



Research Article

Predictive Factors of Cancer Patients' Satisfaction with Quality of Healthcare Services Received at the Middle Euphrates Cancer Center, Al-Najaf Al Ashraf, Iraq

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Abstract

Background: Cancer remains a leading global health challenge. Its management is complex and patient satisfaction depends on many factors, such as the patient's pathophysiology, types of cancer, types of treatment and the facilities available. **Objectives:** To assess the variables that determine cancer patients' satisfaction with the quality of healthcare. **Methods:** A cross-sectional study was conducted at the Middle Euphrates Cancer Center in the Al-Najaf Al-Ashraf Governorate from July 1, 2021, to September 20, 2023. We used expert advice to ensure the validity of the questionnaire and conducted a preliminary pilot study to confirm its dependability. A questionnaire was used to conduct structured interviews that yielded data, which was then thoroughly analyzed using descriptive and inferential statistical techniques using SPSS. **Results:** Out of 400 cancer patients, 77.3% had received chemotherapy, 22.0% had just received a breast cancer diagnosis and 49.3% had stage I cancer metastases, while the majority (54.25%) had no co-morbidities. In the study, 53.3% of patients showed unsatisfactory responses to the healthcare services provided. Diagnosis, co-morbidities, cancer metastasis, and independence level significantly influenced patient satisfaction with the quality of healthcare. **Conclusions:** The majority of participants (>50%) were unsatisfied with the provided healthcare services. Based on these variables, healthcare practitioners should tailor their care to enhance the wellbeing of cancer patients.

Keywords: Cancer patients, Healthcare services quality, Influencing factors, Satisfaction.

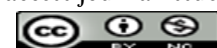
العوامل التنبؤية لرضا مرضى السرطان عن جودة خدمات الرعاية الصحية التي يتلقونها في مركز سرطان الفرات الأوسط، النجف الأشرف، العراق

الخلاصة

الخلفية: لا يزال السرطان يمثل تحدياً صحياً عالمياً رئيسياً وعلاجه والسيطرة عليه عملية معقدة، ويعتمد رضا المرضى على العديد من العوامل، مثل الفيزيولوجيا المرضية للمريض وأنواع السرطان وأنواع العلاج والمرافق المتاحة. **الأهداف:** تقييم المتغيرات التي تحدد رضا مرضى السرطان عن جودة الرعاية الصحية. **الطريقة:** أجريت دراسة مقطعية مستعرضة في مركز سرطان الفرات الأوسط في محافظة النجف الأشرف في الفترة من 1 يوليو 2021 إلى 20 سبتمبر 2023. استخدمنا مشورة الخبراء لضمان صحة الاستبيان وأجرينا دراسة تجريبية أولية لتأكيد موثوقيته. تم استخدام استبيان لإجراء مقابلات منظمة أسفرت عن بيانات، والتي تم تحليلها بعد ذلك بدقة باستخدام التقنيات الإحصائية الوصفية والاستنتاجية باستخدام SPSS. **النتائج:** من بين 400 مريض بالسرطان، تلقى 77.3% علاجاً كيميائياً، و 22.0% تلقوا للتو تشخيصاً بسرطان الثدي و 49.3% لديهم نقائل سرطانية في المرحلة الأولى، في حين أن الغالبية (54.3%) لم يكن لديهم أمراض مشتركة. في الدراسة، أظهر 53.3% من المرضى استجابات غير مرضية لخدمات الرعاية الصحية المقدمة. كما أثرت المدة منذ التشخيص والأمراض المشتركة ومرحلة السرطان ومستوى الاستقلال بشكل كبير على رضا المرضى عن جودة الرعاية الصحية. **الاستنتاجات:** أغلب المشاركين (>50%) غير راضين عن خدمات الرعاية الصحية المقدمة. بناءً على هذه المتغيرات، يجب على ممارسي الرعاية الصحية تكييف رعايتهم لتعزيز رفاهية مرضى السرطان.

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INTRODUCTION

The contentment of cancer patients is an essential metric for assessing the quality of healthcare services provided within the intricate and multifaceted domain of cancer care [1]. The complex interplay among patient attributes, healthcare system elements, and disease-related factors is evident in the wide range of determinants that influence the satisfaction of cancer patients with their healthcare encounters [2]. Variables include the type of cancer, the duration of time since diagnosis, the treatment approach, the presence of co-morbidities, the stage of the cancer, and the degree of independence. Frequently, the type of cancer a patient is diagnosed with significantly impacts their course of treatment. Treatment regimens, prognoses, and adverse effects differ among the numerous types of cancer. For instance, in contrast to individuals afflicted with more aggressive types of cancer, those diagnosed with breast cancer generally express higher levels of satisfaction due to the presence of efficacious treatment options and robust support systems [3]. This suggests that, contingent upon the specific form of cancer, patients' expectations and experiences with healthcare services might differ. An additional critical factor that influences the level of satisfaction that cancer patients experience with their healthcare is the duration of time that has passed since their diagnosis. Healthcare providers must adapt their services to meet the evolving needs of patients, as evidenced by the disparate levels of satisfaction reported by recently diagnosed patients and long-term cancer survivors [4]. Additionally, the type of treatment cancer patients receive has a substantial impact on their level of satisfaction. The impact of various treatment modalities—including immunotherapy, targeted therapy, chemotherapy, radiation therapy, and surgery—on the quality of life of patients can vary. Patients often exhibit differing levels of gratification with their chosen treatment, contingent upon their perception of its efficacy and tolerability [5]. Co-morbidities, which refer to the simultaneous presence of cancer and other chronic medical conditions, further complicate the process of obtaining treatment. Due to the fact that patients with co-morbidities often require more comprehensive and integrated care, the way in which cancer patients perceive their healthcare can be significantly impacted [6]. The degree of malignancy present at the moment of diagnosis exerts a substantial influence on patients' levels of satisfaction. The medical experiences of patients diagnosed with early-stage cancer may differ significantly from those of patients diagnosed with advanced-stage cancer. Patients afflicted with advanced-stage cancer often articulate diminished levels of satisfaction [7] due to the complicated and demanding nature of their treatment. The level of autonomy or functional condition that cancer patients encounter could potentially impact their satisfaction with the care they receive. Patients who have diminished mental or physical capabilities may require additional assistance and support, potentially leading to a

modification in the healthcare service expectations placed upon them. In order to increase patient satisfaction, the importance of adapting care to their functional limitations is emphasized [8]. To ensure the delivery of patient-centered care, it is critical to have a comprehensive understanding of the diverse factors that impact the satisfaction of cancer patients with healthcare services. The intricacy of patient experiences within the field of oncology is shaped by a multitude of factors, such as the clinical subtype, length of time since diagnosis, therapeutic approach, concurrent medical conditions, cancer stage, and level of self-sufficiency.

METHODS

Study design and setting

A descriptive cross-sectional study was carried out at the Middle Euphrates Cancer Center in the Al-Najaf Al-Ashraf Governorate between July 1st, 2021 and September 20th, 2023. The purpose of the study was to evaluate how satisfied cancer patients were with the level of treatment they received from physicians, nurses, and the center's administration.

Study Sample

In accordance with the probability sampling technique, a total of 400 cancer patients were evaluated by the Middle Euphrates Cancer Center. The inclusion criteria applied to all patients with cancer, irrespective of their age, educational attainment, or willingness to participate after giving informed consent.

Study Instrument

Socio-demographic features about the kind of admission, length of stay, department, age, and gender, place of residence, marital status, degree of education, employment, and monthly income were gathered in this area. Predictive indicators also include the type of cancer, the amount of time from the diagnosis, the treatment modality, comorbidities, the stage of the disease, and the degree of independence. Patient Contentment Evaluation: This section included a thorough 59-item survey meant to gauge how satisfied patients were with their healthcare. A five-point Likert scale, with 1 denoting extremely dissatisfied and 5 strongly satisfied, was used to measure the responses. Higher mean scores, ranging from 59 to 295 in the cumulative score, indicated greater satisfaction. The questionnaire had a 0.92 Cronbach's alpha coefficient, indicating high reliability.

Data Collection

Individual interviews were done by the researcher, who answered any queries or concerns raised by the subjects and gave clear instructions. The researcher not only commended the participants for their participation but also urged them to participate further. Every interview followed a standardized

format specific to the study design and lasted roughly twenty to twenty-five minutes.

Ethical consideration

The study was approved by the Middle Euphrates Cancer Center in the Al-Najaf Al-Ashraf Governorate, Iraq. Both verbally and in writing, all patients were made aware of the purpose and methodology of the study. All participants were asked to sign an informed consent form before they could participate. To maintain transparency and integrity in our research processes, we also revealed any potential conflicts of interest, such as affiliations with funding sources or businesses engaged in the study.

Satisfaction analysis

We measured this parameter using the Cancer Satisfaction Questionnaire (CSQ), which consists of eight Likert-scale questions with a rating range of 1 to 5. Higher scores on the CSQ indicate greater satisfaction with the quality of medical care. Three open-ended questions are also included in the questionnaire, asking patients to list the aspects of their medical care that they enjoyed best and least, as well as any improvements they would recommend.

Statistical analysis

We used IBM SPSS 20.0 to analyze the data. While mean and standard deviation were used to explain continuous variables, numbers and percentages were used to summarize categorical variables. The predicted variables were identified using a simple linear regression. A two-tailed *p*-value of less than 0.05 was considered statistically significant.

RESULTS

The secondary aim of this research was to examine the socio-demographic characteristics of individuals diagnosed with cancer (Table 1).

Table 1: Distribution of studied sample related to their socio-demographic data

Sociodemographic data	Classification	n(%)
Age (year)	18-27	5(1.25)
	28-37	33(8.25)
	38-47	48(10)
	48-57	31(7.75)
	58-67	43(10.75)
	68-77	157(39.25)
	78-87	83(20.75)
Gender	Male	200(50)
	Female	200(50)
Marital status	Single	22(5.5)
	Married	316(79)
	Divorced	8(2)
	Widow	54(13.5)
Occupation	Governmental	71(17.75)
	Free-business	70(17.5)
	Retired	93(23.25)
	Students	5(1.25)
	Unemployed	161(40.25)

It is noteworthy that among these patients, 39.3% fell within the age bracket of 68–77 years. Married individuals comprised 79.0% of the population. Moreover, a considerable proportion (40.25%) was unemployed. The primary findings revealed that chemotherapy was administered to 77.3% of the patients as part of their treatment regimen, while 22.0% had only recently been diagnosed with breast cancer (within the previous 19–24 months) (Table 2).

Table 2: Distribution of studied sample related to their clinical data

Clinical data	Classification	n(%)
Type of cancer	Breast	88(22)
	Lung	38(9.5)
	Bladder	24(6)
	Prostate	24(6)
	Colon	26(6.5)
	Brain	32(8)
	Skin	14(3.5)
	Kidney	12(3)
	Pancreas	22(5.5)
	Liver	10(2.5)
	Esophagus	10(2.5)
	Thyroid	18(4.5)
	Bone	6(1.5)
	Rectum	18(4.5)
	Throat	12(3)
	Stomach	18(4.5)
	Ovary	10(2.5)
	Testicle	6(1.5)
	Womb	12(3)
Duration since diagnoses (month)	1-6	47(11.75)
	7-12	61(15.25)
	13-18	116(29)
	19-24	176(44)
Type of treatment	Chemotherapy	309(77.25)
	Radiotherapy	8(2)
	Hormonal	14(3.5)
	Immune	20(5)
	Chemo-radiotherapy	49(12.25)
Co-morbidities	Non	217(54.25)
	HTN	30(7.5)
	DM	82(20.5)
	HTN & DM	53(13.25)
Stage of CA	Bronchial asthma	18(4.5)
	I	197(49.25)
	II	126(31.5)
	III	54(13.5)
	IV	23(5.75)
Level of independency	Normal	200(50)
	Limited	64(16)
	Mobile and able	86(21.5)
	Special support	48(12)
	Completely bedridden	2(0.5)

Although the majority (54.25%) of the patients did not have any co-morbidities, nearly half (49.25%) had stage I cancer metastases. It is worth mentioning that patient counseling resulted in 50.0% of the patients maintaining a typical level of independent functioning. In Table 3, a significant proportion of cancer patients (53.25%) were generally dissatisfied with the quality of care they received, according to the study's findings. As indicated by the results of a rudimentary linear regression analysis, specific variables and the quality of healthcare services rendered to patients are positively correlated.

Table 3: Overall level of patient's satisfaction with the quality of healthcare services

Scale	Range	Mean±SD	Score	n(%)
Overall patients' satisfaction (59 Q)	103-249	149.03±86.34	Unsatisfied (59-177)	213(53.25)
			Satisfied (177.1-295)	187(46.75)
Total				400(100)

This result is notably affected by the degree of independence ($\beta = -0.335$; $p = 0.000$), the stage of cancer metastasis ($\beta = -0.331$; $p = 0.000$), and the duration since cancer diagnosis ($\beta = -0.222$; $p = 0.036$). Additionally, the presence of co-morbidities ($\beta = -0.350$; $p = 0.000$) also has a significant impact (Table 4).

DISCUSSION

Recent research has uncovered a concerning trend in the level of satisfaction that cancer patients have with their medical care. The findings of the study suggest

that a majority of cancer patients (53.25%) expressed overall dissatisfaction with the quality of care they were provided. The statistical analysis provides evidence for this discontent, as indicated by the moderate satisfaction score of 149.03 out of 400 and the standard deviation of 86.34. The significance of legislators and healthcare professionals giving careful attention to the concerns and experiences of cancer patients is illustrated by these findings. Cancer is a physically and psychologically taxing illness, and patient satisfaction with healthcare services has a substantial impact on treatment outcomes and overall well-being [9,10].

Table 4: Factors predict the satisfaction with the quality of healthcare facilities and services.

Variables	Un-standardized Coefficients		Standardized Coefficients	p-value
	β	Std. Error	β	
Type of cancer	-0.002	0.002	-0.025	0.306
Duration since diagnoses	-0.211	0.012	-0.222	0.036
Type of treatment	-0.003	0.009	-0.009	0.730
Co-morbidities	-0.135	0.012	-0.350	0.000
Stage of CA	-0.185	0.020	-0.331	0.000
Level of independency	-0.150	0.016	-0.335	0.000

Low patient satisfaction may be attributable to a variety of factors, such as inadequate access to support services, extended appointment waits times, or disruptions in communication between patients and healthcare professionals [7]. In order to enhance patient satisfaction and elevate the overall quality of cancer care, it is imperative to confront the aforementioned concerns [7,11,12]. Furthermore, the significance of these discoveries underscores the criticality of patient-centered care. Healthcare practitioners ought to give utmost importance to the holistic welfare of individuals diagnosed with cancer, encompassing not only their medical treatment but also their emotional and psychological requirements. Patient satisfaction may increase as a consequence of improved treatment adherence and outcomes that result from patient-centered care [13]. The findings of the research, which indicate that 53.25 percent of individuals diagnosed with cancer are unhappy with the standard of healthcare services, underscore the criticality of adopting a comprehensive and patient-centric strategy towards cancer treatment. We can enhance the healthcare experience for cancer patients by increasing access to support services, decreasing wait times, and enhancing communication by addressing these concerns. As this can affect treatment outcomes, general well-being, and treatment adherence, ensuring that patients are content with the quality of healthcare services they receive is an essential component of cancer care. Extensive research has identified critical determinants of satisfaction among cancer patients. The passage of time following the cancer diagnosis is a significant determinant in gauging the satisfaction

of cancer patients with their healthcare treatment. The current findings are consistent with those of Wang *et al.* [14], who found that patients who had recently been diagnosed with cancer reported higher levels of satisfaction compared to those who had been diagnosed for a prolonged period of time ($\beta = -0.222$; $p = 0.036$). Based on this study, individuals who are newly diagnosed with cancer may have distinct expectations and needs compared to those who have been afflicted with the ailment for an extended period. A substantial amount of research consistently indicates that co-morbidities have a substantial impact on the satisfaction of cancer patients with their healthcare providers. In line with the present results ($\beta = -0.350$; $p = 0.000$), Lee *et al.* [15] discovered that patients who also had other medical conditions expressed lower levels of satisfaction. The presence of co-morbidities can introduce complexity to healthcare, impede adherence to treatment plans, and impose additional burdens on patients. This may result in a decline in contentment, as juggling multiple health conditions simultaneously can be challenging to manage. The stage of cancer metastasis is an essential supplementary indicator of patient satisfaction with cancer. Typically, patients in the later phases of cancer exhibit diminished levels of satisfaction with their healthcare providers. In line with the present results ($\beta = -0.331$; $p = 0.000$), a study conducted by Watanabe *et al.* [16] identified a significant inverse relationship between patient satisfaction and the metastasis stage of cancer. Due to their frequently more severe symptoms, increased treatment requirements, and emotional distress, patients in

advanced phases of cancer may experience diminished satisfaction with their healthcare. Significantly influencing the contentment of cancer patients with healthcare services is the degree of patient autonomy. Consistent with the present results ($\beta = -0.335$; $p = 0.000$), a study conducted by Johnson *et al.* [17] discovered that individuals who possessed fewer levels of independence expressed lower levels of satisfaction. Patients who are more independent may have diminished autonomy over their treatment decisions and may necessitate greater support with routine activities. The aforementioned variables might influence the patients' overall satisfaction with their healthcare encounter. In contrast to individuals who have received their cancer diagnosis for an extended duration, cancer patients generally express higher levels of satisfaction. This observation implies that as their cancer journey advances, their needs and expectations undergo a transformation. Patients with advanced stages of cancer are more prone to providing lower satisfaction ratings due to the fact that they often require more extensive treatment, experience a greater number of symptoms, and endure greater mental distress. Patients who are less autonomous generally report lower levels of satisfaction, which may be attributed to their heightened dependence on assistance for daily activities and restricted autonomy in managing their treatment plan. These components underscore the importance of considering the distinct needs and characteristics of every patient as a means to enhance the overall contentment of cancer patients with their healthcare providers.

Limitations of study

A number of limitations remain associated with the investigation, and the data were interpreted in light of these. To begin with, the study design is descriptive cross-sectional, which introduces a challenge in interpreting the causal effects of the reported casualties. Another significant constraint is that the research was conducted at a single institution and thus cannot be compared to other cancer centers that utilize distinct healthcare facilities. Patient satisfaction with cancer is significantly influenced by patient counseling and the provision of information pertaining to cancer treatment and management. A negligible percentage of the participants in this study were less educated and encountered challenges comprehending fundamental aspects of cancer treatment and management.

Conclusion

It is concerning that, according to a survey, more than half of cancer patients are dissatisfied with their healthcare providers. Co-morbidities, the duration since the cancer diagnosis, the stage of the disease, and the level of autonomy achieved are significant metrics for gauging patient satisfaction. In order to optimize the welfare of cancer patients, healthcare professionals ought to customize their treatment plans in light of these variables.

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Conflict of interests

No conflict of interests was declared by the authors.

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Data sharing statement

Supplementary data can be shared with the corresponding author upon reasonable request.

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