	5	8
	6	13
High	7	25
	8	13
	9	6
	10	8
Mean sten score/SD	6.19/2.219	

The highest scores were ascribed to the following statements: "So far, I have gotten the important things I want in life" (mean sten score of 4.79) and "I am satisfied with my life" (mean sten score: 4.76). The lowest scores were ascribed to the following items: "If I could live my life over, I would change almost nothing" (mean sten score: 4.26) and "In most ways my life is close to my ideal" (mean sten score of 4.18) (tab. 4).

TABLE 4.  
Mean raw scores for individual statements and mean total raw score for satisfaction with life.

Statements	Mean	SD	Confidence -95.0%	Confidence +95.0%
"In most ways my life is close to my ideal"	4.18	1.714	3.84	4.52
"The conditions of my life are excellent"	4.36	1.494	4.06	4.66
"I am satisfied with my life"	4.76	1.264	4.51	5.01
"So far I have gotten the important things I want in life"	4.79	1.423	4.51	5.07
"If I could live my life over, I would change almost nothing"	4.28	1.570	3.97	4.59
Mean total raw score	22.37	6.229	21.13	23.61

The level of life satisfaction was not influenced by the selected variables: gender, age, place of residence, education, number of children, employment situation, number of concomitant diseases and time from treatment completion ( $p > 0.05$ ).

### Assessment of satisfaction with life as related to the selected variables

Among female patients, a high level of life satisfaction was declared by 53.1% of respondents, and a low life satisfaction was reported by 23.5% of the study subjects, while in male patients the rates were 47.4% and 42.1%, respectively ( $p > 0.05$ ). Both highest and lowest life satisfaction were declared, among all age groups, by persons aged 41–50: 66,7% and 16,7%, respectively. 53.8% of the city dwellers reported a high satisfaction with life, with 24.4% of them declaring low levels of life satisfaction. The corresponding rates for those from the countryside were 45.5% and 36.4%, respectively ( $p > 0.05$ ). High levels of life satisfaction were reported by the majority of holders of secondary school diplomas (58.1%), and by 54.5% (the smallest number) of those with higher education degrees ( $p > 0.05$ ). High satisfaction with life was declared by the greatest number of parents of at least two children (51.6%), and the smallest number (40%) of those without children. Among those reporting high life satisfaction levels, most people were pensioners (47.7%), with the smallest population, in terms of their numbers, being that of the unemployed (62.5%) ( $p > 0.05$ ). High life satisfaction was declared by the greatest number of patients with no concomitant diseases (57.9%), and the lowest number of those with at least two comorbidities (42.1%) ( $p > 0.05$ ). Finally, among patients who declared high levels of satisfaction with life, the greatest number was constituted by those 3–5 years from treatment completion (53.8%), and the lowest number by those 2 years after treatment completion (57.7%) ( $p > 0.05$ ) (tab. 5). Due to the subgroup numbers, the marital status variable was not included in the analysis.

### DISCUSSION

In individuals affected by a neoplastic disease, satisfaction with life may result from their current health condition, effects of the past treatment, impact of concomitant diseases on their life at present, presence of their loved ones around, and their self-esteem. Sociodemographic factors, including gender, age, place of residence, education, family and employment situation, may also influence one's level of life satisfaction, following anti-cancer treatment.

Cancer patients' quality of life is a relatively frequently discussed issue, but there are few academic papers on their satisfaction

TABLE 5.  
Satisfaction with life as related to the selected variables.

Satisfaction		Low		Average		High		Mean/SD	p
Variable		number	%	number	%	number	%		
Gender	male	19	23.5	19	23.5	43	53.1	21.05/7.62	0.333
	female	8	42.1	2	10.5	9	47.4	22.68/ 5.87	
Age	up to 40	4	36.4	1	9.1	6	54.5	21/7.63	0.557
	41–50	2	16.7	2	16.7	8	66.7	23.50/6.11	
	51–60	7	28	5	20	13	52	22.96/6.80	
	> 60	14	26.9	13	25	25	48.1	22.12/ 5.76	
Place of residence	countryside	8	36.4	4	18.2	10	45.5	20.95/6.21	0.354
	urban areas	19	24.4	17	21.8	42	53.8	22.77/6.21	
Education	primary/ vocational	11	31.4	9	25.7	15	42.9	21.11/5.69	0.479
	secondary	8	18.6	10	23.3	25	58.1	23.40/6.78	
	higher	8	36.4	2	9.1	12	54.5	22.36/5.83	
Number of children	none	4	40	2	20	4	40	19.80/6.37	0.855
	1	6	23.1	5	19.2	15	57.7	22.73/6.35	
	2 or more	17	26.6	14	21.9	33	51.6	22.63/6.17	
Employment situation	professionally active	7	25.9	4	14.8	16	59.3	22.67/5.84	0.771
	retirement pension/ sick pension	17	26.2	17	26.2	31	47.7	22.22/ 5.93	
	unemployed	3	37.5	0	0	5	62.5	22.63/10.0	
Number of comorbidities	none	15	26.3	9	15.8	33	57.9	22.77/6.41	0.278
	1	6	25	7	29.2	11	45.8	22.08/6.31	
	2 or more	6	31.6	5	26.3	8	42.1	21.53/5.78	
Time from treatment completion	up to 2 years	7	26.9	4	15.4	15	57.7	22.65/6.75	0.396
	3–5 years	9	23.1	9	23.1	21	53.8	23.05/6.40	
	> 5 years	11	31.4	8	22.9	16	45.7	21.40/5.67	

with life, following a completed treatment. Zygryd Juczyński, author of the Polish adaptation of Diener's SWLS scale, presented the average scores for the general Polish population: adults – 20.37, males – 20.11, females – 21.09 (standardization group) [3]. One might be inclined to assume that due to the hardships involved in the process of treating cancer, and due to the high mortality rates, oncological patients' satisfaction with life, following anti-cancer treatment, would be low.

A great majority of subjects in our study were women. It resulted from the profile of patients treated at the Oncology Clinic at the time of the study. Over half of the respondents were people over the age of 60, retired or on sick pensions, while the under-40 age bracket was the least numerous. The study involved mainly city dwellers, with few patients living in smaller towns and villages. Almost half of the study subjects were holders of secondary

school diplomas. A great majority of patients were married. The patients' source of livelihood was the retirement or sick pension in most cases. Most of the respondents were parents of at least one child. Thus, it was a group that was typical for the population of cancer patients, somewhat different from the average.

Comorbidities were also looked into in order to determine, whether other diseases may further reduce one's satisfaction with life. Over half of the respondents reported no additional diseases. In the remaining patients, the most common concomitant diseases were cardio-vascular conditions, which appeared to have no impact on the patients' satisfaction with life. Half of the study subjects were women who had been treated for breast cancer, with the remaining patients having a history of colorectal cancer, ovarian cancer and hematopoietic malignancies. Based on the time that has passed since treatment completion, three

groups of subjects were identified. A similar number of patients completed a radical cancer treatment 3–5 years before the study, and more than 5 years before the study. It was decided to include the latter group in the study, as the generally adopted period of time, following which some cancers are believed to be cured, is 10 years (e.g. breast cancer).

Mean raw scores of satisfaction with life in patients after radical treatment of cancer were at the level of average, verging on high. It may be indicative of their good adaptation to further life. Similar data were presented by authors of other studies involving patients treated for colorectal cancer as well as those treated for differentiated thyroid carcinoma in their childhood [7, 8]. According to other authors, healthy adults report average levels of satisfaction with life, just like the cancer patients included in our study [3]. It was also demonstrated that there were no significant differences in the life satisfaction levels declared by men and women (with only slightly higher scores in female patients); the reported results were very similar, much like in studies carried out in a healthy population of subjects [3]. According to other researchers, examining, *inter alia*, healthy populations, demographic factors, including age, gender or poor financial situation, correlated with life satisfaction [9]. In our study, however, socio-demographic factors were not found to correlate with the life satisfaction of patients with a history of anti-cancer treatment.

A slightly higher score of life satisfaction was reported for the 41–50 age group, with the under-40 age bracket scoring the lowest values. It also transpired that education had no significant impact on the patients' satisfaction with life. A slightly higher level of life satisfaction was declared by subjects with secondary education degrees, with those with vocational education being the lowest scoring. Other authors concluded that in a healthy population, education had a significant impact on the life satisfaction declared, with women holding higher education degrees being more satisfied with their lives than those with vocational education only [10]. As for the number of children, our study found in-

dividuals with one child as slightly more satisfied with their lives than people with more children. The lowest scores were reported for childless patients, though. Still, in all of the respondents the values were more or less average. Similarly, professionally active patients declared the highest life satisfaction, and pensioners the lowest, but the difference was not statistically significant. It was also demonstrated that patients without comorbidities are only slightly more satisfied with their lives than those with concomitant diseases. Interestingly, there was no significant correlation between life satisfaction and the time that had passed since treatment completion. Only slightly higher life satisfaction levels were reported for patients 3–5 years after treatment.

Generally speaking, we may conclude that cancer disease had no negative impact on the life satisfaction declared by the study subjects. Most probably, having survived cancer, the patients derived greater satisfaction from life without suffering and the negative psychosomatic experiences related to the past disease and treatment.

Lack of studies on the life satisfaction after cancer treatment calls for further research. The present preliminary involved a poorly selected group, with the study subjects including patients suffering from different types of cancer, and at different time points from the completion of radical treatment. However, the presented results may offer a starting point for further and more detailed analyses related to the most common neoplasms and the associated satisfaction with life as declared by patients who have completed anti-cancer therapies.

## CONCLUSIONS

1. In general, patients who have undergone a radical treatment of cancer declare average life satisfaction levels (with half of them reporting high scores) irrespectively of the time from treatment completion and the type of cancer involved.
2. Sociodemographic factors have no impact on the satisfaction with life.

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Andrzej Nowicki: 50%; Paulina Duba: 35%; Marzena Lemanowicz: 15%.

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