

## Research Article

# Quality of Life-Scores among Palliative Care Cancer Patients in Kenya

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## Abstract

**Background:** Cancer morbidity and mortality is rising more rapidly in the Low and Middle Income Countries (LMICs). Majority of the patients are diagnosed late and even when diagnosed, often receive sub-optimal care. Quality of life assessment not only indicates level of care-management and state of service functioning but also helps to identify patient needs. The current study evaluated the clinical characteristics and quality of life of among patients receiving palliative care at Kisii Teaching and Referral Hospital.

**Methods:** Using a descriptive cross-sectional design, 120 cancer palliative care patients were assessed for quality of life using MVQOL-I. Eligible ambulatory and in-patients were sequentially enrolled as they came for their scheduled visits. Quantitative data were analyzed descriptively, one way ANOVA used to separate the means across QOL categories.

**Results:** At least 30% participants were aged between 45-54 years old, followed by 25-34 year olds comprising (22.5%)  $p < 0.001$ ; females comprised 63%; and those with post-primary level education 66% ( $p = 0.030$ ). Cervical and breast cancers among females and, prostate cancer among males were the most prevalent, among those  $\geq 25$  years while leukemia was reported only among  $< 25$  year old individuals ( $p < 0.001$ ). Only 44% were on combined therapy ( $p < 0.001$ ). Pain relief (43.3%) and psychosocial counseling (34.2%) were the predominant forms of palliative care ( $p < 0.001$ ). At least 88% had been on palliative care for  $\leq 3$  months, and 31% were diagnosed within 3 months prior to study visit. QOL scores were significantly higher for patients if diagnosed within 1-3 months of symptoms onset ( $P = 0.001$ ); treated by surgery ( $P = 0.001$ ); had been on treatment  $> 1$  year ( $P = 0.001$ ); experienced relief of pain and other symptoms ( $P = 0.001$ ).

**Conclusion:** Pain relief and psychological support were the most satisfactorily met needs for these patients. There is need to strengthen capacity and competence of palliative care providers to enable them provide comprehensive palliative services.

**Keywords:** Socio-demographic; Characteristics; Quality of life-scores; Palliative care; Cancer; Patients

## Background Information

Cancer is the third leading cause of death in the Kenya after infectious and cardiovascular diseases [1]. With the 5 year survival rate of cancer increasing in Kenya, improving Quality of Life (QOL) among cancer survivors should have significant public health implication [2]. Quality of life is defined as individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns [3,4]. The concept of QOL especially in relation to its dimensions namely physical, psychosocial and spiritual is important in palliative care.

Among cancer patients types Goker, et al.; duration of illness and, the treatment modalities are the key predictors of physical and psychosocial wellbeing [5-8]. Other factors that may influence progress in the QOL scores among palliative care cancer patients may include clinical staging of disease at enrolment, individual characteristics and range of palliative care services.

Palliative care has become important in cancer care with its goal being to help the patient achieve the highest QOL [9]. In many African countries, many of cancer patients present to hospitals at advanced stages of the disease when cure is not possible which makes palliative care very essential part of cancer care [10]. Evaluating the QOL of cancer patients receiving palliative care will not only inform the planning of care but also serve as an outcome measure

of the palliative care services. QOL evaluation can accurately be done through getting the patients' experience with cancer and its management. Few researchers if any have investigated QOL and patient experience on nonphysical aspects of cancer on the Kenyan population. There is scarcity of information on the levels of QOL among cancer patients on palliative care in the country. Given the high existing cases of cancer seen in the palliative care unit, this study aims to evaluate the level of QOL and its associated factors among cancer patients receiving palliative care at Kisii Teaching and Referral Hospital. Better understanding of these factors would help improve design and implementation of palliative care across different contexts.

**Methodology**

This study was conducted at Kisii teaching and referral hospital in the palliative care unit, Kisii, Kenya. Using a descriptive cross-sectional research design, 120 palliative care cancer patients were surveyed using MVQOL-I was used to collect information on clinical characteristics and their perceptions about quality of life. The MVQOL-I is a 26 item quality of life questionnaire with one global QOL item and five subscales. Consecutive enrolment of

eligible consenting cancer patients receiving care at the palliative care unit and consented to participate in the study were interviewed. The subscales include symptoms, function, interpersonal, wellbeing and transcendent which covers the physical, social, psychological and spiritual domains respectively.

**Data Analysis**

Descriptive analysis was performed for clinical characteristic by tabulation of frequencies for each class Chi-square tests for independence to determine statistical differences within the subscales values. The association between clinical characteristic factors with QOL scores was analyzed using one way ANOVA.

**Results**

They were 120 participants were interviewed (female: male=1.7:1;  $p < 0.001$ ). Of these 45-54 year olds comprised 30% ( $n=36$ ;  $p=0.001$ ). At least 85% were in-patients. More than 66% of the respondents had attained at least secondary or higher level of education ( $p=0.030$ ). Those professing Christian faith were significantly more in number than were Muslims. A slight majority earned KES 5,000 or less (59%;  $n=71$ ;  $p < 0.001$ ) (Table 1).

Variable / characteristics		N	%	X <sup>2</sup>	df	p-value
Age (years)	18-24	11	9.2	20.10	5	<b>0.001</b>
	25-34	27	22.5			
	35-44	14	11.7			
	45-54	36	30.0			
	55-64	15	12.5			
	>65	17	14.2			
Gender	Female	76	63.3	126.2	3	<b>&lt;0.001</b>
	Male	44	36.7			
Education	None	14	11.7	12.4	5	<b>0.030</b>
	Primary-incomplete	13	10.8			
	Primary-complete	13	10.8			
	Secondary-incomplete	22	18.3			
	Secondary-complete	23	19.2			
	Tertiary	35	29.2			
Occupation	Casualworker	14	11.7	8.100	5	0.151
	Formal employment	27	22.5			
	Housewife	10	8.3			
	Other	22	18.3			
	Peasant farmer	30	30.0			
	Self-employed	17	14.2			

Religion	Catholic	35	29.2	139.6674	4	<0.001
	Muslim	8	6.7			
	Protestant	77	64.2			
Monthlyincome (KES)	5,000	71	59.2	47.450	2	<0.001
	5,000-9,999	18	15.0			
	>10,000	31	25.8			

**Table 1:** Study patient socio-demographic characteristics (N=120).

Cervical cancer (16%; n=19) and breast cancer (15%; n=18) among females and prostate cancer among males (10%; n=12) were the most common among  $\geq 25$  years, while leukemia was observed only among  $< 25$  years ( $p < 0.001$ ). At least 31% of the patients were diagnosed 1-3 months after of the onset of symptoms and 24%; (n=29) were diagnosed 4-6 months ( $p < 0.001$ ) (Table 2).

Variable / Characteristics		N	%	X <sup>2</sup>	df	p-value
Cancer Type	Breast	18	15.0	144.00	21	0.001
	Cervical	19	15.8			
	Endometric	5	4.2			
	Leukemia	8	6.7			
	Lung	7	5.8			
	Oesophagus	10	8.3			
	Ovarian	7	5.8			
	Prostate	12	10.0			
	Others	21	17.5			
Time since diagnoses	1-3	37	31	21.500	4	0.001
	4-6	29	24			
	7-9	19	16			
	12	21	18			
	>12	14	12			
Type of cancer treatment	Chemotherapy	30	25	34.832	3	0.001
	Radiotherapy	17	14			
	Surgery	20	17			
	Combinetherapy	53	44			
Duration of Time from Last Treatment	<1	85	70.8	119.382	3	0.001
	1-3	25	20.8			
	4-6	6	5.0			
	7-9	4	3.3			
Palliative Care Services	Other symptom management	16	13.3	28.333	3	0.001
	Pain relief	52	43.3			
	Psychosocialcounselling	41	34.2			
	Spiritual care	11	9.2			

Duration of Palliative Care	<1	72	60.0	118.917	4	<b>0.001</b>
	1-3	34	28.3			
	4-6	7	5.8			
	7-9	1	0.8			
	12	6	5.0			

**Table 2:** Study patient clinical characteristics (N=120).

A statistically significant association ( $P < 0.05$ ) was identified between type of cancer, the time since diagnoses time since diagnoses, the duration of time from the last cancer treatment the type of cancer treatment the patient was undergoing and mean total QOL scores (Table 3). Individuals with prostate cancer, diagnosed within 1-3 months of onset of symptoms, more than 4 months of treatment since diagnosis, surgical treatment and any duration of palliative cancer care were associated with higher total QOL. However, interclass variations were wide.

Variables	SY Mean (SD)	F Mean (SD)	IP Mean (SD)	WB Mean (SD)	T Mean (SD)	Total QOL Mean (SD)
<b>Type of cancer</b>						
Breast	4.7(6.7)	6.8(6.4)	3.1(15)	3(12)	5.3(11)	17(4.6)
Cervical	8.3(14)	3.2(14)	11(12)	11(5.3)	17(8.6)	20(3.3)
Prostate	9.6(13)	9(9.1)	7(15)	10(8.8)	10(10)	21(4.5)
Oesophagus	6.2(11)	2.3(12)	2.7(14)	5.6(11)	0.98(8.7)	14(3.2)
Leukemia	-10(0)	-2.5(0)	-3(0)	-20(0)	-20(0)	9.1(0)
<b>P value</b>	<b>0.001</b>	0.864	<b>0.024</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>
<b>Time since diagnoses</b>						
1-3 months	14(8.3)	5.2(13)	8.6(13)	3.7(15)	8.9(150)	20(4.8)
4-6 months	8.3(15)	4.7(11)	0.9(9.6)	-4.3(13)	6.0(11)	16(3.7)
7-9 month	7.7(10)	12(7.6)	9(12)	-3(16)	8.4(10)	18(3.9)
1 year	7(15)	-0.7(14)	0.9(12)	-9(5.4)	4(6.7)	15(2.3)
>1 year	6(14)	6.1(7.7)	8.5(15)	-2.8(19)	1.5(19)	17(5.5)
<b>P value</b>	<b>0.002</b>	0.388	<b>0.004</b>	0.332	0.089	<b>0.027</b>
<b>Type of cancer treatment</b>						
Chemotherapy	6.0(13)	-0.37(14)	7.1(11)	-4.5(13)	5.4(9.9)	17(4.3)
Surgery	14(11)	7.8(8.30)	4.8(14)	-4.2(15)	3.9(12)	21(4.5)
Radiotherapy	4.1(11)	10(7.9)	-0.9(8.5)	-10(14)	1.5(13)	16(3.9)
Combainedtherapy	10(7.8)	6.8(10)	13(14)	9.1(13)	17(7.3)	14(2.3)
<b>P value</b>	<b>0.004</b>	<b>0.012</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>
<b>Duration of time from last treatment</b>						
< a month	5.1(8.5)	-0.5(12)	5.4(12)	-0.8(15)	7.1(14)	10(3.8)
1-3	4.8(13)	5.3(11)	4.8(13)	-6.1(15)	4.3(15)	13(6)

4-6	7.0(13)	9.4(19)	4.2(12)	-4.2(15)	8(12)	18(4.4)
1 year	12(4.4)	10(16)	15(8.1)	-4.4(6.3)	14(5)	19(0.72)
<b>P value</b>	<b>0.003</b>	<b>0.001</b>	0.284	0.316	0.586	<b>0.002</b>
<b>Duration of palliative care</b>						
< a month	6.6(13)	7.8(12)	2.8(13)	-3.6(16)	4.8(14)	18(5.0)
1-3	12(12)	2.8(10)	9(13)	-3.9(14)	6(10)	18(4.4)
4-6	12(10.1)	9.0(6.7)	6.0(10)	1(16)	12(13)	20(3.5)
1 year	9(0)	-13(0)	20(0)	-3.7(0)	16(0)	19(0)
<b>P value</b>	<b>0.002</b>	0.204	<b>0.001</b>	0.108	0.763	0.418
Sy: Symptom; F: Function; IP: Interpersonal; WB: Wellbeing; T: Transcendent; SD: Standard Deviation						

**Table 3:** Association between clinical characteristics and QOL scores.

Of the palliative care methods, pain relief and other symptom were significantly associated ( $P < 0.05$ ) with higher mean total QOL scores (Table 4).

Variables	SY Mean (SD)	F Mean(SD)	IP Mean(SD)	WB Mean (SD)	T Mean (SD)	Total QOL Mean (SD)
<b>Pain relief</b>						
Yes	7.6(13)	5.6(11)	4.4(13)	-4.8(15)	7(13)	18(4.2)
No	16(7.1)	7.0(3.4)	14(7.2)	4.9(17)	8.1(16)	21(4.1)
<b>P value</b>	<b>0.004</b>	0.77	<b>0.008</b>	0.08	0.81	<b>0.01</b>
<b>Psychosocial</b>						
Yes	7.5(15)	7.2(12)	5.5(11)	-2.5(15)	4.2(14)	18(9)
No	10(10)	4.6(12)	7(14)	-4.4(14)	7.9(14)	18(3.5)
<b>P value</b>	0.40	0.34	0.56	0.79	0.15	0.77
<b>Spiritual care</b>						
Yes	5.4(10)	9(7.6)	0.6(10)	-7.7(17)	4.8(20)	17(6)
No	9(12)	6(12)	6.5(13)	-3.1(15)	7.19(11)	18(4)
<b>P value</b>	0.17	0.13	0.08	0.19	0.49	0.31
<b>Othersymptoms</b>						
Yes	10(9.8)	5.4(13)	11(13)	-2.1(15)	9.0(12)	19(4.3)
No	8(15)	8(10)	-0.6(10)	-4.1(13)	4.2(13)	17(5)
<b>P value</b>	0.33	0.23	<b>0.001</b>	0.54	<b>0.003</b>	<b>0.004</b>
Sy: Symptom; F: Function; IP: Interpersonal; WB: Wellbeing; T: Transcendent; SD: Standard Deviation						

**Table 4:** Association between palliative care services and QOL Scores.

## Discussion

Findings revealed a significant association between types of cancer, the time since diagnosis, duration from last treatment and type of cancer treatment the patient was receiving with quality of life score.

Patients who had suffered from prostate and cervical cancers had physical, social, psychological and total QOL scores than those with Oesophagus and leukemia. This is similar to findings by Taylor, et al. who reported that patients diagnosed with cervical and prostate cancers had higher functional, psychological and social wellbeing than those with cancer Oesophagus and leukemia, which are often diagnosed late, are more aggressive and debilitating [11]. Cervical and prostate cancers are known to affect older people who tend to have good support system [12]. On the contrary Goker, et al. reported lower physical, psychological, social total QOL score among cervical cancer patients [5]. The implication of this finding is that type of cancer may impact on QOL for cancer patients in different ways. Hence, it is important for health care workers to consider this aspect in targeting and administering treatment and other management modalities to individual patients for optimal outcomes.

Patients on surgical treatment had higher quality of life, followed by chemotherapy and the least was radiotherapy. This may be associated with the additional adverse side effects of radiotherapy and chemotherapy compared with surgery which may be debunking the tumor reduces its impact. Goker, et al. reported that patients who underwent surgery had higher physical, social role function scores [5]. In contrast, findings in China have shown that patients treated with chemotherapy had lower QOL than those treated with surgery [8] due to accordingly, patients treated with surgery or chemotherapy alone returned to relatively normal functioning as opposed to those treated with radiotherapy that were more likely to complain about urinary, sexual and gynecological symptoms [13]. The implication of this finding is that palliative care team should try to disseminate appropriate information tailored to the patients and family context considering cancer and its treatment effect.

Duration of time from last treatment had significant association with health related quality of life. However, Ogoncho et al. findings from a hospital based study of gynecological conditions indicated that duration of time from the last cancer treatment had no significant association with quality of life [14].

Patients who had adequate pain control experienced better quality of life. Pain is one of the most physically distressing symptoms among cancer patients and easily amenable to strong pain relievers. Selman, et al. and Ahmedzai indicated that cancer pain influences physical, psycho-logical, and spiritual aspects of patients hence pain relief plays a significant role in overall QOL.

Patients may also benefit from an intervention that enhances the use of suitable pain coping techniques and other strategies to improved QOL. Interventions that address the multidimensional aspect of pain by relieving the patient's physical burden, psychological disturbance, and emotional distress are more likely to lead to long-term benefits. Our findings also have implications for treatment by providing an explicit rationale for targeting comprehensive cancer palliative care, while considering individual level and clinical characteristics [15,16].

## Conclusion

The type of cancer, period since diagnoses, duration from last treatment, duration of time after treatment and type of cancer treatment were the clinical characteristics identified in this study that affected QOL among cancer patients at Kisii teaching and referral hospital. Cancer patients who were undergoing combination therapy and had long duration of illness were vulnerable to poorer QOL scores. Adequate attention should be given to individual level clinical variations to enable personalized palliative care plans instead of taking a more global approach.

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