



Patients' Assessment of Medical Services Provided in Three Selected Chemotherapy Departments at Hospitals of Different Referral Level in Lodz Voivodeship

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Abstract

Introduction: *Growing competition in the field of medical services impels health centres to strive for better quality of care and greater satisfaction of patients. Providing high quality care and ensuring well-being of patients should always be a priority for health care institutions.*

Objectives: *The aim of the study was to present and compare patients' opinions on medical care provided and to determine the degree of their satisfaction as measured in three selected chemotherapy departments in hospitals of different referral level in Lodz voivodeship.*

Material and methods: *The study was conducted among 450 patients hospitalized in three selected chemotherapy departments in hospitals of different referral level in Lodz voivodeship in the second half of 2018. The research tool used was a self-designed questionnaire composed of 50 questions, divided into issue-related sections such as first contact with, and organization of, a given centre, treatment and care, and information on the patient.*

Results: *It was established that the possibility to get acquainted with hospital regulations and Patients' Rights Charter, adherence to timelines of diagnostic procedures and chemotherapy medication, access to pastoral care and psychological counselling, translates into patients' comfort and satisfaction, the appropriately measured mean level of which proved significantly different for each of the studied medical centres. Consequently, patients' opinions on health services provided in the selected chemotherapy departments of different referral levels varied.*

Conclusions: *Considering the empirical distribution of a synthesized SAT variable, especially its median computed for random patient samples from the compared medical centres, it can be concluded that best satisfied with services and treatment were patients of the NU-MED Diagnostic and Oncology Centre*

in Tomaszow Mazowiecki. The worst rated in this respect was the Voivodeship Copernicus Multi-Specialist Oncology and Traumatology Centre in Lodz.

Key words: *patients' satisfaction, health services, referral levels*

Introduction

In the 21st century, medical institutions whose priority is to expand medical services on the health-related market must compete for patients by offering services of higher and higher quality [1]. One of the elements of health services' quality assessment is the level of patient satisfaction [2]. Carrying out surveys of patients' satisfaction with health services plays a key role in gathering knowledge on the quality of provided medical care. The quality of the medical care has a bearing not only on patient health, experience of safety and confidence but may also be a matter of life itself [3]. Patients are the essential source of information which can lead to changes in areas needing modification and betterment [4]; thanks to their feedback the quality of services can be continually improved in order to better meet patients' expectations [5]. These expectations may of course vary from one patient to another, depending on their subjective criteria, psychological and emotional status, or previous experience with medical institutions. This survey concerned oncological patients where medical care and disease-related help is of the utmost importance since chemotherapy treatment greatly affects patients on many levels – physical, emotional, social – and has a limiting influence on their professional and home activities [6]. There are many factors affecting the level of satisfaction, including:

- access to information on health status
- duration of wait for service
- promptness of medical procedures
- empathy [7].

The patient who decides to avail himself or herself of a medical service expects, among other things, proper information and communication, the right of having a say in decision-making with regard to treatment modes, the positive effect of treatment, honesty, and psychological comfort during the course of treatment [8].

The patient dissatisfied with health services of a given medical centre can decide to seek help in another, and can communicate his negative opinion to other potential future patients. The satisfied patient, on the other hand,

will be less inclined to pay attention to possible deficiencies, e.g. in medical facilities or décor of a medical centre [9].

Thus, medical providers should be interested in monitoring changes in patients' preferences and implement improvements in the performance of their services [10]. Effective management of medical services should be based on coordinating and harmonizing multiple aspects of in-patient and out-patient care, including technical, economic and administrative angles [11]. Medical centres should focus not only on the clinical correctness of services but should endeavour also to secure patient satisfaction [12]. By understanding patients' needs for an empathetic and respectful approach they will be able to meet patients' expectations and achieve better patient management [13]. Many other works, e.g. the work by P. Francois et al., emphasize that the evaluation of hospital management activity, as perceived by hospital staff and as identified through patient satisfaction surveys and an analysis of patient complaints, contributes to defining priorities and designing strategies to solve problems and implement continuous quality improvement in hospital departments [14].

Material and methods

The authors obtained permission from the Bioethical Committee at the Medical University of Lodz to conduct the study as well as each patient's consent to participate in it. This study consists of a comparative analysis of patients' opinions on health services provided to them at three chemotherapy departments in hospitals of different referral level in Lodz voivodeship, and of defining their level of satisfaction [15]. The medical centres studied were:

- The Voivodeship Copernicus Multi-Specialist Oncology and Traumatology Centre in Lodz (referral level III);
- The Poddebice Health Centre (referral level I);
- The NU-MED Diagnostic and Oncology Centre in Tomaszow Mazowiecki (specialist level – oncology).

The study was conducted in the period of June–November 2018 among 450 patients undergoing chemotherapy treatment. In each hospital 150 face-to-face questionnaire interviews were conducted. Every patient was allowed

only one interview during their whole course of treatment, and participation was optional. The study sample was randomized, i.e. patients were included in the study according to the simple independent sampling scheme on the basis of patients ID lists presented by a given hospital.

The questionnaire consists of 50 questions. The first part of the questionnaire referred to information on hospital regulations and patients' rights, structure and topography of the department, types of treatment, and availability of pastoral care or psychological counselling. Further questions concerned issues such as cleanliness of wards, rooms and bathrooms, equipment and facilities, quality of meals, quality of nursing and doctoral care. Final questions gathered information on the patient: gender, age and level of education. The obtained data were statistically analysed with the programmes MS Excel, Gretl and Statistica statistical package version 12. The results are presented by means of simple statistical tools such as boxplots, analysis of the SAT variable (see definition of the SAT variable below), the Kruskal–Wallis test and the multiple comparisons method.

Results

The study comprised 450 patients, including 227 women (50.44%) and 223 men (49.55%). Most of the respondents were aged 65–74 years (38%), followed by the group aged 55–64 years (31.11%). One hundred and sixty patients (35.56%) had secondary vocational education, whilst 20 patients with bachelor's degree constituted the smallest group (4.44%). With regard to the distance from place of residence to the medical centre where patients received treatment, the largest group consisted of patients with 11–50 km to cover (42.22%), and the smallest, with over 200 km – 1.33%. With respect to diagnosis established according to ICD-10, the greatest group of 130 patients (28.89%) were treated for large bowel cancer, 95 (21.11%) for lung cancer, and only 7 (1.56%) for urinary bladder neoplasm. With regard to the chemotherapy treatment patients were undergoing when interviewed, the greatest number of patients – 151 (33.56%) – were receiving their first course, and 95 (21.11%) had undergone 7 or more courses of chemotherapy.

The smallest group, undergoing their fourth course of chemotherapy, consisted of 19 patients (4.22%).

Admission to hospital

Data analysis shows that the **possibility of getting acquainted with hospital regulations** is rated highest by patients of the Voivodeship Copernicus Multi-Specialist Oncology and Traumatology Centre in Lodz (91.33% of respondents). Second in positive ranking with regard to this criterion (86.67% of respondents) was NU-MED Diagnostic and Oncology Centre in Tomaszow Mazowiecki. The poorest assessment (77.33% of respondents) was granted to the Poddebice Health Centre.

Regarding **the possibility of getting acquainted with the Patients' Rights Charter** the centre rated highest by respondents was the Voivodeship Copernicus Multi-Specialist Oncology and Traumatology Centre in Lodz (90.67% of approving responses), followed by the NU-MED Diagnostic and Oncology Centre in Tomaszow Mazowiecki (87.33% of positive marks); third was the Poddebice Health Centre (76.67%). It is worth noting that for the Oncology Therapy Department in Tomaszow Mazowiecki none of the interviewed respondents gave a negative answer concerning this aspect.

Treatment

Analysing the opinions of patients with regard to **adherence to timelines of diagnostic procedures**, the most favourably appraised was the Poddebice Health Centre (97.33%). The hospital in Tomaszow Mazowiecki received positive opinions from 90% of respondents, and the hospital in Lodz, 88%.

Concerning the question on **timeliness of planned chemotherapy (cytostatics) treatment implementation**, 80% of patients at the hospital in Tomaszow Mazowiecki stated that the treatment started as scheduled. For the hospital in Lodz it was 73.33%, and for the centre in Poddebice, 67.33%.

Patient evaluation of access to pastoral and psychological care

Information on the **availability of pastoral care** was best provided by the NU-MED Diagnostic and Oncology Centre in Tomaszow Mazowiecki, according to 74.67% of questionnaire respondents, and least by the Poddebice Health Centre – 68%. Quite a few patients, about 30% of each of the three institutions, commented they were not fully informed that such services were accessible to them. Therefore, this aspect of hospital care needs improvement in that the information should be clearer and easier to access.

The highest rating with regard to information on the **availability of psychological care** was for the NU-MED Diagnostic and Oncology Centre in Tomaszow Mazowiecki (78% positive opinions); it was 62% for the Voivodeship Copernicus Multi-Specialist Oncology and Traumatology Centre in Lodz, whilst the lowest was for the Poddebice Health Centre where only 46.67% of respondents were informed they could seek psychological help.

Statistical analysis

For the purpose of the study, a synthesized SAT measure was designed to globally assess the level of patients' satisfaction in each of the three hospitals. To facilitate the interpretation of this variable, it was normalized to range $<-2, 2>$, where the right end of the range denotes a maximally positive opinion, 0 denotes a neutral attitude of the patient, and the left end signifies a maximally negative opinion.

Definition of the SAT variable

The construction of the SAT variable which defines the patient's general satisfaction with the course of hospitalization is as follows:

- at stage 1, it contains sub-indicators: X1 – satisfaction with cleanliness of the ward, room and bathroom (the mean of responses to questions 36–38), X2 – satisfaction with room facilities (question 39), X3 – satisfaction with meals (question 40);

- X4 – satisfaction with hospital staff (the mean of responses to questions 41–44);
- X5 – satisfaction with quality of provided health services (question 45);
- at stage 2 the variables were re-scaled to adopt values from the range $\{-2, -1, 0, 1, 2\}$, with value 0 denoting a patient's neutral attitude, 2 maximally positive, and -2 maximally negative;
- at stage 3 a synthesized SAT index was established which constitutes the arithmetic mean of variables indicators: X1, X2, X3, X4 and X5.

Evaluation of the SAT variable distribution for three studied medical centres

A comparison of the SAT variable distribution among the whole population of the three assessed hospitals was done with the non-parametric Kruskal–Wallis test [16] (see Table 1). The ANOVA [17] – analysis of variance to analyse the differences among means – was not used, particularly because the assumptions on the normality of SAT variable distribution, as well as equality of the variation of this characteristic among the hospital patients, were not met (they were respectively modified with Shapiro–Wilk's [18] and Bartlett's tests [19]).

The Kruskal–Wallis test confirmed that the distributions of the SAT variable among the hospitalized patients are significantly different when compared between the hospitals. To be more exact: p-value close to null, as computed on the basis of the sample results, speaks for rejection of the null hypothesis suggesting lack of differences between these distributions. This is further confirmed by boxplots set for all hospitals, which display the most typical values of the SAT characteristic among the total of patients of these hospitals (areas quartile 1 – quartile 3) (see Figure 1). The so-called boxes on these graphs do not group on the same horizontal line. Nonparametric tests for multiple comparisons [20] which then compared the distribution of the SAT variable among the patients of a given hospital with the distribution of an analogous distribution from each of the other two hospitals (pairwise comparisons) showed statistically significant differences in the

distribution of the SAT characteristic among patients of any of the hospital pair (see Table 2). Red colour marks statistically significant differences with the level of significance set at 5%. Therefore, there are statistically significant differences between the studied hospitals with respect to the distribution of the SAT variable.

Table 1. Kruskal–Wallis test for comparison of the SAT variable distribution in three analysed hospitals

Variable: SAT	Kruskal–Wallis test (ANOVA) Grouping variable: hospital H (2, N=450) =154, 7843 p=0,000			
	Code	Number of observations	Sum of ranges	Mean rank
Poddebice	1	150	31,788.50	211.9233
Lodz	2	150	20,971.50	139.8100
Tomaszow Maz.	3	150	48,715.00	324.7667

SAT variable – synthesized measure assessing globally the level of patient satisfaction with hospitalization in a given hospital

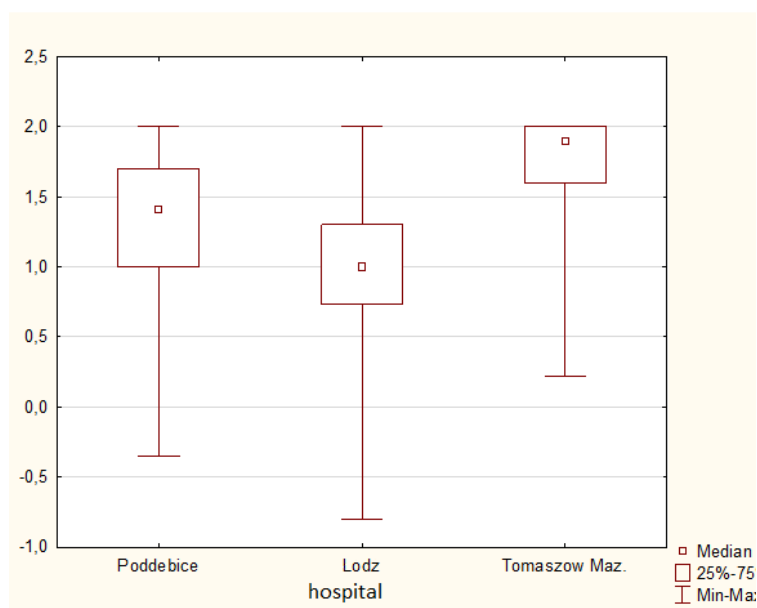


Figure 1. Boxplot graphs for the SAT variable distribution in three analysed hospitals

Table 2. Multiple comparisons for analysis of the SAT variable distribution in three analysed hospitals

Variable: SAT	Multiple comparisons: p- values (*)		
	Poddebice R:211,92	Lodz R:139,81	Tomaszow Maz. R:324,77
Poddebice		0.000005	0.00
Lodz	0.000005		0.00
Tomaszow Maz.	0.000000	0.000000	

(*) Red colour marks statistically significant differences

Source: own study.

Discussion

The obtained results, presented in Table 1, Table 2 and Figure 1 clearly show that the hospitals described in this study differ with regard to the level of patients' satisfaction with health services provided there. Considering the level of the synthesized SAT variable, it can be concluded that patients who were most satisfied with the care level of hospitalization were those of the hospital in Tomaszow Mazowiecki. The worst ranking was for the hospital in Lodz. Since the study was based on a randomized sample of patients and on the Kruskal–Wallis significance test, the above mentioned conclusion can be generalized, i.e. it does not refer only to the studied sample of patients but is general in nature and comprises the whole population of hospitalized beneficiaries of health services. Similar analyses of assessment of patients' satisfaction can be found in works of other authors [21, 22, 23]; however, they focus on the evaluation of a given patient's satisfaction with particular aspects of hospitalization such as medical staff, nursing staff, facilities, quality of meals, etc., separately, whereas the added value in this work is the proposal and analysis of own, original SAT variable which analyses the satisfaction factor in a synthesized and global way, i.e. takes into account all the considered as considered aspects simultaneously. Such an approach has special practical significance where a prompt, unequivocal assessment of a hospital is needed since one figure expresses it better than a set of figures that may

be potentially ambiguous and confusing in the assessment and thus make the choice of hospital more difficult.

Conclusions

It is to be hoped that the results and recommendations stemming from published works will be taken into consideration and brought to health-related practice by relevant authorities. The main author of the article intends to continue her work by incorporating more hospitals in the study and by enlarging study samples, using the methodology presented herein, including the SAT variable.

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