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Assessment of Quality of Life Among Cancer Patients in A Tertiary Care Hospital at Kakinada, Andhra Pradesh

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Abstract

Introduction: Cancer is the second most common cause of deaths worldwide. In India, it is a major health problem and the disease burden is escalating every year. The Quality of life (QOL) can be attributed to the symptoms associated with cancer which impacts their overall well-being. Improvement in QOL is the need of the hour to strengthen and support cancer patients.

Objectives

- To assess the QOL among the cancer patients.
- To find the association between the QOL of cancer patients with their socio-demographic and disease related variables.

Methodology: A cross sectional, analytical study was conducted among 100 cancer patients selected by purposive sampling technique in a tertiary care hospital during January to March 2024. Data was collected by using Validated structured questionnaire which is a 41 item questionnaire with general, physical, psychological, cognitive, emotional well-being domains which was given an overall QOL score (min 41 & max176) with a Likert scale scoring. Prior approval from Institutional Ethics Committee was obtained. Data was analysed using SPSS software version 21.

Results: Among the study subjects, 30% were males and 70% were females, 26% belonged to 51-60yrs of age group, 38% of them were in stage III and currently receiving chemotherapy radiotherapy. The mean QOL score was 110.23 ± 10.02. Association between QOL score and demographic and disease related variables has showed that age, gender and stage of cancer are statistically significant with p values (0.005,0.03, 0.035) respectively.

Conclusion: The mean QOL score was found to be very low which the key areas to address are in the present scenario.

Keywords: Quality of life, Cancer, Tertiary care hospital.

Introduction

Cancer is the second most common cause of deaths worldwide and it is the major cause of disability.1 In India, it is a major health problem and the disease burden

is escalating every year. As per GLOBOCON 2020 (Global Cancer Observatory) the cancer report showed that 19.2 million new patients were diagnosed with cancer and 9.9 million deaths2 were due to cancer worldwide. The report also states that 1.3 million new cases and 0.8 million deaths were due to cancer and the five most common cancers among both the genders were breast (13.5%), lip and oral cavity (10.3%), cervix uteri (9.4%), lung (5.5%), and colorectal (4.9%) cancers in India.3 Cancers vary in their impact on physical and emotional well-being. Highly symptomatic or aggressive cancers may have a greater negative effect on quality of life than slower-growing or less symptomatic ones, especially with prolonged treatment. Living with cancer long-term can cause psychological distress, anxiety, and depression. The stage of cancer at diagnosis affects treatment options, prognosis, and quality of life, with advanced stages often necessitating aggressive treatments and leading to more significant challenges.4 Chemotherapy and radiotherapy induce side effects like nausea, fatigue, and hair loss. Combination therapy, common in cancer treatment, may enhance effectiveness but heighten side effects, impacting quality of life. The impact of these disease-related variables on quality of life is complex and varies from patient to patient.5 It's important for healthcare providers to assess and address the physical, psychological, and social needs of cancer patients throughout their treatment journey to optimize their quality of life. Hence this study was taken up to assess the quality of life among cancer patients and to find the association between quality of life of cancer patients with their socio-demographic and disease related variables.

Methodology

A Cross-sectional analytical study was conducted on 100 patients suffering from various cancers attending and admitted to a tertiary care hospital located in Kakinada, Andhra Pradesh. The participants were briefed about the purpose of the study and obtained written informed consent. The patients with cancer of age 18 and above were included, who were critically ill and unable to respond were excluded. Sample size was calculated using n=4pq/l2 formula, where prevalence of QOL was taken as 19% from a study conducted by Khanum RS et al6 (2021) and absolute error of 8%.The sample size was calculated to be 96, and was rounded off to 100 and patients were selected by using convenient sampling technique. The study was conducted from January 2024 to March 2024. The Quality of Life (QOL) questionnaire, designed and validated by Vidhubala et al. (2011)7, is a reliable tool to assess the QOL of cancer patients in India. The questionnaire consists of 41 items that are scored in direct and reverse directions to yield a global QOL score. The items are categorized into 11 factors, which are psychological well-being (8 items), general well-being (5 items), physical well-being (10 items) , familial relationship (4 items) , sexual and personal ability (2 items) , cognitive well-being (3 items) , optimism and belief (2 items) , economic well-being (3 items) , informational support (2 items) ,patient-physician relationship (1 item), and body image (1 item) . 39 of the 41 items are rated on a Likert 4-point scale, ranging from “not at all” (1) to “very much” (4), while the remaining two items are rated on a 10-point semantic scale. For item 40 (on overall physical condition) and 41 (an overall QOL), the response option ranged from “very poor” (1) to “excellent” (10) and the period was 2 weeks prior to the interview. The total score of the whole tool ranges from minimum 41 to maximum 176. The quality of life score is divided into different categories of scores: very low (< 99), low (99 - 117), average (118 - 146), high (147- 165), and very high (>165) respectively and

questions relating to socio-demographic and disease-related variables like type of cancer, duration of illness and treatment, stage of cancer, and type of treatment received currently, in addition to the 41-item questionnaire. Questionnaire was translated into the local language and used after the approval of Institutional Ethics Committee and the head of the department of radiation oncology and head of the institution, the Superintendent. Data entered in MS Excel, and the results were analyzed using SPSS software version 21.0 and interpreted using percentages, means, standard deviation for descriptive variables and inferential statistics like chi square and one-way anova were used. P value of less than 0.05 was considered statistically significant.

Results

In this study, 100 patients suffering from cancer aged 21 to more than 60 years were participated. Table 1 indicates the demographic characteristics of the participants. Majority were in the age 41-50 years (35%), 62% were illiterates, 45% were home makers and 50% belong to middle income group.

Table 1 : Distribution of Study Subjects based on Socio Demographic data (n=100)

CATEGORY	VARIABLE	n (%)
Age (in years)	21-30	3
	31-40	7
	41-50	35
	51-60	26
	>60	29
Gender	Males	30
	Females	70
Educational Status	Illiterate	62
	Primary School	24
	High School	14
Income/month in rupees	<5000	38
	5000 - 10000	50
	>10000	12
Occupation	Daily labourer	35
	Farmer	10
	Homemaker	45
	Others	10

Figure 1: Distribution of Study Subjects based on the Disease related Variables (n= 100)

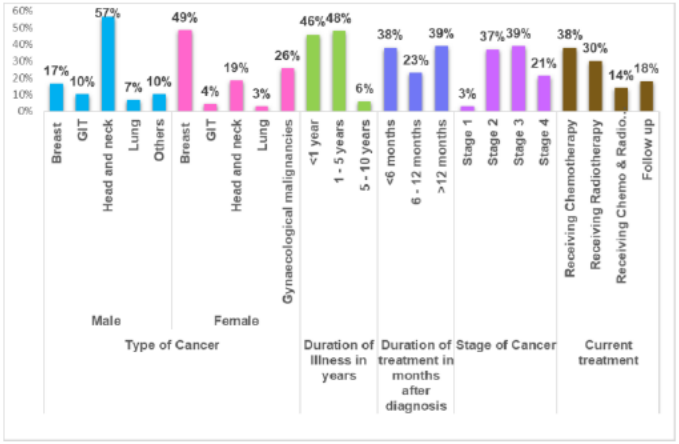

Fig 1 shows the type of cancers in relation to gender, duration of illness, duration of treatment, stage of cancer and the current treatment. Head and neck cancers were in predominance among males (57%) whereas breast cancer was 49% among females. The second leading cause was breast among males (17%) and gynaecological malignancies took second place among females with 26%. Participants reported to suffer from illness beyond five years were 6%, for less than a year were 46% and those between one to five years were 48% in the study. It was found that 37%, 39% and 21% of the participants were having the disease at stage 2, stage 3 and stage 4 respectively. Very few reported to the hospital early and diagnosed to have stage 1 (3%). Current treatment received by the participants is chemotherapy (38%), radiotherapy (30%) and a combination of chemotherapy and radiotherapy (14%). The participants were continuing treatment for a period less than 6 months (38%), 6-12 months (23%) and beyond 12 months was 39%. having the disease at stage 2, stage 3 and stage 4 respectively. Very few reported to the hospital early and diagnosed to have stage 1 (3%). Current treatment received by the participants is chemotherapy (38%), radiotherapy (30%) and a combination of chemotherapy and radiotherapy (14%). The participants were

continuing treatment for a period less than 6 months (38%), 6-12 months (23%) and beyond 12 months was 39%.

TABLE 2:Distribution of Study Subjects based on the individual domain specific Mean Scores of Quality of Life among Cancer patients (N=100)			
DOMAIN	MIN SCORE	MAX SCORE	MEAN ± SD
General well being	5	32	17.75 ± 3.02
Physical well being	10	40	25.84 ± 4.47
Psychological well being	8	32	18.93 ± 4.21
Familial relationship	4	16	12.03 ± 2.09
Sexual & Personal ability	2	8	5.71 ± 1.04
Cognitive well being	3	12	4.56 ± 1.79
Economic well being	3	12	7.42 ± 1.56
Optisim & belief	2	8	5.25 ± 1.65
Informational support	2	8	6.28 ± 0.83
Patient – physician relationship	1	4	4.0 ± 0
Body image	1	4	2.46 ± 0.84
Over all QOL domain score	41	176	110.23 ± 10.02

Table 2: Domain specific mean scores of quality of life among cancer patients was shown in this table. The overall QOL domain score ranged from a minimum of 41 to a maximum of 176 with a mean of 110.23 ± 10.02. The domains included general, physical and psychological well-being, familial relationship, sexual and personal ability, Cognitive well-being, economic well-being, optimism and belief, informational support, patient – physician relationship and body imaging.

Figure 2: Distribution of Study Subjects based on Quality of life Score (n=100)

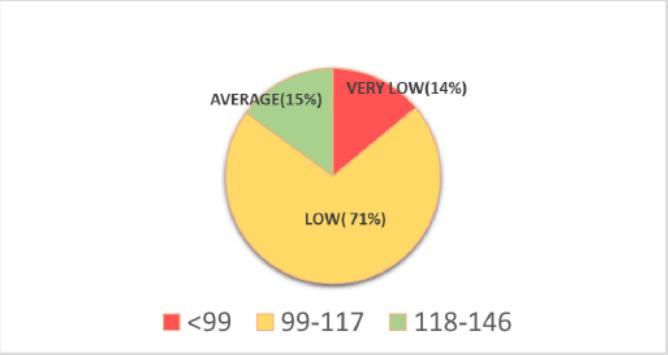

Fig 2: QOL of cancer patients was found to be low and very low among 85%, whereas an average QOL score was seen among 15%.

Table 3 & 4 shows the QOL and its relation to the socio-demographic characteristics and disease related variables of the patients suffering from cancer.

Predictors of Quality of Life

In the present study, female gender had a significant QOL score when compared with males ($\chi 2$= 6.64, p = 0.03). QOL was associated with higher age (F=2.085, p =0.005) and advanced stage of cancer (F=1.688, p = 0.03).

Discussion

The current study from a tertiary hospital found that 35% of the cancer patients attending the radiation oncology department for different types of cancers were in the age group 41 – 50 years, 29% belong to >60years of age. Most of them were illiterate (62%) and 70% were females. In a

TABLE 3:Association of QOL score with Socio-demographic (n=100)					
Variables	Category	Frequency n (%)	QOL score (mean ±SD)	F	P
Age	21-30	3	116.33± 10.73	2.085	**0.005**
	31-40	7	114.28±11.02		
	41-50	35	112.57±10.12		
	51-60	26	108.11±10.07		
	>60	29	107.68±10.05		
Marital Status	Married	67	110.50±10.07	0.994	0.49
	Widower	32	110.43±10.16		
	Divorced	1	85		
Income / month in rupees	<5000	38	109.84±10.07	1.031	0.44
	5000 - 10000	50	111.7±10.12		
	>10000	12	105.33±10.37		
Occupation	Daily labourer	35	108.54±10.08	1.524	0.07
	Farmer	10	104.9±10.39		
	Homemaker	45	113.75±10.02		
	Others	10	105.6±11.88		

Table 4:

TABLE 4:Association of QOL score with Disease related variables (n=100)					
Variables	**Category**	**Frequency n (%)**	**QOL score (mean ±SD)**	**F**	**P**
Type of cancer Male	Breast	5	112.4±7.30	1.210	0.25
	GIT	3	102.66±8.06		
	Head and Neck	17	103.58±10.05		
	Lung	2	96±10.53		
	Others	3	119.66±9.26		
Type of cancer Female	Breast	34	112.82±10.21	1.210	0.25
	GIT	3	101.33±11.40		
	Head and Neck	13	105.61±10.13		
	Lung	2	112.5±12.06		
	Gynaecological	18	116.83±10.28		
Duration of Illness in years	<1 year	46	109.69±10.08	0.888	0.64
	1 - 5 years	48	110.83±10.26		
	5 - 10 years	6	109.5±11.23		
Duration of treatment in months after diagnosis	<6 months	38	110.34±10.12	0.791	0.77
	6 - 12 months	23	106.47±10.27		
	>12 months	39	112.33±10.21		
Stage of Cancer	Stage 1	3	116.33±10.46	1.688	**0.03**
	Stage 2	37	113.37±10.07		
	Stage 3	39	110.69±10.01		
	Stage 4	21	102.92±10.31		
Current treatment	Receiving Chemotherapy	38	108.57±10.51	1.430	0.10
	Receiving Radiotherapy	30	107.7±10.08		
	Receiving Chemo + Radio therapy	14	109.85±10.58		
	Follow up	18	118.22±7.84		

study by Nayak MG et al1 30.2% of the participants belong to 51 – 60 years of age, 39.2% had education upto primary school and 57.2% were females whereas, in a study by Gandhi et al 66% of the participants were above 60 years age. Quality of Life (QOL) whereas the mean QOL score for the study population as per Kannan et al8 was 122.38 ± 13.8 with 80% scoring below average8. Gandhi et al9 reported a lower mean QOL score of 50.84 which is notably lower than the current study (mean QOL is 110.23) and male to female ratio was 83:17 in contrast to the current study the male to female ratio was 30:70. It shows that in the current study, quality of life was affected by age, gender, and stage of cancer predominantly where as Melio filho et al10 stated that common cancer symptoms during treatment like difficulty in swallowing, cough, weight loss significantly lowered the QOL in the study participants. In the current study, 60% of the study participants had stage 3 and stage 4 disease which is similar to the study conducted by Alwadi et al11 which shows around 58.7% of them had stage 3 and 4 disease. Anxiety, depression according to Buzgova et al12 and Smith et al13 affected all QOL dimensions. Wyatt et al14 reported lower QOL particularly in physical well-being among recurrent cancer patients compared to primary non-metastatic and metastatic groups14. In our study, statistically significant association was found with age(p=0.005), gender (p=0.03), and stage of cancer (p=0.035) and no significant association found with other demographic and disease related variables and the quality of life among patients where as in Ali Dehkordi et al15 study there was no association between socio demographic factors like age, gender and disease related variables like type of cancer (p= >0.05) with quality of life but has showed there is an association between QOL and chemotherapy cycles with (p<0.001). Azar Nematollahi et al16 study revealed that there is no significant relationship between quality of life and demographic and disease related variables but the study showed that there is significant relation between psychological domain and the chemotherapy cycles (p = 0.026) and the economic well being (P = 0.01). Jeseena Kanayamkandi et al17 study showed that married patients had significantly better QOL but no association with demographic variables and also reported that 20.2% had average QOL, 51.2% had below average QOL, 28.6% had poor QOL which is in contrast with the current study where none of the study participants had above average or high QOL,15% had average QOL, 71% had low QOL and 14% had very low QOL.

Conclusion

The overall mean score for Quality of Life was found to be low which was affected by age, gender and stage of cancer. Majority of the cases were diagnosed in stage 3, stage 4 and the quality of life has declined as stage of cancer progressed showing statistically significant association between the variables indicating the need to

emphasize on early detection and timely intervention to improve the quality of life among cancer patients.

Limitations of the study

The study findings cannot be generalised as the study was conducted only in a single tertiary care hospital for a limited time period.

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