Quality of Life among Cancer Patients

Malathi G Nayak, Anice George[1], MS Vidyasagar[2], Stanley Mathew[3], Sudhakar Nayak[4], Baby S Nayak[5], YN Shashidhara[6], Asha Kamath[7]

Departments of Community Health Nursing, [1]Head of the Institution, [5]Child Health Nursing and [6]Community Health Nursing, Manipal College of Nursing, Manipal University, Departments of [2]Radiotherapy and Oncology, [3]Surgery, [4]Biochemistry, and [7]Community Medicine, Kasturba Medical College Hospital, Manipal University, Manipal, Karnataka, India

Abstract

Introduction: Cancer is a leading cause of death. People living with cancer experience a variety of symptoms. Quality of life (QOL) is a major concern of patients with terminal cancer. Symptoms affect their QOL. Management of symptoms improves distress and QOL. **Objective:** The objective of the study was to assess the QOL among cancer patients. **Materials and Methods:** A survey was conducted among 768 cancer patients selected by a convenient sampling technique. Data was collected from cancer patients by interview technique using structured and validated interviewed schedule. **Results:** Out of 768 cancer patients, 30.2% patients were in the age group of 51–60 years, majority with head–and-neck cancer (40.1%), and 57.7% had stage III disease. QOL of majority of patients was influenced by their symptoms. 82.3% of them had low QOL scores. **Conclusion:** Cancer patients experienced many symptoms that affected their QOL. There is a need to develop interventions for effective management of symptoms that will empower the patients to have a greater sense of control over their illness and treatment and to improve the QOL.

Keywords: Cancer patients, quality of life, symptoms

INTRODUCTION

Cancer is the main health issue in the community across the world. Globally, cancer is one of the most common causes for morbidity and mortality. The results from GLOBOCAN (2012) showed that 14.1 million new patients were diagnosed with cancer and 8.2 million deaths were due to cancer. This is projected to rise by at least 70% by 2030.[1] As per the Indian Council of Medical Research report published in May 2016, the expected new cancer cases in India is around 14.5 lakh, and they also reported that the figure is likely to reach 17.3 lakh in 2020. About 7.36 lakh people are expected to have deaths due to cancer in 2016; the report also revealed that only 12.5% of patients come for treatment to hospital in the early stage of cancer.[2] As per the GLOBOCAN 2012 cancer report[3] estimates in India, the five most common cancers among both the genders were breast (14.3%), cervix (12.1%), mouth (7.6%), lung (6.9%), and colorectal (6.3%) cancers. Death due to these five cancers are 302,124.[4] The cancer patients experience a variety of symptoms. Inadequate management of symptoms might hamper the performance of the daily activities of an individual. The treatment of symptoms will help relieve the suffering and improve the quality of life (QOL).[5] The symptoms have a major impact on QOL among the patients with breast cancers. Greater symptom load has been associated with the higher levels of emotional suffering and poor physical and societal functioning and global QOL.[6] Thus, effective management of symptoms can improve the QOL in breast cancer patients.[7]

Objectives of the study

Objectives of the study were to:

1. Assess the QOL among the cancer patients using QOL questionnaire
2. Find the association between the QOL of cancer patients' with their demographic and disease-related variables.

Hypothesis was tested at 0.05 level of significance.

H_1: There will be a significant association between QOL of cancer patients' with their demographic and disease-related variables such as age, education, income, type and stage of cancer, duration of illness, and duration of treatment.

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Address for correspondence: Dr. Malathi G Nayak,
Department of Community Health Nursing, Manipal College of Nursing,
Manipal University, Manipal, Karnataka, India.
E-mail: malathinayak@yahoo.co.in

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MATERIALS AND METHODS

An exploratory survey was done among 768 cancer patients who aged above 30 years and diagnosed to be in Stage III or IV of cancer of breast/cervix/head-and-neck/gastrointestinal tract/lung/colorectal cancer and had undergone radiotherapy or chemotherapy or surgery or combination of them in selected reputed cancer hospitals of Karnataka. Patients who were unable to perform activities and who had psychiatric problems were excluded from the study. Reputed cancer hospitals all over Karnataka were selected by purposive sampling, and convenient method was used to select the samples from the selected hospitals. Data were collected using the pretested structured interview technique after obtaining permission from the respective hospital administrators. Cancer patients those who have given their consent only were interviewed for the study (Methodology was explained in the article published in Indian J Palliat Care 2015;21:349-54).[8]

Ethical considerations

The objectives of the study were informed to the cancer patients, and informed consent was obtained. The study was approved by the institutional ethics committee. Administrative permission was obtained from the seven hospitals who granted permission for data collection.

Statistical analysis

The obtained data were coded, tabulated, and analyzed using the SPSS package version 16 (IBM Corporation) and were interpreted using descriptive and inferential statistics on the basis of objectives and hypotheses of the study.

RESULTS

Out of 768 patients, 232 (30.2%) were in the age group 51–60 years, 439 (57.2%) were females, and 301 (39.2%) of them had their education until primary school. Majority, i.e., 675 (87.9%), of them were Hindus, 726 (94.5%) were married, 747 (97.3%) belonged to nuclear families, 376 (49%) participants were homemakers, and the monthly income was between Rs. 2501 and 5000 for 394 (51.3%). Most of them, i.e., 308 (40.1%), were suffering from head-and-neck cancer and the type of treatment received was the combination of radiotherapy and chemotherapy for 254 (33.1%). Majority of the participants, i.e., 596 (77.6%), were suffering from the illness for <1 year. The duration of treatment was <6 months for most (76.2%) of them, 489 (63.7%) were aware of the treatment and prognosis, and 443 (57.7%) were suffering from Stage III of cancer and remaining 325 (42.3%) were in Stage IV (Demographic characteristics were depicted in the article published in Indian J Palliat Care 2015;21:349-54 in Tables 1-3).[8]

Quality of life among cancer patients

The researcher used the QOL questionnaire version II to assess the QOL of cancer patients-Indian scenario, designed and validated by Vidhubala, *et al*. (2011), with a reliability of Cronbach alpha 0.90 and split-half reliability 0.80 (using alpha coefficient and Guttman split-half reliability method). This QOL scale had 41 items with 11 factors, viz., 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

Table 1: Frequency and percentage distribution of quality of life of cancer patients in the areas of general and physical well-being (n=768)

Domains of QOL	Frequency (%)			
	Very much	Moderate	A little	Not at all
General well-being				
How do you rate your overall quality of life during the past week?	Median: 3 IQR: 2-4			
How would you rate your overall physical conditioning during the past week?	Median: 4 IQR: 3-4			
Do you feel you are physically performing less than what you want to do?	659 (85.8)	71 (9.2)	22 (2.9)	16 (2.1)
Do you feel confident about managing your financial needs at any situation?	30 (3.9)	1 (0.1)	6 (0.8)	731 (95.1)
Do you get the kind of support you need from your friends and relatives?	47 (6.1)	6 (0.8)	3 (.4)	712 (92.7)
Physical well-being				
Do you experience any pain at present?	560 (72.9)	94 (12.2)	89 (11.6)	25 (3.3)
Does your pain interfere in your day-to-day activity?	561 (73)	96 (12.5)	84 (10.9)	27 (3.5)
Is your appetite normal?	106 (13.8)	91 (11.8)	96 (12.5)	475 (61.8)
Do you have any problem in sleep?	551 (71.7)	128 (16.7)	73 (9.5)	16 (2.1)
Do you feel you need more rest?	563 (73.3)	29 (3.8)	52 (6.6)	125 (16.3)
Do you feel fatigued?	705 (91.8)	25 (3.3)	30 (3.9)	08 (1)
Are you able to move around (physical) as usual?	213 (27.7)	137 (17.8)	188 (24.5)	230 (29.9)
Do you have problems in passing urine?	15 (2)	4 (0.5)	3 (0.4)	746 (97.1)
Do you have problems in passing motion?	14 (1.8)	8 (1)	1 (0.1)	745 (97)
Are you satisfied with your working capacity?	21 (2.7)	54 (7)	36 (4.7)	657 (85.5)

IQR: Interquartile range, QOL: Quality of life

Table 2: Frequency and percentage distribution of the quality of life of cancer patients in the areas of psychological well-being and familial relationship (*n*=768)

Domains of QOL	Frequency (%)			
	Very much	Moderate	A little	Not at all
Psychological well-being				
Do you feel depressed?	418 (54.4)	94 (12.2)	80 (10.4)	176 (22.9)
Does your feeling of sadness or depression interfere with your everyday functioning?	367 (47.8)	134 (17.4)	107 (13.9)	160 (20.8)
Are you comfortable attending social functions as usual?	8 (1)	5 (0.7)	-	755 (98.3)
Do you feel that you have too much time, nothing important to do?	150 (19.5)	82 (10.7)	163 (21.1)	373 (48.6)
Do you have a fear of recurrence?	585 (76.2)	114 (14.8)	34 (4.4)	35 (4.6)
Do you have a fear of functional disability?	477 (62.1)	26 (3.4)	56 (7.3)	209 (27.2)
Do you have a fear of rejection and losing social status?	143 (18.6)	59 (7.7)	45 (5.9)	521 (67.8)
Do you feel very lonely or remote from other people?	123 (16)	56 (7.3)	4 (0.5)	585 (76.2)
Familial relationship				
How satisfied are you about your relationship with your family?	762 (99.2)	4 (0.5)	2 (0.3)	-
Do you feel free to share your problems with your family members?	748 (97.4)	8 (1)	5 (0.7)	7 (0.9)
Do you get the kind of support you need from your spouse and family members?	753 (98)	10 (1.3)	05 (0.7)	-
Are you confident that you are able to fulfill your family needs?	193 (25.1)	01 (0.1)	51 (6.6)	523 (68.1)

QOL: Quality of life

Table 3: Frequency and percentage distribution of the quality of life of cancer patients in the areas of sexual and personal ability, cognitive and economic well-being, optimism and belief, informational support, patient-physician relationship, and body image (*n*=768)

Domains of QOL	Frequency (%)			
	Very much	Moderate	A little	Not at all
Sexual and personal ability				
Are you satisfied with your present sex life?	72 (9.4)	-	4 (.5)	692 (90.1)
Do you need any assistance to do your day-to-day activities?	130 (16.9)	39 (5.1)	117 (15.2)	482 (62.8)
Cognitive well-being				
Do you have difficulty in remembering things?	17 (2.2)	3 (0.4)	5 (0.7)	743 (96.7)
How dependent are you on medication?	553 (72)	112 (14.6)	59 (7.7)	44 (5.7)
Economic well-being				
Do you feel that your physical condition has resulted in reduced economic status?	755 (98.3)	6 (0.8)	4 (0.5)	3 (0.4)
How important do you feel about yourself at present?	768 (100)	-	-	-
Are you satisfied with the responsibilities you have already fulfilled?	725 (94.4)	32 (4.2)	5 (0.7)	6 (0.8)
Optimism and belief				
To what extent do your personal beliefs/religious faith gives you the strength to face the difficulties?	768 (100)	-	-	-
Do you expect always good things to happen?	768 (100)	-	-	-
Informational support				
Are you able to get the required information from your doctors?	749 (97.5)	8 (1)	10 (1.3)	1 (0.1)
How much of information do you want about your disease/treatment?	766 (99.7)	2 (0.3)	-	-
Patient-physician relationship				
Do you feel your doctor is cooperative?	766 (99.7)	2 (0.3)	-	-
Body image				
Are you satisfied with the way your body looks?	3 (0.4)	28 (3.6)	79 (10.3)	658 (85.7)

QOL: Quality of life

body image (1 item). The items from the tool are scored direct and reverse direction to yield global QOL. Out of 41 items, 39 items were in Likert 4-point scale that rated on a response scale of "not at all" (1) to "very much" (4). The remaining two items were in 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 during the past 2 weeks. The total score of the whole tool consisted of a maximum score of 176 and a minimum score of 41. The author categorized the total score into five: Above 165 - very high QOL, 147–165 - high QOL, 118–146 - average QOL, 99–117 - low QOL, and below 99 - very low QOL. The higher score indicates better QOL among the cancer patients (Vidhubal *et al*., 2011).

Reliability of the tool

Since QOL tool was a standardized tool, it was translated into local (Kannada) language, and the reliability was obtained by administering to twenty samples. The reliability was established using Cronbach's alpha coefficient formula. The reliability coefficient of the tool was $r = 0.84$.

Description of quality of life

The data related to the QOL of 768 cancer patients are presented in frequency and percentage. The different domains of QOL such as general well-being, physical well-being, psychological well-being, familial relationship, sexual and personal ability, optimism and belief, economic well-being, informational support, patient-and-physician relationship, and body image are presented in Tables 1-3. The items of the QOL questionnaire under each domain are given as it is in these tables. The QOL score categories are given in Table 4, and to assess the most affected domains, the frequency and percentage categories of each domain are also presented in Table 5.

In the domain of general well-being, the first two items were scored with the rating of 1 to 10. Hence, for these items, median and interquartile range (IQR) were computed. The overall QOL of the cancer patients during the past week was poor, i.e., the median score was 3 and the IQR was 2–4, and the overall physical condition of the cancer patients during that week was poor, i.e., the median score was 4 and the IQR was 3–4 from 1 to 10 rating scale. The data also show that the majority, i.e., 659 (85.8%), of the participants felt that they were physically performing very less, 731 (95.25%) of them were not at all confident about managing their financial needs at any situation, and 712 (92.7%) were not getting support from friends and relatives. Most of the participants' physical well-being was affected by pain for 560 (72.9%). The sleep problem was experienced by 551 (71.7%) and fatigue by 705 (91.8%). Most of the participants did not have problem in passing the urine (97.1%) and motion (97%) [Table 1].

From Table 2, it is seen that the participants' psychological well-being was affected by feeling very much depressed among 418 (54.4%) and the majority, i.e., 755 (98.3%), were not at all comfortable in attending the social functions. Most of them, i.e., 585 (76.2%), had a fear of recurrence and a fear of functional disability was found in 477 (62.1%) patients. With regard to the familial relationship, the majority, i.e., 762 (99.2%), of the participants were very much satisfied about their relationship with their family members/spouse, 748 (97.4%) of them were free to share their problems with their family members, and 753 (98%) were getting good support from the spouse and family.

The data in Table 3 show that the majority, i.e., 692 (90.1%), of the participants were not at all satisfied with their present sexual life. In relation to the cognitive well-being, 743 (96.7%) did not have any difficulty in remembering things and 553 (72%) were very much dependent on medication. All of them were optimistic and expecting good things to happen. The majority, i.e., 755 (98.3%), of the participants very much felt that income status was reduced due to their physical condition and 725 (94.4%) were very much satisfied with their fulfilled responsibilities. With regard to the informational support, the majority, i.e., 749 (97.5%), of the participants expressed that they had received adequate information and 766 (99.7%) of them had very good relationship with treating doctors. The majority, i.e., 658 (85.7%), of them were not at all satisfied with their body image.

Table 4 shows that among 768 cancer patients, 632 (82.3%) (300 + 332 = 632) were in the category of below average QOL score. Very few, i.e., 4 (0.5%), had high QOL score. The overall mean QOL score was 105 ± 12.93.

The frequency and percentage distribution of scores in the categories of the QOL domains are presented in Table 5. To find out the most affected domains, the scores were categorized into very high, high, average, low, and very low based on the percentage of categories given in the original QOL tool. Out of 768, the general well-being was very low for 738 (96.1%) participants. Out of them, 555 (72.3%) had very low physical well-being, 411 (53.5%) reported very low psychological well-being, and 511 (66.5%) reported an average familial relationship. The majority, i.e., 719 (93.6%), reported low economic well-being.

Association of quality of life with demographic and disease-related variables

The one-way ANOVA was computed to find the association between the mean score of QOL and the demographic characteristics – age, education, and income of the family – type of cancer, duration of illness, duration of treatment, and stage of cancer as there were more than three categories under each variable.

The data presented in Table 6 shows that the income was statistically associated ($F = 3.612$, $P = 0.006$) with the QOL. The *post hoc* multiple comparison shows that those who had their income above Rs. 15,000 had better QOL compared to those who had income < Rs. 2500/month (CI = 9.02, 0.332, $P = 0.025$). Thus, the QOL of patients improves with the income and is independent of the demographic variables – age and educational status – and their patients' type of cancer and duration of treatment. Hence, the null hypotheses are partially accepted, and the research hypothesis is partially rejected at 0.05 level of significance.

DISCUSSION

The present study result showed that 632 (82.3%) cancer patients were in the below average category of QOL score and the QOL of the cancer patients was influenced by reported symptoms. Very low-level QOL was observed in general well-being among 738 (96.1%), physical well-being in 555 (72.3%), and psychological well-being in 411 (53.5%) participants. Seven hundred and nineteen (93.6%) of them reported below average economic well-being. Most of the participants' physical well-being was affected by pain 560 (72.9%), sleep problem 551 (71.7%), and fatigue 705 (91.8%).

The psychological well-being was affected by feeling very much depressed among 418 (54.4%) of the participants, and 755 (98.3%) were not comfortable in attending the social functions. Most of them, i.e., 585 (76.2%), had a fear of recurrence, 755 (98.3%) of the participants felt that their income status was reduced due to physical condition/disease, and 658 (85.7%) of them were not satisfied with their body image. The present study findings are supported by Gandhi *et al*.,[9] who conducted a cohort study comprising 100 patients of advanced incurable head-and-neck cancer who were offered palliative radiation and suffered from many symptoms such as pain, insomnia, loss of appetite, and fatigue. These symptoms had affected the normal functioning of the patients miserably. Emotional functioning was affected in 50%, and physical functioning was affected in almost 23% of the remaining 50% of the population. The study conducted by Kannan *et al*. also found that the overall mean QOL score of the study population was 122.38 ± 13.86 and about 80% of the population had average

Table 4: Frequency and percentage of quality of life score categories (*n*=768)

Categories	Score	Frequency (%)	Mean±SD
Very low	Below 99	300 (39.1)	105.32±12.93
Low	99-117	332 (43.2)	
Average	118-146	132 (17.2)	
High	147-165	4 (0.5)	
Very high	Above 165	-	

SD: Standard deviation

Table 5: Frequency and percentage distribution of scores in the categories of the quality of life domains (*n*=768)

Domains	Total score	Frequency (%)				
		Very low (56.25%)	Low (66.47%)	Average (82.95%)	High (93.75%)	Above high (>93.75%)
General well-being	32	738 (96.1)	25 (3.3)	4 (0.5)	-	1 (0.1)
Physical well-being	40	555 (72.3)	121 (15.8)	83 (10.8)	7 (0.9)	2 (0.3)
Psychological well-being	32	411 (53.5)	123 (16)	147 (19.1)	84 (10.9)	3 (0.4)
Familial relationship	16	3 (0.4)	9 (1.2)	511 (66.5)	52 (6.8)	193 (25.1)
Cognitive well-being	12	209 (27.2)	149 (19.4)	329 (42.9)	81 (10.5)	-
Economic well-being	12	7 (0.9)	719 (93.6)	32 (4.2)	10 (1.3)	-

Table 6: Association of quality of life (mean±standard deviation and ANOVA) with demographic and disease-related variables (*n*=768)

Variables	Category	Frequency	QOL score (mean±SD)	*F*	*P*
Age (years)	30-40	125	105.21±13.53	0.173	0.915
	41-50	221	105.63±12.60		
	51-60	232	105.52±13.12		
	Above 60	190	104.78±12.75		
Educational status	Illiterate	257	104.54±12.83	0.810	0.542
	Primary	301	105.87±12.56		
	High school	127	106.11±13.43		
	Preuniversity	32	106.21±12.11		
	Graduate and above	51	103.45±14.80		
Income of the family per month in rupees	<5000	416	106.43±13.09	3.612	0.006*
	5001-10,000	198	103.96±11.52		
	Above 10,000	154	104.08±13.97		
Type of cancer	Head and neck	308	105.72±12.33	0.361	0.837
	Lung	50	105.42±13.42		
	Breast	136	104.72±13.33		
	GIT	141	105.83±13.49		
	Cervical	133	104.42±13.22		
Duration of illness (years)	<1	596	105.54±12.95	2.199	0.087
	1-5	145	103.56±11.55		
	6-10	25	110.28±18.16		
	>10	02	103.50±12.02		
Duration of treatment in months (after diagnosis)	<6	585	105.60±13.15	0.773	0.509
	6-<12	110	105.15±12.59		
	12 months and more	73	103.30±11.54		
Stage of cancer	Stage III	443	105.97±12.97	2.697	0.101
	Stage IV	325	104.42±12.83		

*Significant (P<0.05). GIT: Gastrointestinal tract, SD: Standard deviation, QOL: Quality of life and below average QOL; similar findings also were observed in the current study. The findings from other research studies also show that there was a significant reduction in the QOL due to common symptoms resulting from cancer.[10,11] The advanced breast cancer patients had lower QOL due to their changed body image.[12] Many authors reported that side effects of treatment affect the patient's QOL depending on the individual circumstances, the type of cancer, and its treatment.[13,14]

In the current study, the financial constraints are reported as the major issue among patients as well as family caregivers and that was the most common barrier to symptom management and has a bigger impact on QOL of both. Finding similar to this was reported in the studies by Alawadi and Ohaeri, 2009; Hopwood *et al*., 2007; Härtl *et al*., 2003; and Singh *et al*., 2014.[15-18] Anxiety/depression and other symptoms were found to affect all dimensions of QOL as reported by Bužgová *et al*., Castelli *et al*., Mystakidou *et al*., Little *et al*., Saevarsdottir *et al*. (2010), and Smith *et al*.[19-24]

Limitations of the study

- The study findings cannot be generalized to nationwide as the study was confined to a single state
- Cancer patients who gave consent only were interviewed
- Permitted hospitals were only selected for the study.

CONCLUSION

This study revealed that cancer patients experience many symptoms which affect their QOL. The management of cancer pain is a critical issue in the care of patients with cancer. All health professionals must ensure that patients receive timely and appropriate education and care. There is a need to develop measures for effective management of symptoms and to improve the QOL. The main issues are management of symptoms and need to use strategies that will empower the patients to have a better sense of control over their illness and treatment.

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Conflicts of interest

There are no conflicts of interest.

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