

RESEARCH ARTICLE

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Cancer Patients Satisfaction and Quality of Healthcare Services in Iraq: A Cross-Sectional Study to Evaluate the Quality of Care in Cancer Management

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Abstract

Objective: Cancer is a complex disease characterized by uncontrolled cell proliferation and the development of metastatic features. The aim of the study is to examine the patient's satisfaction with the quality of healthcare services provided at the Middle Euphrates Cancer Centre in Al-Najaf Al-Ashraf Governorate. **Methods:** Cancer patients who visited during 2021-2023 Middle Euphrates Cancer Center in Al-Najaf Al Ashraf Governorate in 2021–2023 were enrolled in the study. In the cross sectional study, enrolled cancer patients were screened based on inclusion and exclusion criteria. In this study, cancer patient satisfaction assessment was made based on responses from a 59 items questionnaire. **Results:** In the study period, 400 cancer patients who visited the Middle Euphrates Cancer Center in Al-Najaf Al Ashraf Governorate enrolled in the study. Cancer patient's satisfaction was assessed based on the care provided by physicians, nurses, the infrastructure of the organization, and their socioeconomic status. Under the category of care provided by the physician, the level of assessment reported was low [L]=1-2.33; moderate [M]=2.34-3.66; 2.34–3.66, and high [H]=3.67-5). However, in the case of care provided by nurses, the level of assessment is low ([L]=1-2.33; moderate [M]=2.34-3.66; high [H]=3.67-5.0). The level of assessment (low [L]=1-2.33; moderate [M]= -3.66; high [H]=3.67-5) at the organization level for the services and facilities. **Conclusion:** Findings clearly demonstrate that the participants were dissatisfied with some services provided by doctors, nurses, or organizations. The findings also emphasize the critical need to tailor healthcare services, enhance accessibility, and elevate the overall quality of care to enhance patient satisfaction significantly.

Keywords: Cancer patients- treatment satisfaction- quality of healthcare services- kruskal-wallis H test and Mann

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Introduction

The global cancer burden is increasing, putting tremendous physical, emotional, and financial strain on people, families, communities, and healthcare systems [1]. In the fight against cancer, survivorship defines the efficacy of cancer management that involves several inputs including diagnosis, therapeutics, nursing care and medical facilities and patient physician harmony [2]. Cancer patients' satisfaction refers to their level of contentment or fulfillment with the care and services they receive throughout their cancer journey. It encompasses various aspects of their experience, including interactions with healthcare providers, access to information and support services, coordination of care, and overall treatment experience [3]. The management of cancer

requires an extended time period and commitment with recommended management strategy. Hence, satisfaction with cancer treatment depends on efficient communication between medical professionals and patients. Here, the information regarding cancer diagnosis, available treatments, prognosis, and any side effect help in decision making. For many years, patient satisfaction with healthcare was acknowledged as a crucial element of healthcare quality assurance initiatives [4]. A handful of investigations have looked into the psychosocial factors influencing cancer patients' satisfaction with their care. Healthcare providers can considerably benefit from the knowledge gained from patient satisfaction scores in identifying areas for improvement, understanding patients' requirements, and ultimately producing more efficient and higher-quality services [5].

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Cancer patients' satisfaction with the quality of healthcare services is a critical aspect of modern healthcare delivery [6]. Cancer is a formidable global health challenge, affecting millions of lives and straining healthcare systems worldwide [7]. To effectively combat this disease and provide comprehensive care, it is imperative to understand and assess the level of satisfaction among cancer patients regarding the healthcare services they receive [8]. Cancer patients' satisfaction has become a focal point in healthcare research and policy due to its multifaceted implications [9]. Patient satisfaction is not merely a measure of contentment but a reflection of the quality of healthcare services provided [10]. A satisfied cancer patient is more likely to adhere to treatment regimens, engage in shared decision-making with healthcare providers, and experience improved psychological well-being during a challenging period of their lives [11]. There is a substantial body of literature that supports this research project and emphasizes the significance of patient satisfaction in healthcare. Patient satisfaction is a complex construct encompassing various dimensions, including the accessibility of care, interpersonal relationships with healthcare professionals, communication, and the technical quality of medical services [12]. In the context of cancer care, it is emphasized that higher levels of patient satisfaction are associated with better clinical outcomes and adherence to treatment [13]. The evaluation of cancer patients' satisfaction is also inextricably linked to the ongoing shift towards patient-centered care.

The National Academies of Sciences seminal report, "Crossing the Quality Chasm," emphasized the importance of patient-centered care as one of the core dimensions of healthcare quality [14]. In this paradigm, healthcare providers are encouraged to involve patients in decisions about their care and to address their unique preferences and needs. Also, the rise of value-based healthcare models and the inclusion of patient-reported outcomes into reimbursement systems make it even more important to measure how satisfied cancer patients are [15]. A key element of these models is incentivizing healthcare providers to provide high-quality care in the patient's eyes. Bridging this gap is not merely a clinical imperative, but a moral obligation. By meticulously evaluating the satisfaction of cancer patients at the Middle Euphrates Cancer Center seeking to understand the discrepancies between patients' expectations and their actual experiences, paving the way for targeted interventions and transformative improvements. Ultimately, this evaluation is not solely an assessment of the Center's performance, but a testament to our collective commitment to providing cancer patients with the quality of care they deserve. It promises to bridge the gap between hope and healing, ensuring that every individual battling this disease encounters not just treatment, but also a holistic experience of empathy, dignity, and unwavering support.

Materials and Methods

Study Design

A descriptive cross-sectional study was conducted

at the Middle Euphrates Cancer Center in Al-Najaf Al Ashraf Governorate between July 01, 2021, and September 20, 2023. The study aimed to assess cancer patients' satisfaction with the quality of healthcare services provided by physician, nursing staff, facilities provided by institute.

Study Sample

In this particular instance, the researcher emphasized adult cancer patients who visited the Middle Euphrates Cancer Center. The study population was selected at random. According to the inclusion criteria, individuals with cancer of any kind were taken into account; there were no limitations based on a patient's gender, educational status, or desire to participate after giving informed consent. These wide inclusion standards may make it easier to identify a variety of cancer patients who came to the facility for treatment.

Patient Characteristics

In order to assess the results on cancer satisfaction with healthcare services, data on the nature of admission, the duration of stay, department, age, gender, residency, marital status, education level, occupation, and monthly earnings was collected.

Patient Satisfaction Assessment

The study conducted a thorough 59-item survey to gauge patients' satisfaction with medical care. Factors such as the organization and the care given by physicians and nurses were included in the questionnaire. A Five-Likert scale (1–5) was used to measure the responses, with 1 denoting "strongly dissatisfied" and 5 denoting "strongly satisfied." Greater satisfaction was indicated by higher mean scores, which varied from 59 to 295 in the cumulative score. The questionnaire's good reliability was indicated by its 0.92 Cronbach's Alpha coefficient. The Cronbach's Alpha Coefficient was computed using SSPS (IBM SPSS 20.0).

Data Collection

The researcher conducted individual interviews with participants, providing clear instructions and addressing any questions or concerns. Participants were encouraged to participate and thanked for their cooperation. Each interview lasted approximately 25-30 minutes, following a structured approach tailored to the study design.

Statistical Analysis

Study 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 normality of the data was evaluated using the Shapiro-Wilk test. Non-parametric tests like the Mann-Whitney U Test and the Kruskal-Wallis H Test were used to find differences in satisfaction levels based on demographic characteristics. A two-tailed p-value of less than 0.05 was considered statistically significant.

Results

The study focused on analyzing cancer patients' socio-demographic characteristics. Concerning patients' ages, 39.3% were aged 68–77 years, and a high percentage of them, 79% were married. Regarding residence areas, about 32.8% of them were from Al-Muthanna City. The study also found that 40.3% of patients were unemployed, 29.5% had only completed primary school, and 32.3% reported a monthly income between 601 - 900 Iraqi dinars. As the data showed in the Table 1, the demographic distribution of samples is summarized. The social demographic data is comprised of age group, gender wise, marital status, residential area, occupation, education level and monthly income. As the data showed in the Table 1, under age group 68-77 years reported maximum patients (39.55%) visited centre for cancer related consultation and treatment. At the same time age group 18-27 years were least (1.25%) seeking consultation and treatment for cancer. Refer to the Table 1, under gender distribution patient's data showed both male and female visited and consulted equally i.e. 50% for the cancer treatment. Further data also represents the cancer patients visited centre for the clinical consultation and treatment for the cancer. As the data showed in the Table 1, under marital status, married patients reported highest i.e. 79.8% who have either gone for consultation and or treatment for the cancer. Further Table also shows the geographical distribution of patients visited centre for consultation and treatment services. As the data showed in the Table Muthanna region has reported highest (32.75%) number of patients visited centre and least from Dyala region (1.75%). Table 1 also summarized the distribution of patients based their occupation and study reported highest number for unemployed. At the same time, distribution was also made based on education and monthly income. Refer to Table 1, highest i.e. 29.5% patients with primary school education and 601-900 IQD monthly income represents 32.25% for those patients seeking consultation and treatment for the cancer.

The Table 2 demonstrates that cancer patients generally exhibited moderate responses to the healthcare services offered by doctors for all items except specific items numbered (5, 6, 13, 16, 23, and 24), their responses were lower. The assessment of services and patient satisfaction was broadly categorized under strongly dissatisfaction, dissatisfaction, neutral, satisfaction and strongly satisfaction. Refer to the Table 2, a large percentage of patients visited centre for consultation and cancer treatment were strongly dissatisfied with range 22.75-51.50%. The percentage of dissatisfaction range reported varying 0-47.50% while neutral ranges 4.0 to 38.25%. Under the satisfaction, patients were examined for the services provided by physician and as the data showed in the Table 2, range of satisfaction was reported 0.5-42.25%. Additionally, patients strongly satisfaction range was reported 00-13%. The mean range for patient satisfaction with the care provided by physician range 1.76-2.77%.

Table 3 reveals that cancer patients generally exhibited moderate responses to the healthcare services offered

Table 1. Distribution of the Studied Sample Related to their Socio-Demographic Data

Socio-demographic data	Groups	No.	%
Age/ years	18-27	5	1.25
	28-37	33	8.25
	38-47	48	12
	48-57	31	7.75
	58-67	43	10.75
	68-77	157	39.25
	78-87	83	20.75
Gender	Male	200	50.00
	Female	200	50.00
Marital status	Single	22	5.50
	Married	316	79.00
	Divorced	8	2.00
	Widow	54	13.50
Residence area	Najaf	74	18.50
	Karbala	11	2.75
	Babylon	21	5.25
	Baghdad	15	3.75
	Diyala	7	1.75
	Nineveh	27	6.75
	Diwaniyah	62	15.50
	Muthanna	131	32.75
	Wasit	30	7.50
	Maysan	21	5.25
Occupation	Thi Qar	1	0.25
	Governmental employ	71	17.7
	Free-business	70	17.5
	Retired	93	23.25
	Students	5	1.25
Education level	Unemployed	161	40.25
	Illiterate	88	22.00
	Read and write	34	8.50
	Primary school	118	29.50
	Intermediate school	48	12.00
	Secondary school	30	7.5
	Institute or college	68	17.00
Monthly income	Post-graduated	14	3.50
	<300 IQD	50	12.50
	300-600 IQD	128	32.00
	601-900 IQD	129	32.25
>900 IQD	93	23.25	

by nurses for all items (with a mean range of M= 2.34-3.66.) except items 10, 11, their satisfaction rate was low with a mean range = (1- 2.33). Table 3 demonstrates the correlation between the care provided by the paramedics i.e. nurses and patients satisfaction. The assessment of services and patient satisfaction was broadly categorized under strongly dissatisfaction, dissatisfaction, neutral, satisfaction and strongly satisfaction. The data showed a larger percentage of population visited centre was strongly dissatisfied i.e. dissatisfaction level ranges 00-46.25%. Further, a large number of patients showed dissatisfaction

Table 2 .Distribution of Patients' Satisfaction with the Care Provided by Doctors

Care provided by doctors Items	Strongly Dissatisfaction N (%)	Dissatisfaction N (%)	Neutral N (%)	Satisfaction N (%)	Strongly Satisfaction N (%)	Mean range	Evaluative
They attention to your physical problems	150 (37.50)	13 (3.25)	93 (23.25)	87 (21.75)	57 (14.25)	2.72	M
They respect and caring you personally	172 (43)	7 (1.75)	16 (4.0)	151 (37.75)	54 (13.5)	2.77	M
Willingness to listen to concerns	172 (43)	14 (3.50)	95 (23.75)	91 (22.75)	28 (7.0)	2.47	M
Comfort and psychological support	173 (43.25)	20 (5.0)	92 (23.0)	86 (21.5)	29 (7.25)	2.45	M
Waiting time for consultation	201 (50)	83 (20.75)	110 (27.5)	5 (1.25)	1 (0.25)	1.81	L
Time for examination and diagnosis	168 (42)	31 (7.75)	153 (38.25)	44 (11)	4 (1.0)	2.21	L
Physical examination method	172 (43)	5 (1.25)	28 (7.0)	169(42.25)	26 (6.5)	2.68	M
Knowledge and experience with illness	173 (43.25)	20 (20)	71 (17.75)	96 (24)	40 (10.0)	2.53	M
Information provided about medical tests.	171 (42.75)	23 (5.75)	84 (21.0)	83 (20.75)	39 (9.75)	2.49	M
Information provided about your illness.	179 (44.75)	32 (8.0)	75 (18.5)	90 (22.5)	24 (6.0)	2.37	M
Information provided about treatment type.	180 (45)	4 (1.0)	21 (5.25)	169 (42.25)	26 (6.50)	2.64	M
Information about treatment method.	181 (45.25)	0 (00)	19 (4.75)	164 (41)	36 (9.0)	2.69	M
Information about treatment side effects.	182 (45.5)	31 (7.75)	115 (28.75)	69 (17.25)	5 (1.25)	2.2	L
Information provided about treatment results.	179 (44.75)	34 (8.5.0)	76 (19.0)	87 (21.75)	24 (6.0)	2.36	M
Satisfaction with treatment duration.	179 (44.75)	9 (2.25)	74 (18.50)	124 (31)	14 (3.5)	2.46	M
Outcome of doctors' meeting towards illness	188 (47)	17 (4.25)	102 (25.50)	65 (16.25)	28 (7.0)	2.32	L
Report and evaluation after treatment	173 (43.25)	18 (4.50)	106 (26.5)	80 (20.0)	23 (5.75)	2.41	M
Medical follow-up and frequency of visits	173 (43.25)	3 (0.75)	39 (9.75)	154 (38.5)	31 (7.75)	2.67	M
The time that doctor devotes to visiting you and providing consultation	173 (43.25)	10 (2.5)	40 (10.0)	148 (37.0)	29 (7.25)	2.63	M
Ability to communicate with a doctor and seek advice when an emergency occurs	172 (43)	5 (1.25)	53 (13.25)	138 (34.5)	32 (8.0)	2.63	M
Coordination between center's doctors and your personal doctor	171 (42.75)	14 (3.5)	82 (20.5)	81 (20.25)	52 (13.0)	2.57	M
How to cope while in your care (listening to you and answering your questions)	173 (43.25)	5 (1.25)	39 (9.75)	156 (39)	27 (6.75)	2.65	M
Presence of the psychologist and assess of psychological status	206 (51.50)	93 (23.25)	94 (23.5)	7 (1.75)	0 (00)	1.76	L
Attend nutritionist & provide nutrition guidance	91 (22.75)	190 (47.50)	117 (29.25)	2 (0.5)	0 (00)	2.08	L

Level of Assessment (Low [L] =1-2.33; Moderate [M] =2.34-3.66; High [H] =3.67-5)

for the care provided by nurses to the patients visited centre for treatment of cancer and ranges 00-51.50%. Further, patients remain neutral for the care provided by the nurses' range 00-49.0%. It is interesting to add here in the study a large population shows satisfaction (range 4.25-50.5%) and strongly satisfied (00-19.5%). The mean range was reported for the patient satisfactions under the care provided by nurses ranges 2.06-3.26%.

Table 4 reveals that cancer patients generally exhibited moderate responses to the care services organization across all the examined items (with a mean range of M= 2.23-3.66). However, it's noteworthy that for specific items (5, 6, 7, 8, and 22), their responses were notably lower (M= 1-2.33). The findings reveal noteworthy variations in cancer patients' satisfaction levels based on various factors including age, gender, place of residence,

occupation, and monthly income ($p < 0.05$). The patient satisfaction was also examined at the organization level for the facility provided. The assessment of services and patient satisfaction was broadly categorized under strongly dissatisfaction, dissatisfaction, neutral, satisfaction and strongly satisfaction. The data showed in the Table 4, showed much higher population was reported strongly dissatisfaction (22.75-52.50%), while dissatisfaction level was slightly low range 00-48.25%. There were significant number of patients were neutral on the assessment of service provided at the centre ranges 4.0-29.50%. The assessment patient's satisfaction at the organization level for the facility provided towards cancer treatment reported in the Table 5 where satisfaction ranges 0.5-42.25% while strongly satisfied range was 0.0-13.75%.

Table 3. Distribution of Patients' Satisfaction with the Care Provided by Nurses

Care provided by Nurses Items	Strongly Dissatisfaction N (%)	Dissatisfaction N (%)	Neutral N (%)	Satisfaction N (%)	Strongly Satisfaction N (%)	Mean range	Evaluative
Their human qualities (politeness, respect, charity, kindness and patience)	132 (33.0)	17 (4.25)	1 (0.25)	180 (45.0)	70 (17.5)	3.1	M
Care, comfort, emotional and physical Support.	125 (31.25)	24 (6.0)	0 (00)	174 (43.5)	77 (19.25)	3.14	M
Speed in responding to your calls.	143 (35.75)	92 (23.0)	95 (23.75)	70 (18.5)	0 (00)	2.87	M
Listening to your questions and answering them.	49 (12.25)	0 (00)	143 (35.75)	178 (44.5)	30 (7.5)	3.35	M
Time dedicated to you.	149 (37.25)	2 (0.50)	64 (16.0)	154 (38.5)	31 (7.75)	2.79	M
Ways to deal with you during your care.	0 (00)	150 (37.5)	9 (2.25)	202 (50.5)	39 (9.75)	3.33	M
Information provided about medical examination, lab investigation.	71 (17.5)	48 (12.0)	196 (49.0)	76 (19.0)	9 (2.25)	2.76	M
Information provided about your care.	53 (13.25)	162 (40.5)	56 (14.0)	91 (22.75)	38 (9.5)	2.75	M
Information provided to you about the type of treatment you are receiving and the methods of administering it.	0 (00)	149 (37.25)	22 (5.5)	205 (51.25)	24 (6.0)	3.26	M
Information provided about treatment side effects.	185 (46.25)	48 (12.0)	129 (32.25)	35 (8.75)	3(0.75)	2.06	L
Guidance about diet.	57 (14.25)	206 (51.5)	120 (30.0)	17 (4.25)	0 (00)	2.24	L

Level of Assessment (Low [L]=1-2.33; Moderate [M]=2.34-3.66; High [H]=3.67-5)

Discussion

According to present study, the study results show that 39.25% of the study sample was within the age group 68-77 years old. The study showed the occurrence of cancer among the visiting population under different age group, residence, occupation, gender, education and income. This finding is supported by the study done in India they mentioned that 70 years is the dominant age [16]. Concerning marital status, the majority of participants (79%) were married. This result is similar to the previous study, which mentioned that the majority of samples were married [17]. Concerning level of education, about (29.5%) of the study subjects was primary school graduate. This result agrees with another study done in Babylon Province, who mentions that 31.9% of participants in the study were elementary school graduates [12]. The finding of the present study revealed that more than thirty of patients were unemployed. This outcome is consistent with the earlier research who revealed that, upon diagnosis, more than half of cancer patients either missed working or not work [18]. Concerning socio-economic status or monthly income, more than thirty percent of the study (32.3 %) reveals their monthly income is (adequate to some extent), while concerning occupation (40.3%) of those are unemployed. This result is supported by the previous study, which indicates the same finding [19].

Study also shows that there generally were moderate responses to the healthcare services offered by doctors for all items except some services, such as waiting time for consultation, time for examination, and diagnosis; information provided about treatment and side effects; outcome of the doctors' meeting about your illness; presence of the psychologist and assessment of psychological status; attending nutritionists and providing nutrition guidance; the level of dissatisfaction with these services was evident from the results of the study.

These findings corroborate those of the prior study that suggested the physician's behavior is closely related to patient satisfaction. The primary results are in line with the premise that healthcare services are positively associated with patient satisfaction [20]. The present findings reveal that cancer patients exhibited moderate responses to the healthcare services offered by nurses for all items, except items (Information was provided about side effects of treatment and guidance about diet) their satisfaction rate was low. From the researcher's point of view, nurses play a crucial role in providing nursing care to cancer patients, as they provide emotional and psychological support and facilitate communication between patients and doctors, in addition to other nursing services. Therefore, nurses must be aware of their responsibilities towards patients, with a focus on providing information about the side effects of treatment and guidance on the diet for cancer patients.

This result agreement with another study, which mentions that the patient responses need more information about clinical trials, alternative treatment options availability, and the opportunity to schedule a follow-up appointment to finalize a decision to treat [13, 21]. There is also another study conducted in Iraq in the city of Basra, which stated that the lowest satisfaction rate was for the information given by the nurse [22]. Patients' dissatisfaction about nursing care may have a major influence on health services, hence affecting health and illness behavior. Previous study indicates that patients who were dissatisfied about the nursing care received were less likely to adhere to the recommended course of treatment or return for the needed follow-up visits [23]. The data demonstrations that cancer patients showed moderate satisfaction to most of the care services provided by the organizations, except for some services that they expressed dissatisfaction with such as the ease of finding their way to the different departments in the center; building environment; hotel services in the center

Table 4. Distribution of Patients Satisfaction towards Services and Organization of Care

Care and services organization Items	Strongly Dissatisfaction No. (%)	Dissatisfaction No. (%)	Neutral No. (%)	Satisfaction No. (%)	Strongly Satisfaction No. (%)	Mean Range	Evaluative
The guidance information provided when you enter the center	161 (40.25)	10 (2.50)	82 (20.0)	91 (22.75)	56 (14.0)	2.68	M
Center Appointment and Chemotherapy Scheduling.	177 (44.25)	4 (1.0)	16 (4.0)	147 (36.75)	56 (14.0)	2.75	M
Contact methods such as phone number and informing you of urgent changes in the treatment schedule.	168 (42)	13 (3.25)	85 (21.25)	106 (26.5)	28 (7.0)	2.53	M
Accessibility (car park, transportation)	181 (45.25)	18 (4.50)	81 (20.25)	91 (22.75)	29 (7.25)	2.42	M
Ease of finding the way to the different departments in the center	212 (53.0)	75 (18.75)	105 (26.25)	7 (1.75)	1 (0.25)	1.78	L
Building environment (cleanliness, spaciousness, tranquility...)	176 (44.0)	24 (6.0)	146 (36.5)	50 (12.50)	4 (1.0)	2.21	L
Hotel services in the center and ward (sitting places, Number of beds, food place, Laundries)	210 (52.5)	87 (21.75)	96 (24.0)	7 (1.75)	0 (0)	1.75	L
Availability of entertainment means, such as television.	178 (44.5)	31 (7.75)	105 (26.25)	78 (19.5)	8 (2.0)	2.27	L
Kindness and cooperation from the administrators, technicians and reception staff.	176 (44.0)	17 (4.25)	71 (17.75)	93 (23.25)	43 (10.75)	2.53	M
Laboratory staff deals you with kindness and respect.	187 (46.75)	26 (6.50)	67 (16.75)	92 (23)	28 (7.0)	2.37	M
Information exchange between Healthcare Providers.	173 (43.25)	7 (1.75)	21 (5.25)	169 (42.25)	30 (7.5)	2.69	M
Waiting time to receive laboratory test results.	183 (45.75)	0 (00)	17 (4.25)	160 (40.0)	40 (10.0)	2.69	M
Waiting time to receive radiological imaging results.	172 (43.0)	12 (3.0)	61 (15.25)	111 (27.75)	44 (11.0)	2.61	M
Speedy of medical tests execution.	190 (47.5)	28 (7.0)	63 (15.75)	87 (21.750)	32 (8.0)	2.36	M
Speedy implementation of prescribed treatments.	181 (42.750)	7 (1.75)	64 (16.0)	126 (31.50)	22 (5.5)	2.5	M
Availability of medications and supportive treatments at the center.	187 (46.75)	16 (4.0)	94 (23.5)	73 (18.25)	30 (7.5)	2.36	M
Availability of treatments prescribed (chemo, radiation, immune, and hormonal therapy)	175 (43.75)	17 (4.25)	106 (26.5)	74 (18.5)	28 (7.0)	2.41	M
Availability of laboratory analyzes and tests at the center	172 (43.0)	5 (1.25)	38 (9.5)	143 (35.75)	42 (10.5)	2.7	M
Cost of diagnostic services	163 (40.75)	13 (3.25)	38 (9.5)	141 (35.25)	45 (11.25)	2.73	M
Cost of treatment services	168 (42.0)	10 (2.50)	54 (14.0)	131 (32.75)	37 (9.25)	2.65	M
Providing food to patients (type, quantity, cooking)	182 (45.0)	11 (2.75)	72 (18.0)	80 (20.0)	55 (13.75)	2.54	M
Provides supportive consultations such as surgical, dental, internal medicine, dermatology, joints, as well as surgical operating theaters in the center.	91 (22.750)	193 (48.25)	114 (29.5)	2 (0.5)	0 (00)	2.07	L
Availability of health education means about the disease, methods of prevention, complications, and the importance of early detection, such as posters and others.	186 (46.5)	2 (0.5)	26 (6.50)	158 (39.50)	28 (7.0)	2.6	M
Information provided about leaving the center	178 (44.50)	3 (0.75)	45 (11.25)	145 (36.25)	29 (7.25)	2.61	M

Level of Assessment (Low [L]=1-2.33; Moderate [M]=2.34-3.66; High [H]=3.67-5)

and ward (sitting places, number of beds, food place, laundries); availability of entertainment means, such as television; and providing supportive consultations such as surgical and dental, internal medicine, dermatology, joints, as well as surgical operating theaters in the center). The facility available and accessible for the cancer patient also plays a pivotal role in the assessment of satisfaction.

As the findings are shown, satisfaction was analyzed in respect with the overall facility. In the study, overall the enrolled cancer patients gone for cancer treatment at the Middle Euphrates Cancer Center showed dissatisfaction for the care provided by Euphrates Cancer Center. A study conducted in the city of Erbil stated that most of the patients in public hospitals expressed that only 8.4%

Table 5. Statistical Differences in Patients Satisfaction towards Quality of Healthcare Services with Socio-demographic Data

Items	Sup group	Mean rank	p-value
Age	18-27	213.4	< 0.05
	28-37	255.21	
	38-47	242.99	
	48-57	263.08	
	58-67	222.77	
	68-77	194.22	
	78-87	130.36	
Gender	Male	228.25	< 0.05
	Female	172.75	
Marital status	Single	183.14	> 0.05
	Married	206.22	
	Divorced	171.44	
	Widow	178.39	
Residence area	Najaf	251.5	< 0.05
	Karbala	236.68	
	Babylon	295.69	
	Baghdad	206.23	
	Diyala	257.43	
	Nineveh	186.13	
	Diwaniyah	189.56	
	Muthanna	182.84	
	Wasit	129.88	
	Maysan	150.71	
	Thi Qar	89	
	Occupation	Governmental employ	
Free-business		207.56	
Retired		244.28	
Students		202	
Unemployed		166.02	
Education level	Illiterate	190.04	> 0.05
	Read and write	196.16	
	Primary school	203.33	
	Intermediate school	193.94	
	Secondary school	201.67	
	Institute or college	217.68	
Monthly income	Post-graduated	189.5	< 0.05
	<300 IQD	62.44	
	300-600 IQD	100.87	
	601-900 IQD	263.21	
	>900 IQD	324.87	

were satisfied with the provided health care [24]. The quality of healthcare has become an increasing necessity for patient satisfaction.

Patients indicated that there are deficiencies in health care in many areas, such as poor access to care in terms of transportation and orientation in health care facilities and a poor environment. These defects are very important

elements that greatly affect the survival of cancer patients. The management of health organizations should focus attention on this issue to improve patient satisfaction [25]. The outcome of study shows that differences in patients' satisfaction towards quality of healthcare services with socio-demographic data, the study findings show that there is a significant relationship between socio-demographic variables such as age, gender, residence area, occupation, and monthly income with quality of healthcare services. While there are non-significant, differences with the remaining variables such as, level of education and marital status with healthcare services care at p-value (0.05). In the present study, age emerged as a significant factor influencing satisfaction levels. The research, which categorized patients into various age groups spanning 18 to 87 years, observed a clear trend of declining satisfaction with increasing age. The 18-27 years age group exhibited the highest satisfaction, while satisfaction levels decreased in the subsequent age groups. This decline in satisfaction with age may be attributed to various factors, including differences in healthcare needs, communication preferences, and expectations.

Younger patients may harbor distinct expectations and priorities in healthcare, influencing their higher satisfaction rates. In a previous study, it was reported that older patients, grappling with unique challenges and health issues associated with aging, might have heightened expectations due to the complexity of their healthcare needs. The increasing burden of chronic conditions among older individuals could contribute to this trend. Comorbidities and the necessity for more comprehensive care may result in higher expectations, potentially leading to lower satisfaction if unmet [12, 26, 27]. The present study revealed that male patients, on average, reported higher satisfaction with healthcare services compared to females. Men may prefer more direct and concise communication, while women may value a more empathetic and holistic approach. Men may be more likely to prioritize treatment effectiveness and avoid discussing emotional concerns, while women may prioritize understanding side effects and discussing their impact on quality of life. The previous research indicates distinct decision-making processes, and societal/cultural factors, including gender roles and stereotypes, may also contribute to these disparities in patient satisfaction [28, 29].

Patients' satisfaction with cancer healthcare services in Iraq varies significantly based on their residential proximity to oncology centers. Those living closer to these centers tend to express higher satisfaction levels, as evidenced by mean rank scores. This aligns with previous research highlighting the impact of proximity on patient satisfaction [30]. Notably, Al Najaf, relatively closer, had the highest. The study revealed statistically significant differences in cancer patients' satisfaction with healthcare services based on their occupation. Governmental employees showed the highest satisfaction scores, possibly due to the comprehensive healthcare benefits associated with their jobs. Retired individuals also exhibited high satisfaction, potentially because of increased focus on health post-retirement. Free-business professionals had a moderate satisfaction score, reflecting potential

financial stress and limited healthcare benefits in small business settings. Students scored the lowest, possibly due to limited access to resources, financial constraints, and time constraints related to academic commitments. These results agree with other studies which mention that job stability and financial stress influence perceptions of healthcare services [31, 32].

The study reveals significant disparities in cancer patients' satisfaction with healthcare services based on monthly income, with higher-income patients reporting greater satisfaction. The findings underscore the importance of addressing healthcare access and quality disparities to ensure optimal care for all cancer patients [33]. The research specifically investigated the link between socioeconomic status, including income, and patient satisfaction among cancer patients. Results indicate that higher-income individuals are more likely to express satisfaction across various healthcare aspects, such as communication with providers and overall care quality [34]. The study emphasizes the necessity for healthcare policymakers and providers to mitigate income-based healthcare disparities. Proposed strategies include expanding insurance coverage, enhancing healthcare infrastructure in underserved areas, and offering financial assistance to low-income patients.

In conclusion, the study participants expressed dissatisfaction with some services rendered by doctors, nurses, or service organizers, based on the current results. Furthermore, a number of demographic factors, including age, gender, place of residence, employment, and monthly income, have an impact on how satisfied patients are with the healthcare system. These results highlight how important it is to customize healthcare services, improve accessibility, and raise the standard of care in order to greatly increase patient happiness.

Author Contribution Statement

AAAA and FMA conceptualized study, AAAA collected data and interpreted results, AAAA and CI analyzed results and wrote the manuscript, AAAA and FMA revised manuscript and submitted to the journal.

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Recommendation

The study recommends emphasizing the urgent need for healthcare providers to address and improve patient experiences and working to expand the center and build a number of counseling clinics, such as nutrition counseling, mental health, surgery, and other specialties related to treating cancer patients.

Implications of the findings

The current study's findings and conclusions highlight how urgently healthcare professionals must address and

enhance patient experiences. Additionally, in order to accommodate the growing number of patients, efforts are being made to expand the center and construct operation rooms as well as several counseling clinics for topics including nutrition, mental health, surgery, and other specialties related to treating cancer patients. In order to improve patient happiness and service quality in the oncology environment, healthcare organizations must take these subtle factors into consideration.

Study Limitations

Recall bias may exist since we relied on patient reports of information. Nonetheless, by using repeated and leading questions, an attempt was made to reduce the consequences of recall bias. If all cancer treatment facilities, including private ones as well as other medical colleges and hospitals, had been included, the study might have been more broadly applicable.

Ethics approval and consent to participate

Yes, study was carried out after the ethical approval from Middle Euphrates Cancer Center in Al-Najaf Al Ashraf Governorate for their help in collecting the data in this study. The participants have given the consent for the enrollment in this study.

Consent for publication

All the authors agreed for the submission of manuscript and publication subsequently.

Availability of data and material

Data will be available on request.

Competing interests

There is no competing of interest.

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