



Patient satisfaction with oncological care during the virus pandemic – SARS-CoV-2 taking into account social and demographic factors

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Abstract

Introduction and Objective. The aim of the study was to examine the perception of medical services by oncological patients during the pandemic, identifying the key factors influencing it. The assessment of patient satisfaction with the treatment and care provided by doctors and other hospital staff provides important information on the quality of health services.

Materials and method. The study involved 394 patients diagnosed with cancer treated as inpatients in five oncology departments. The diagnostic survey method was used with a proprietary questionnaire and the standardized EORTC IN-PATSAT32 questionnaire. Calculations were carried out using Statistica 10.0 with $p \leq 0.05$ considered statistically significant.

Results. Overall patient satisfaction with cancer care was 80.77/100. Higher values were shown for the competences of nurses than for doctors, especially for their interpersonal skills (79.34 – nurses vs. 74.13 – doctors) and availability (80.11 – nurses vs. 75.6 – doctors). It was also shown that the level of satisfaction with cancer care increased with age; women rated cancer care lower than men ($p = 0.031$), particularly its aspect related to the competences of doctors. A lower degree of satisfaction was observed among rural residents ($p = 0.042$). Other demographic data, such as marital status and education, determined satisfaction with cancer care on the selected scale although it did not affect the overall level of satisfaction.

Conclusions. The analysed socio-demographic factors, primarily age, gender and place of residence, determined some of the scales concerning patient satisfaction with cancer care during the COVID-19 pandemic. The results of this and other studies of a similar profile should be used in the formation of health policy, particularly in implementing programmes to improve the quality of cancer care in Poland.

Key words

cancer, satisfaction, socio-demographic factors, care, COVID-19

INTRODUCTION

Current epidemiological global data indicate an increase in morbidity and mortality due to cancers [1]. Such a trend is also observed in Poland and, according to the latest data, in 2021 over 200,000 people fell ill with malignant neoplasms (MN), and over 100,000 patients died as a result [2]. These figures indicate that MN is a very serious public health problem and the speed and quality of diagnosis and therapy as well as care in the course of these diseases have become particularly important. For this reason, much attention is now being paid to patients' perception of health services provided by medical facilities, and as the number of people diagnosed with MN is constantly increasing, this is of particular importance in the planning and monitoring of cancer therapies. Due to the very strong empowerment of the patient, the assessment of the quality of health services provides important information on the quality of treatment and care provided by doctors and other hospital staff [3, 4].

Many publications, including this article, indicate that the oncological care system in Poland requires organizational and financial changes which would affect better therapy results and a better quality of life of oncological patients [5, 6, 7]. The situation of the entire health care worldwide, as well as in Poland in the last two years, has been further complicated by the COVID-19 pandemic, which has significantly burdened the medical care system, reduced the availability of most services, and forced the need for reorganization. It was necessary to prepare the system for the treatment of COVID-19, while providing care to other patients, including oncological patients [8, 9, 10].

It is difficult to give an unambiguous definition of satisfaction with medical care because the concept of satisfaction with hospital care has not yet been clearly defined, and there are different approaches to it in the available literature [11]. It is reported that satisfaction with care consists essentially of two elements, namely, assessment of the treatment process and satisfaction with the results of care. In the assessment of the treatment process, the waiting time for health services, obtaining information, access to care or speed and, above all, the effectiveness of treatment are particularly important. In turn, satisfaction with the results of care depends largely on

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the patient's expectations. Satisfaction with care in a very specific group of oncological patients is influenced by many other factors, including the side-effects of aggressive anti-cancer treatment, the possibility of full recovery, current financial situation, or current cancer control. Disturbances in physical functions, ability to perform daily activities, and reduced mental well-being significantly reduce the patient's satisfaction with medical care [12, 13].

It is important to assess patient satisfaction with services on multiple levels as medical care is provided by a team of doctors, nurses and other support staff on an outpatient-inpatient basis [11]. Thus, the overall assessment of satisfaction with the quality of medical care should result from the assessment of individual aspects: medical and nursing care, staff behaviour and assessment of the internal environment of the medical facility. The patient perceives care very sensitively and personally, not only the competences of specialists participating in the treatment process are important, but also their empathy, interest or willingness to help also in non-medical problems. In assessing patient satisfaction, it is important to keep them informed about the course of treatment, which requires communication skills from healthcare professionals [14].

Satisfaction with cancer care is also an important measure of health care quality and can be used by hospital managers as an indicator. The obtained information on patient satisfaction should be used for possible changes in the system or locally – in the hospital – to reduce stress and anxiety related to the disease and the treatment process in future patients [15, 16].

The aim of the study was to examine the perception of medical services by oncological patients during the pandemic, identifying the key factors influencing it. In addition, the basic socio-demographic parameters affecting the level of satisfaction with this care were assessed.

MATERIALS AND METHOD

The study included 394 people who were treated at the Fr. B. Markiewicz Podkarpackie Oncology Center in Brzozów (Poland), during the ongoing COVID-19 pandemic. The criteria for inclusion in the study were: malignant cancer diagnosis, inpatient treatment (hospitalization) for at least three days in oncological wards (i.e., in the clinical oncology, oncological surgery, oncological haematology, oncological orthopaedics and radiotherapy wards) at the Podkarpackie Cancer Centre, who expressed consent to participate in the study, and were over 18 years of age. Two research tools were used: a questionnaire for social and demographic data and a standardized tool – EORTC IN-PATSAT32, a questionnaire developed by the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC), used to assess patient satisfaction with cancer care. The tool consists of 32 questions assessing the quality of work of doctors and nurses and selected aspects of the organization of oncological care and the hospital environment. The questionnaire contains 11 multi-element scales relating to the technical skills of doctors and nurses, interpersonal skills, information provision, availability, interpersonal skills of other hospital employees, waiting time for medical procedures and availability of the hospital. In addition, the tool contains three individual questions concerning: information exchange, comfort in the hospital, and overall satisfaction with care.

The obtained results were analysed in accordance with EORTC guidelines [17] and patient satisfaction with oncology care (EORTC IN-PATSAT 32) assessed depending on selected demographic and social factors. A crude coefficient was calculated after which a linear transformation was performed to obtain a coefficient (score) with a value for both scales and individual questions that ranged from 0–100 points. The higher the value, the higher the level of satisfaction with care.

All patients were informed of the purpose of the study and how it was conducted, and each participant gave informed consent for participation in the study. The design and assumptions of the research were accepted by the Bioethics Committee at the Jan Grodek State University in Sanok (No. 03/2020, 2 July 2020). Detailed characteristics of the 394 patients in the study are presented in Table 1.

Calculations were performed in Statistica 10.0 (Statsoft; 2011). Compliance with the normal distribution was examined by the Shapiro-Wilk test. The assumption of homogeneity of variance was tested by the Levene test. Verification of research hypotheses was carried out using parametric methods. Comparisons for two groups were made with the Student's t-test for independent variables. If the assumption of equality of variance was not met, the Cochran-Cox test was used. Comparisons for more than two groups were performed with a one-factor analysis of variance or a Welch test. For multiple comparisons, Tukey HSD test for unequal numbers was used. The correlation analysis between age and the values of individual scales was carried out using the Pearson correlation coefficient (r). A significance level of $\alpha=0.05$ was assumed, and results were considered statistically significant when the calculated test probability p met the condition $p \leq 0.05$.

RESULTS

Overall patient satisfaction with oncology care calculated on the basis of the EORTC IN – PATSAT 32 questionnaire was 80.77 points (100 points possible). The highest scores were: comfort (79.25), exchange of information (78.87) and other hospital staff, interpersonal skills and availability of information (78.02), while the lowest were waiting time for medical procedures (76.07) and hospital availability (69.83) (Fig. 1).

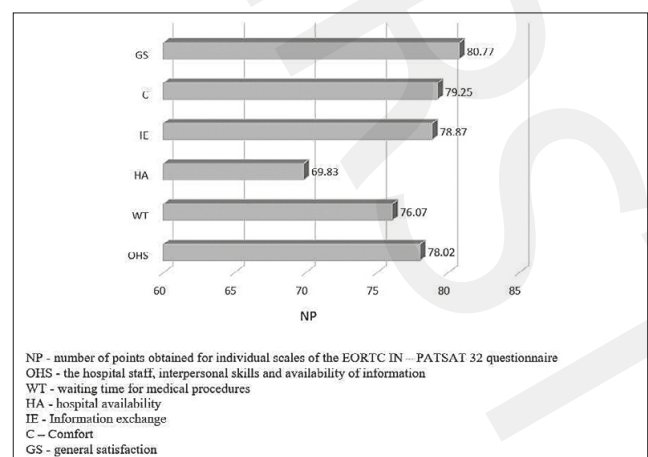
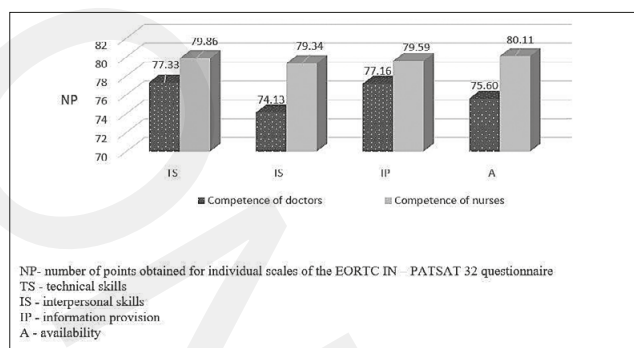


Figure 1. Patient's satisfaction with oncology care – results for EORTC IN – PATSAT 32 – other assessed areas

Table 1. Characteristics of the study group taking into account socio-demographic and medical factors

Variable	N	%
Age group [in years]		
24-34	69	17.5
35-44	72	18.2
45-54	86	21.8
55-64	79	20.1
> 64	88	22.4
Gender		
female	225	57.1
male	169	42.9
Place of residence		
village	192	48.7
town	132	51.3
Marital status:		
Single	134	34.0
in a relationship	260	66.0
Education:		
primary / vocational	155	39.3
secondary	151	38.3
Tertiary	88	22.4
Financial situation:		
very good or good	242	61.4
sufficient or bad	152	38.6
Occupational status:		
own business	28	7.1
running a farm	35	8.9
State workplace	64	16.2
commercial company	71	18.0
on a pension	119	30.2
disability benefit	63	16.0
unemployed	14	3.6
Insurance institution:		
Social Insurance	351	89.1
Agricultural Social Insurance Fund	35	8.9
oother	8	2.0
Hospitalization due to:		
treatment	338	85.6
remission after treatment - follow-up examinations	56	14.4
Type of cancer diagnosed:		
breast	86	21.8
colorectal	47	11.9
prostate	46	11.7
myeloma	38	9.7
ovarian	36	9.1
other	141	35.8

The respondents assessed the competences of doctors and nurses in the following categories: technical and interpersonal skills, information provision and availability. Higher scale values in the analysed categories were shown for nurses' competences, especially for their interpersonal skills (nurses – 79.34, vs. doctors – 74.13) and availability (nurses – 80.11 vs. doctors – 75.6) (Fig. 2) nurses.

**Figure 2.** Patient's satisfaction with oncological care – results for EORTC IN – PATSAT 32 – competence of doctors and nurses

It was shown that the level of satisfaction with oncological care increased with age. In the case of assessing the competence of doctors, statistically significant dependencies were found in all analysed scales. In the field of nurses' competences, statistical significance was obtained for the following scales: technical skills ($p=0.030$) and availability ($p=0.026$). With age, patient satisfaction also increased in the assessment of the following areas: other hospital staff – interpersonal skills and availability of information ($p=0.003$); waiting time for medical procedures ($p=0.030$), hospital availability ($p=0.041$) and information transfer ($p=0.007$) (Tab. 2).

Table 2. Satisfaction with oncological care and patients' age

EORTC IN-PATSAT32	Scale	Correlation coefficient	p
Competence of doctors	technical skills	0.1525	0.020
	interpersonal skills	0.1843	0.000
	information provision	0.1025	0.042
	availability	0.1553	0.002
Competence of nurses	technical skills	0.1095	0.030
	interpersonal skills	0.0702	0.164
	information provision	0.0554	0.272
Other areas	availability	0.1124	0.026
	other hospital staff, interpersonal skills and availability of information	0.1492	0.003
	waiting time for medical procedures	0.1091	0.030
	hospital availability	0.1028	0.041
	information exchange	0.1353	0.007
	comfort	0.0879	0.081
	general satisfaction	0.692	0.170

Satisfaction with oncological care was assessed depending on the gender of the subjects (Tab. 3). Compared to men, women rated the competence of doctors lower: technical skills ($p=0.022$) and interpersonal skills ($p=0.035$) and providing information for both doctors ($p=0.046$) and nurses ($p=0.031$). In other areas of activity and services provided by the hospital, higher scale values (higher rating) were also obtained for men; this included: hospital availability ($p=0.026$), information transfer ($p=0.041$). Overall satisfaction with cancer care was also higher for men ($p=0.031$).

A link was also found between the place of residence and patient satisfaction with oncological care. Patients living in rural areas had lower satisfaction with care compared to those living in cities ($p=0.042$). The differences concerned:

Table 3. Satisfaction with oncological care and the gender of patients

EORTC IN- PATSAT32	Scale	Female		Male		p
		M	SD	M	SD	
Competence doctors	technical skills	74.07	18.67	78.99	16.23	0.022
	interpersonal skills	71.22	20.62	75.35	18.54	0.035
	information provision	74.41	19.96	78.16	17.45	0.046
	availability	74.83	21.50	76.63	19.22	0.392
nurses	technical skills	80.41	16.83	79.14	17.45	0.482
	interpersonal skills	79.22	17.40	79.49	19.23	0.881
	information provision	76.02	17.52	80.38	18.58	0.031
	availability	80.22	17.73	79.96	19.25	0.885
Other areas	other hospital staff, interpersonal skills and availability of information	77.52	18.19	78.70	20.10	0.511
	waiting time for medical procedures	76.01	19.95	76.18	15.56	0.082
	hospital availability	65.28	22.59	70.56	18.47	0.026
	information exchange	76.67	19.72	80.47	19.56	0.041
	comfort	79.33	19.35	79.14	17.51	0.089
	general satisfaction	77.25	17.61	80.47	19.24	0.031

Table 4. Satisfaction with oncological care and place of residence

EORTC IN- PATSAT 32	Scale	Village		Town		p
		M	SD	M	SD	
Competence of doctors	technical skills	75.43	18.99	81.39	18.97	0.005
	interpersonal skills	72.04	19.48	78.87	17.19	0.003
	information provision	75.26	19.38	79.16	15.89	0.021
	availability	73.82	21.90	76.49	22.03	0.082
Competence of nurses	technical skills	79.07	17.47	80.61	18.90	0.235
	interpersonal skills	77.99	17.74	83.72	19.15	0.031
	information provision	78.90	17.07	80.81	17.38	0.145
	availability	78.58	18.43	83.72	17.55	0.002
Other areas	other hospital staff, interpersonal skills and availability of information	76.91	17.39	78.91	19.74	0.356
	waiting time for medical procedures	75.19	19.62	78.48	20.29	0.043
	hospital availability	68.16	22.62	72.57	20.51	0.021
	information exchange	76.17	19.13	84.88	21.91	0.032
	comfort	78.25	19.62	83.72	20.66	0.214
	general satisfaction	80.29	17.29	83.13	19.86	0.042

Table 5. Satisfaction with oncological care and marital status

EORTC IN - PATSAT 32	Scale	Single		In a relationship		p
		M	SD	M	SD	
Competence of doctors	technical skills	79.48	19.91	76.22	18.10	0.114
	interpersonal skills	76.87	19.02	72.72	20.13	0.045
	information provision	79.29	17.98	76.06	19.29	0.100
	availability	76.87	20.76	74.95	20.97	0.388
Competence of nurses	technical skills	80.97	18.06	79.29	17.08	0.375
	interpersonal skills	80.91	17.95	78.52	17.29	0.207
	information provision	80.66	16.87	79.04	16.80	0.366
	availability	80.50	18.68	79.90	17.54	0.758
Other areas	other hospital staff, interpersonal skills and availability of information	81.03	17.65	76.47	17.92	0.016
	waiting time for medical procedures	77.61	19.63	75.29	19.77	0.268
	hospital availability	71.82	22.62	68.79	22.04	0.204
	information exchange	83.02	19.53	76.73	18.95	0.002
	comfort	81.90	19.72	77.88	19.55	0.062
	general satisfaction	81.34	18.82	80.48	16.78	0.655

Table 6. Satisfaction with oncological care and education

EORTC IN – PATSAT 32	scale	Education						p
		primary / vocational		secondary		tertiary		
		M	SD	M	SD	M	SD	
Competence of doctors	technical skills	74.78	26.31	76.60	19.42	79.34	17.08	0.023
	interpersonal skills	77.27	18.77	73.62	17.04	72.73	18.77	0.103
	information provision	73.23	17.47	76.71	18.49	78.15	19.83	0.012
	availability	72.04	26.86	75.00	20.76	79.27	18.36	0.015
Competence of nurses	technical skills	78.07	17.48	78.63	17.71	81.06	17.40	0.961
	interpersonal skills	77.63	16.90	80.91	16.66	80.49	16.17	0.041
	information provision	76.81	17.12	78.21	15.44	81.12	15.44	0.032
	availability	78.94	18.17	79.96	18.77	79.41	16.09	0.324
Other areas	other hospital staff, interpersonal skills and availability of information	76.75	21.14	77.54	18.05	76.99	16.42	0.102
	waiting time for medical procedures	76.32	21.32	76.41	20.63	79.22	19.72	0.032
	hospital availability	71.79	24.13	78.94	20.57	77.89	23.58	0.025
	information exchange	76.31	20.07	77.31	19.15	80.34	18.22	0.011
	comfort	79.60	22.42	80.55	18.89	78.97	18.13	0.484
	general satisfaction	80.57	19.87	80.29	17.93	81.25	16.19	0.219

technical skills ($p=0.005$) and interpersonal skills ($p=0.003$) of doctors and their provision of information ($p=0.021$). Rural residents also rated lower the competences of nurses in the areas of interpersonal skills ($p=0.031$) and availability ($p=0.002$).

Statistically significant differences were found in other areas studied: waiting time for medical procedures ($p=0.043$), hospital availability ($p=0.021$) and information transfer ($p=0.032$) (Tab. 4).

Although the overall level of patient satisfaction with cancer care was not dependent on their marital status ($p=0.655$), it was shown that subjects living in a relationship rated the interpersonal skills of physicians slightly lower ($p=0.045$), and in other areas the exchange of information ($p=0.002$) and other hospital staff, interpersonal skills and availability of information ($p=0.016$). The values of individual scales taking into account the marital status of patients are presented in Table 5.

Those with lower levels of education achieved lower satisfaction with oncology care compared to patients with secondary or higher education (Tab. 6). Statistically significant differences occurred in terms of scales: technical skills of doctors ($p=0.023$), their provision of information ($p=0.012$) and their availability ($p=0.015$), and in the case of nurses' competences, interpersonal skills ($p=0.041$) and provision of information ($p=0.032$). Patients with no higher than vocational education had lower values on the following scales: waiting time for medical procedures ($p=0.032$), hospital availability ($p=0.025$) and information transfer ($p=0.011$), compared to respondents with a higher level of education.

DISCUSSION

Malignant neoplasm is perceived as a disease accompanied by long-term treatment, pain, suffering, lack of physical and vital forces, helplessness and impaired sense of security [13]. To a large extent, the development of MN affects the psychological sphere of the patient – thinking, behaviour

and even personality traits. The prospect of a long and exhausting treatment, together with the uncertainty of its outcome, is a new and very difficult situation for patients. Healthcare professionals from whom patients with MN seek help should play a big role during this time. In the course of diagnosis and therapy, it is very important for the patient to have a proper attitude towards the disease, including its acceptance. A positive attitude of the patient makes a favourable course of treatment more likely. Healthcare workers, primarily doctors and nurses, play an important role in this process. The relationship between medical staff and the patient should strengthen the patient's sense of security, and the professional and interpersonal skills of doctors and nurses should influence the patient's positive attitude to the disease and therapy [18]. Open and clear communication of information helps the patient to understand the current situation, eliminates negative emotions such as anxiety, stress or insecurity. Proper transmission of information also determines better compliance of the patient to the recommendations during therapy.

In the overall assessment, patients rated comfort and information transfer the highest. In the area of competence of doctors and nurses, interpersonal skills were rated the lowest. This means that such an important element for the patient as providing information about therapy and health is not properly performed due to the low interpersonal skills of medical staff. A doctor should always be the source of information about the state of health and the progress of treatment. Limitation or lack of information is the cause of dissatisfaction, complaints or questions from patients. The method of transmission is also important [19]. Despite the low interpersonal assessment of staff, it should be emphasized that higher values of scales in this respect were found in the case of nurses. The availability of nurses was also rated higher compared to doctors which, however, may be understandable due to the organization of work and the number of nursing vs. medical staff. Patients also indicated shortcomings in access to the hospital and extended waiting times for medical procedures. The lower rating may be related to the fact that the study took place during the COVID-19 pandemic, but

this requires a detailed analysis and repetition with a post-pandemic study.

The sense of security of the study group was disturbed not only by the disease, but also by the epidemiological situation. At that time, the functioning of the health care system was primarily focused on treating COVID-19, and MN patients felt concerned about the possibility of proper treatment [20, 21]. Other global studies, similar to the current study, indicate the occurrence of delays in treatment due to the prevailing COVID-19 pandemic [22, 23].

In this study, the age of patients differentiated their level of satisfaction with oncological care – the value of this assessment increased with age. Statistically significant relationships were found on the analysed scales, with the exception of the interpersonal skills of nurses and their provision of information, the assessment of hospital comfort and the overall satisfaction of patients with care. A similar association was shown in the research by Akhbari et al. [24] and Hajifathali et al. [25], which indicated greater satisfaction with care among older patients. The authors pointed out that older people, due to their greater need for care, pay more attention to the care provided by medical personnel, especially nurses. Research by Sherlaw-Johnson et al. [26] also showed, as does the current study, that greater dissatisfaction with medical care occurred among young and female patients. In the current study, lower ratings were found by women: overall satisfaction, physician competence (technical, interpersonal, information provision), nurses' competence (information provision), and hospital availability and information transfer.

The presented study also showed a relationship between place of residence and education, and patient satisfaction with oncological care. Patients living in the countryside and with lower levels of education received less satisfaction from care compared to those living in the city and better educated. It is noteworthy that people with a lower level of education rated medical staff – doctors and nurses in the field of providing information – lower. For oncological patients who experience strong anxiety and insecurity, a clear and reliable message about the course of the treatment process and the side-effects of therapy is fundamental. Having knowledge of treatment and the consequences of therapies for which one can prepare and become accustomed has an impact on the perception of treatment and on greater satisfaction with care [27].

In research conducted by Djordjevic et al. [28], as in the present study, it was shown that people living in cities were more satisfied with medical care than patients living in rural areas. These authors also pointed to a relationship between education and satisfaction with medical care – the most satisfied people were found among patients with secondary education. In turn, research carried out by Alosaimi et al. [29] did not show that demographic and social factors, such as age, gender, level of education or place of residence, affect satisfaction with oncological care. In the opinion of the authors of the current article, a cultural issue may be relevant here.

Patient satisfaction with oncological care is an important factor for improving health-related quality of life (HRQoL) and significantly affects patients' compliance with medical recommendations. Lower satisfaction can reduce compliance and thus hinder effective MN treatment, thus reducing the chances of recovery [30, 31].

This study, one of the first such Polish studies, analysed in detail the impact of social and demographic variables

on patient satisfaction with oncological care during the COVID-19 pandemic. The results obtained can be used to validate the quality of care involving patients diagnosed with cancer.

CONCLUSIONS

1. According to the study, the profile of the most satisfied patient is: a single older male, with a university degree, living in a city.
2. Social and demographic factors have an impact on the assessment of satisfaction scales with oncological care during the COVID-19 pandemic.
3. Low satisfaction with the way medical staff communicate treatment information in the group of people with lower education suggests that doctors and nurses should adapt communication more to the patient's knowledge and understanding capabilities.
4. There is a great need to improve the interpersonal skills among doctors and nurses who work with patients with malignant tumours.
5. Obtained research results could be used in shaping health policy, especially in the implementation of programmes for improving the quality of oncological care in Poland, and leveling differences in access to this care to cancer patients from rural and urban areas.
6. Research should be continued in an analyzed range, expanding them with the size of the study group and another regions of country.

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