



Research Article

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Assessment of Patient Satisfaction in the Outpatients' Chemotherapy Unit of Chandaria Cancer Center, MTRH, Kenya

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Abstract

Background: Cancer remains a major cause of morbidity and mortality globally. Chemotherapy, while essential in cancer management, has profound physical and psychological implications that can affect patients' Quality of Life (QoL) and satisfaction.

Aim: To assess patient satisfaction in the outpatients' chemotherapy unit of Chandaria cancer centre, MTRH. **Methodology:** A cross-sectional descriptive study was conducted among 315 adult oncology patients receiving chemotherapy.

Systematic sampling was used. Data were collected using structured questionnaires and analyzed with SPSS v23. Descriptive and inferential statistics were applied; multivariable logistic regression identified predictors of QoL. Significance was set at $p < .05$.

Results: The study revealed that 80% of patients were unaware of the purpose of chemotherapy, indicating inadequate patient education. Patient satisfaction was significantly influenced by information provision ($p = .004$), physician availability ($p = .003$), information exchange ($p = .001$), and inclusion in decision-making ($p = .008$). However, patients reported receiving minimal guidance on managing chemotherapy side effects (28.9%), infection prevention (17.8%), daily activity impact (39%), ability to continue working (14%), survival expectations (16.5%), and dietary advice (1.6%). These gaps negatively affected their Quality of Life (QoL), which averaged 47.63, while overall satisfaction was 48.77%. Multivariate analysis showed that psychological well-being ($AOR = 1.03$, $p = .004$), social/family well-being ($AOR = 1.02$, $p = .006$), and higher education ($AOR = 4.3$, $p = .007$) were positively associated with QoL, whereas advanced cancer stage ($AOR = 0.21$, $p = .012$), comorbidities ($AOR = 0.28$, $p < .001$), pain, nausea/vomiting, and depression ($AOR = 0.29$, $p = .002$) were negatively associated. Overall, the findings highlight significant information deficits and communication gaps that adversely impact patient satisfaction and QoL.

Conclusion: Lower patient satisfaction and QoL were associated with unmet information needs and high symptom burden. Strengthening communication, patient education, and psychosocial support is vital to improve cancer care at MTRH.

Keywords: Patient satisfaction; Chemotherapy; Quality of life; Oncology; Chandaria Cancer Center; MTRH; Kenya.

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Introduction

Cancer is a major public health burden and among the top causes of death worldwide. According to GLOBOCAN (2020), an estimated 19.3 million new cases and 10 million deaths occurred globally [11]. Sub-Saharan Africa faces a dual challenge of rising incidence and limited treatment capacity [5]. In Kenya, the growing number of cancer cases has strained public cancer centers, making quality-of-care assessment increasingly important.

Chemotherapy remains a vital treatment modality for solid and hematologic malignancies [1,3]. Despite its efficacy, it is often associated with fatigue, nausea, vomiting, hair loss, immunosuppression, and emotional distress (Dodd et al., 2001). These side effects can significantly impact patients' quality of life and perceptions of care. Patient satisfaction—an indicator of perceived quality and effectiveness of services—reflects the gap between expectations and experiences [8]. Satisfied patients are more likely to adhere to treatment, maintain follow-ups, and exhibit improved outcomes [2]. This study therefore aimed to assess patient satisfaction and QoL among outpatients receiving chemotherapy at the Chandaria Cancer Center, MTRH, and to identify associated determinants.

Methods

A hospital-based cross-sectional descriptive design was conducted at the Chandaria Cancer Center, a specialized oncology unit within MTRH in Eldoret, Kenya. The facility serves a large population across Western Kenya and neighboring regions. The study population comprised adult cancer patients (≥18 years) attending the outpatient chemotherapy clinic. A sample of 315 participants was obtained using systematic random sampling. Eligibility included a confirmed cancer diagnosis, receipt of at least one chemotherapy cycle, and informed consent. Patients too ill to participate or on concurrent radiotherapy was excluded.

Data were collected using a structured questionnaire divided into sections: socio-demographics, satisfaction with chemotherapy information, QoL domains, and satisfaction with treating physicians. SPSS v23 was used for data analysis. Descriptive statistics summarized the findings, while multivariable logistic regression determined predictors of QoL. Ethical approval was obtained from MTRH/MU-IREC; all participants provided written informed consent.

Results

Respondents' characteristics

A total of 315 participants (response rate 100%) completed the study. Most were female (70.2%) with a mean age of 45.8 years. About 53.3% had not attained secondary education, and breast cancer (26.7%) was the leading type. Stage II disease accounted for 41.6%, and 24.1% of patients reported comorbidities. One hundred thirty-one (41.6%) of participants were at stage II of cancer with good performance status (ECOG PS 0) (Table 1).

Patient satisfaction with information on chemotherapy

The study found that only 20% understood the purpose of chemotherapy, and most received limited information from healthcare providers. Only a small proportion were informed about side-effect prevention (28.9%), infection risk (17.8%), impact on

Table 1: Socio-demographic and clinical characteristics of adult cancer patients under chemotherapy treatment at chandaria, (MTRH) Kenya 2023.

Variables	Frequency (n=310)	Percentage (%)
Age		
18–40	102	32.4
41–49	82	26
50–59	94	29.9
> = 60	37	11.7
Sex		
Female	221	70.2
Male	94	29.8
Marital status		
Married	224	71.1
Single	22	7
Divorced	38	12.1
Widowed	31	9.8
Educational status		
No Formal Education	25	8
Primary	36	11.4
Secondary	168	53.3
Tertiary	86	27.3
Occupational status		
Casual worker	133	42.2
Self-employed	117	37.1
Government of Kenya (GoK)	49	9.2
Non-Government Organization (NGO)	16	11.5
Cancer type		
Breast cancer	84	26.7
GI cancer a	74	23.5
Gynaecological cancer b	68	21.6
Haematological cancer	57	18.1
Lung cancer	17	5.4
Prostate cancer	15	4.7
Time since diagnosis		
< 12 months	223	70.8
12–24 months	29	9.2
25–36 months	22	7
37–48 months	16	5.1
49–60 months	14	4.4
>60 months	11	3.5
Stage of cancer		
Stage I	23	7.3
Stage II	131	41.6
Stage III	68	21.6
Stage IV	93	29.5
Comorbidity		
No comorbidity	239	75.9
Hypertension	44	14
DM	16	5.1
Cardiac diseases	9	2.9
Others c	7	2.1
ECOG PS		
0	215	68.3
1	74	23.5
2	12	3.8
3	14	4.4

daily activities (39%), ability to continue working (14%), expected survival (16.5%), and dietary advice (1.6%), indicating significant gaps in patient education and communication (Table 2).

Table 2: Patient satisfaction with information on chemotherapy.

Variables	Frequency	Percentage
Purpose of the chemotherapy		
Neo-adjuvant	10	3.2
Adjuvant	31	9.8
Palliative	22	7
Don't Know	252	80
Variables	Frequency n (%)	
	Yes	No
Information provide (Healthcare provider) *		
Session of chemotherapy treatment	215(68.3)	100(31.7)
All possible side effects of treatment	256(81.3)	59(18.7)
Prevention or reduce side effects at home	94(28.9)	221(71.1)
Risk of infection during treatment?	56(17.8)	259(82.2)
Impact of treatment on activities of daily living	23(39)	192(61)
Possibility to continue to work life or leisure during treatment?	44(14)	271(86)
Expected survival with chemotherapy?	52(16.5)	263(83.5)
Dietary advice during treatment?	61(19.4)	254(80.6)
Possibility of treatment failure?	11(3.5)	304(96.5)
Influence of treatment on the development of cancer cells?	5(1.6)	310(98.4)
Modality of treatment apart from chemotherapy?	214(67.9)	101(32.1)
What will happen when you decide to stop chemotherapy?	278(88)	37(12)
* Multiple responds		

Quality of life among cancer patients receiving chemotherapy

The study reported a mean Quality of Life (QoL) score of 47.63 ± 10.07 , with only 43.23% of participants experiencing a good QoL.

Functional and symptom scale scores

The study showed that domain scores ranged from a mean (SD) of 46.73 (23) for physical well-being to 61.07 (21.44) for cognitive well-being. Psychological well-being was the most affected domain, with 61% of participants reporting poor QoL, while cognitive functioning was the least affected, with 77.1% reporting good QoL. Among symptoms, appetite loss was the most prevalent, affecting 77.5% of participants (Table 3).

Table 3: Domain and symptom scale score among adult cancer patient undertaking chemotherapy treatment at chandaria (MTRH).

Scale/Item	Mean (SD)	Good QoL (%)	Poor QoL (%)
Domains	48.4 (16.28)	139(44.2)	176(55.8)
Physical well-being	46.73 (23)	141(44.8)	174(55.2)
General well-being	45.75 (25.73)	138(43.8)	177(56.2)
Psychological well-being	44.48 (21.29)	123(39)	192(61)
Social/family well-being	47.53 (28.39)	150(47.6)	165(52.4)
Cognitive well-being	61.07 (21.44)	243(77.1)	72(22.9)
Symptom scale	60.16 (14.66)	65(20.6)	250(79.4)
Fatigue	66.88 (17.71)	65(20.6)	250(79.4)
Nausea and vomiting	50.91 (16.25)	120(38)	190(63)
Pain	62.31 (29.12)	106(33.7)	204(66.3)
Dyspnoea	29.68 (25.17)	251(81.3)	59(18.7)
Insomnia	48.28 (21.67)	163(51.7)	152(48.3)
Appetite loss	69.14 (26.77)	71(22.5)	244(77.5)
Constipation	39.89 (25.37)	207(65.7)	108(34.3)
Diarrhea	30.86 (23.32)	204(64.8)	111(35.2)
Financial difficulties	65.16 (25.25)	88(27.9)	227(72.1)

Table 4: Association between different domains and symptom scales with QoL of adult cancer patients undertaking chemotherapy treatment at chandaria, MTRH.

The study identified several factors influencing Quality of Life (QoL) among cancer patients. Bivariable analysis revealed that all QoL domains, most symptoms (except dyspnea and diarrhea), educational level, marital and occupational status, cancer type and stage, ECOG performance status, comorbidity, and depression were associated with QoL ($p < .25$). In multivariable analysis, psychological well-being, social/family well-being, financial difficulty, pain, nausea and vomiting, education level, cancer stage, comorbidity, and depression remained significant. Patients with better psychological (AOR=1.03) and social/family well-being (AOR=1.02) were more likely to have good QoL, while those experiencing pain, nausea/vomiting, or financial difficulties were less likely to report good QoL (Table 4).					
Variable	Good QoL (%)	Poor QoL (%)	COR (95% CI)	AOR (95% CI)	p-Value
Domains					
Physical well-being	141 (44.8)	174 (55.2)	1.02 (1.01– 1.03)	1.01 (1.0– 1.04)	0.277

General well-being	138(43.8)	177 (56.2)	1.02 (1.01– 1.03)	0.99 (0.97– 1.01)	0.246
Psychological well-being	123(39)	192 (61)	1.03 (1.02– 1.04)	1.03 (1.01– 1.04)	.004**
Social/family well-being	150(47.6)	165 (52.4)	1.03 (1.02– 1.04)	1.02 (1.01– 1.03)	.006**
Cognitive functioning	243 (77.1)	72 (22.9)	1.01 (1.00– 1.02)	1.0 (0.98– 1.02)	0.705
Symptom scale					
Fatigue	65 (20.6)	250 (79.4)	0.99 (0.97– 1.00)	1.01 (0.99– 1.04)	0.224
Nausea and vomiting	120 (38)	190 (63)	0.96 (0.94– 0.97)	0.95 (0.93– 0.98)	<.001**
Pain	106 (33.7)	204 (66.3)	0.95 (0.94– 0.96)	0.95 (0.93– 0.98)	<.001**
Dyspnoea	251(81.3)	59 (18.7)	1.002 (0.99– 1.01)	/	/
Insomnia	163 (51.7)	152 (48.3)	0.99 (0.98– 1.00)	1.01 (0.99– 1.03)	0.221
Appetite loss	71 (22.5)	244 (77.5)	0.98 (0.97– 0.99)	1.01 (0.99– 1.03)	0.248
Constipation	207 (65.7)	108 (34.3)	0.99 (0.98– 1.00)	0.99 (0.98– 1.01)	0.609
Diarrhea	204 (64.8)	111 (35.2)	0.99 (0.98– 1.01)	/	/
Financial difficulties	88 (27.9)	227 (72.1)	0.96 (0.95–	0.97 (0.95–	<.001**
n=315.					
**Significant level at p<.01; *significant level at p<.05					

Table 5: Bivariable and multivariable logistic regression of determinant factors with QOL of cancer patients under chemotherapy at chandaria, MTRH.

Variables	Good QoL (%)	Poor QoL (%)	COR (95% CI)	AOR (95% CI)	p-Value
Educational status					
No formal education	17	8	1		
Primary Level	15	21	1.1(0.66– 1.88)	0.94(0.48– 1.83)	0.853
Secondary Level	66	102	1.5(0.67– 3.13)	1.5(0.58– 3.90)	0.391
Tertiary Level	36	50	3.3(1.34– 8.04)	4.3(1.49– 12.32)	.007*
Marital status					
Married	102	122	1		
Single	10	12	0.96(0.39– 2.30)	/	
Divorced	12	26	0.53(0.25– 1.1)	/	
Widowed	10	21	0.55(0.25– 1.21)	/	
Occupational status					
Casual worker	42	91	0.59(0.18– 1.84)	/	
Self-employed	61	56	0.84(0.47–	/	
Government of Kenya (GoK)	31	18	1	/	
Non-Government Organization (NGO)	12	4	2.46(1.02– 5.93)	/	
Comorbidity					
No	118	121	0.29(0.16– 0.55)	0.28(0.14– 0.57)	<.001*
Yes	16	60	1	1	1
ECOG-PS					
Good	100	120	1		
Poor	34	61	0.64(0.39– 1.05)	/	
Stage of cancer					
I	6	7	1	1	
II	40	28	0.9(0.31– 2.63)	0.95(0.28– 3.21)	0.934
III	59	72	0.52(0.19– 1.43)	0.3(0.09– 0.99)	0.05
IV	24	69	0.52(0.19– 1.43)	0.21(0.06– 0.71)	.012*
Cancer type					
Breast cancer	38	46	1		

GI cancer	24	50	0.52(0.27– 0.99)	/	
Haematological cancer	30	27	1.19(0.60– 2.37)	/	
Gynaecological cancer	26	42	0.66(0.35– 1.29)	/	
Lung cancer	8	9	0.96(0.34– 2.74)	/	
Prostate cancer	8	7	1.23(0.41– 3.73)	/	
Depression scale					
No depression	75	87	1	1	
Borderline	43	40	1.19(0.69– 2.02)	1.56(0.77– 3.13)	0.21
Depression	16	53	0.33(0.18– 0.63)	0.29(0.13– 0.63)	.002**
n=315.					
*P value<0.05, significant associated. CI confidence interval, OR odd ratio					

Factors associated with quality of life

The study found that patients with tertiary education were 4.3 times more likely to have good Quality of Life (QoL) compared to those without formal education. Conversely, patients with advanced-stage cancer (stage IV) were 79% less likely to have good QoL than those with early-stage disease. Those without comorbid conditions were 72% less likely to have good QoL compared to those with comorbidities, and patients with depression were 71% less likely to report good QoL than non-depressed individuals (Table 5).

Satisfaction with the treating physician

The study reported an average patient satisfaction score of 48.77 during chemotherapy. Satisfaction was significantly associated with information provision (p=.004), physician availability (p=.003), information exchange (p=.001), and inclusion in decision-making (p=.008) (Table 6).

Table 6: Patients Satisfaction with the treating physician.

Variables	Domains	N	M	SD	p value
Competences of doctors	Technical skills		77.33	18.78	0.114
	Interpersonal skills		74.13	19.84	0.096
	Information provision	315	77.16	18.9	0.004 *
	Availability		75.6	20.89	0.003 *
Other area	Information exchange		78.87	19.35	0.001 *
	Comfort		79.25	19.68	1
	Inclusion in decision making	315	69.83	22.25	0.008 *
	General satisfaction		48.77	17.47	0.182

M: Arithmetic Mean; SD: Standard Deviation p<0.05 statistically significantly

Discussion

The study highlights that patient satisfaction with chemotherapy information and care at Chandaria Cancer Center was generally low, primarily due to insufficient information provision and poor communication. Many patients reported unmet informational needs regarding side effects, infection risk, treatment impact on daily life, ability to continue working, survival expectations, and dietary guidance. As in previous studies, this lack of clear and continuous information negatively affected satisfaction and adherence to treatment [4].

Over the past decade, research has emphasized that adequate patient education enhances adherence and improves Quality of Life (QoL); however, achieving consistent information delivery remains challenging. Patients are often overwhelmed by complex medical details at diagnosis, leading to low retention and understanding.

The mean QoL score was 47.63, lower than findings from comparable studies in Nepal [13], India [10], and Pakistan [15]. Factors significantly influencing QoL included psychological and social well-being, nausea and vomiting, pain, financial difficulty, education level, cancer stage, comorbidity, and depression. Financial strain and symptom burden were major contributors to poor QoL. Patients with tertiary education had significantly better QoL (AOR=4.3), while those with advanced-stage cancer and depression were much less likely to report good QoL.

Consistent with global evidence, depression and disease progression were strong negative predictors of QoL, likely due to greater symptom distress, uncertainty, and limited psychosocial support [7,9].

Finally, the average satisfaction with treating physicians was 48.77, with significant associations observed for information provision (p=.004), physician availability (p=.003), information exchange (p=.001), and involvement in decision-making (p=.008). The study underscores the urgent need for improved communication, patient education, and psychosocial care to enhance both satisfaction and quality of life among chemotherapy patients.

Conclusions

Adult cancer patients undergoing chemotherapy at MTRH reported moderate satisfaction and poor QoL. Key influencing factors included communication, information adequacy, psychosocial support, and financial stress. To enhance satisfaction and outcomes, the following are recommended: Implement comprehensive patient education sessions before and during chemotherapy, introduce structured psychosocial support and counseling services, conduct routine QoL screenings using standardized tools, strengthen healthcare provider communication training, last but not the list provide financial assistance programs for economically vulnerable patients.

Author declarations

Ethical approval and consent to participate: Ethical approval was granted by the Moi Teaching and Referral Hospital– Moi University ethics and research committee (reference number

IREC/236/2022). Informed consent was obtained from all the participants and/or their LAR. The study was conducted in accordance to relevant guidelines and regulations.”

Availability of data and materials: The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

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