QUALITY OF LIFE FOLLOWING CANCER TREATMENT

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Abstract

This cross sectional study was carried out among 301 cancer patients attending Dhaka Medical College Hospital, Bangladesh in the Department of Radiotherapy to observe the quality of life following cancer treatment.A semi structured questionnaire was used to collect the data. The quality of life (QOL) in case of pain, ability to self care,able to play role activity in family & society can take part in family and leisure activities were improved. Whereas in case of loss of household asset the situation was worsen. The best scores improved in the different indicators before & after Radiotherapy such as: pain from 27.77% to 30.15%, ability to self care 75.39% to 84.12%, ability to play role activity in family & society 69.84% to 75.39%, can take part in family and leisure activities 74.60% to 79.36%. The Best scores for Chemotherapy: pain from 23.0% to 30.24% ability to self care from 61.97% to 77.46%, ability to play role activity in family & society 63.38% to 74.64%, can take part in family and leisure activities 63.38% to 69.01% and the Best scores for both Radiotherapy & Chemotherapy were improved in the same way. However, the Best scores deteriorated in case of Radiotherapy were 84.61% to 89.42%, Chemotherapy 70.42 % to 42.25% and for both Radiotherapy & Chemotherapy 84.61% to 89.42% for loss of household asset. The quality of life (QOL) of the respondents improved following treatment but at the same time they lost their household asset. The Best scores for quality of life improved following Radiotherapy, Chemotherapy and combined therapy (Radiotherapy and Chemotherapy) which was significant. With relation to loss of household assets the best scores deteriorated in all the three groups of treatment which was also found significant.

Keywords: Life quality, cancer, treatment

Introduction

Cancer is the world's second biggest killer after cardiovascular disease; Cancer killed 7.6 million people in 2005, three quarters of whom were in low and middle income countries. By 2015, that number is expected to rise to 9 million and increase further to 11.5 million in 2030.Up to 40% of all cancer deaths can be avoided by reducing tobacco use, improving diets and physical activity, lowering alcohol consumption, eliminating workplace carcinogens and immunizing against Hepatitis B virus and the Human papilloma virus. Among females the most common cancer at the global levelis breast cancer. Cervix uteri cancer is the number one cause of cancer deaths in the South-East Asia region and the African region.[1]Incidence of Cancer increased in Bangladesh for last two-three decades. In the light of the statistics available from the World Health Organization, cancer incidence, prevalence and mortality can be estimated approximately as 2,00,000, 8,00,000 and 1,50,000 respectively for the 130 million people of Bangladesh. The new cancer cases in Bangladesh have been estimated at 167 per 1, 00, 000 population.[2]The economic impact of cancer treatment goes beyond the costs to health services. The resource allocation is not adequate for the treatment of the cancer patients. The different treatment modalities are required like surgery, chemotherapy,

and radiotherapy in combination or alone. The terminal care or palliative care costs are also high. The cost of the patient includes direct & indirect costs. Direct costs of cancer treatment include diagnosis cost, number of Physician's visit and total costs of Physicians visits, treatment costs which comprise surgery, radiotherapy, chemotherapy or combination of any. Other direct costs include cost of medicine, hospital staying cost & transport cost. Household expenditures includefood expenditure, non food expenditure including cost of education of the household members, house rents, opportunity costs. There are also numbers of changes in quality of life. The indirect costs of the Cancer patients include wage loss, unemployment, loss of household assets etc. The objective of the study was to observe the effect on quality of life of the cancer patients following treatment by using UW-QOL score. [3]

Materials and method

Cross sectional study design was conducted to observe the quality of life following treatment. The duration of the study was 1 yearlong from July, 2009- June, 2010. Data collection period was from September-February, 2009. The patients were included in the study who had matched the inclusion criteria attending during the time of data collection period in the Department Radiotherapy of Dhaka Medical College. Sampling technique was Random. Data collected by semi structured questionnaire. Face to face interview with semi structured questionnaire. Quality of life (QOL) was analyzed by modified UW-QOL which was developed by the researcher.

Uw-qol[3]

The University of Washington developed Quality of Life (UW-QOL) questionnaire & scoring system. This tool is popular for analysis of Head neck cancer. Here in this study this researcher developed the modified form of UW-QOL (version 4) scoring system which includes 5 point items, scores of 0, 25, 50, 75, and 100. The 5 items which were used in this study for scoring Quality of life both before and after different types of treatment taken by the respondents including radiotherapy, chemotherapy & both. The scoring system used in this study was as follow.

Table 1: List of scores used in UW-QOL

Items	Scores
Pain	0= much worse 25= somewhat worse 50= about the same 75= somewhat better 100= much better
Able to self care Able to play role activity in family Can take part in family and leisure activity	0= poor performance 25= somewhat poor 50= about the same 75= somewhat better 100= much better performance
Loss of house hold asset	0= maximum loss 25= less than maximum 50= about the same 75= somewhat less loss 100= no loss

Results:

Table 2: Mobility of Cancer patients who undergone treatment

Items	Radiotherapy	Chemotherapy	Combined
Pain	69.8	71.8	62.5
loss of house hold asset (%)	46.0	57.7	57.7
Unable to self care (%)	15.9	22.5	9.6
Unable to play role activity in family & society (%)	24.6	32.4	11.5
Unable to take part in family and leisure activities (%)	79.4	69.0	89.4

The Table 2 shows Mobility of different types of patients. Among radiotherapy respondents 84.1% had Able to self care, 75.4% had Able to play role activity in family & society and 79.4% Can take part in family and leisure activities, 46.0% had Loss any house hold asset & 51.6% had not.

Among chemotherapy respondents 77.5% had Able to self care & other 22.5% were unable to self care, 67.6% had Able to play role activity in family & society & 32.4% were unable to play role activity in family & society, 69.0% Can take part in family and leisure activities & 31.0% Cannot take part in family and leisure activities, 57.7% had Loss any house hold asset & 42.3% had not.

Among the respondents who had both radiotherapy & chemotherapy 90.4% had Able to self care & other 9.6% were unable to self care, 88.5% had Able to play role activity in family & society & 11.5% were unable to play role activity in family & society, 89.4% Can take part in family and leisure activities & 10.6% Cannot take part in family and leisure activities, 57.7% had Loss any house hold asset & 42.3% had not.

Table 3: QOL Before & after Radiotherapy of the respondents

UW-QOL		0	25	50	70	75	100	Mean	% Best Score
Pain	before			5	20	72	23	74.20	18.25**
	after				18	70	38	81.34	30.15**
Able to self care	before					34	95	95.63	75.39**
	after					20	106	96.03	84.12**
Able to play role activity in family & society	before			1	5	32	88	92.06	69.84
	after				3	28	95	93.73	75.39
Can take part in family and leisure activities	before			2	5	25	94	93.05	74.60
	after			1	7	19	100	94.96	79.36
Loss of house hold asset	before			5	20	21	80	88.09	63.49**
	after			10	24	27	65	89.96	51.58**

(**significant at 0.01 level)

Table 3 shows the quality of life change among the Participants who had Radiotherapy. Following Radiotherapy (RT) changes occur in Cancer pain among the patients. Before RT the mean score of pain were 74.20 & after RT it became 81.34. The best score of among the patients who had much better condition of pain (score 100) before RT were 18.25 % & after RT 30.15%.

Following RT changes occur in ability to self care among the patients. Before RT the mean score of pain were 95.63 & after RT it became 96.03. The best score among the patients who had much better performance (score 100) before RT were 75.39% & after RT 84.12%.

Following RT changes occur in Able to play role activity in family & society among the patients. Before RT the mean score of ability to play role activity in family & society were 92.06 & after RT it became 93.73. The best score among the patients who had much better performance (score 100) before RT were 69.84% & after RT 75.39%.

Following RT changes occur in participants to take part in family and leisure activities. Before RT the mean score of ability to take part in family and leisure activities

were 93.05 & after RT it became 94.96. The best score among the patients who had much better performance (score 100) before RT were 74.60% & after RT 79.36%.

Following RT there were varying amount of loss of house hold assets of the respondents. Before RT the mean score loss were 84.12 & after RT it became 89.96. The best score among the patients who had much better condition loss is not high (score 100) before & after RT were 63.49% and 51.58 % respectively. In paired t- test pain, able to self care and loss of household asset were found significant at 0.01 level

Table 4: QOL before & after Chemotherapy of the respondents

UW-QOL		0	25	50	70	75	100	Mean	% Best Score
Pain	before		2	9	11	32	17	75.63	23.94
	after			9	12	30	20	78.02	28.16
Able to self care	before			4	10	13	44	86.97	61.97*
	after				6	10	55	93.94	77.46*
Able to play role activity in family & society	before		1	2	5	18	45	89.08	63.38*
	after			1	5	12	53	92.25	74.64*
Can take part in family and leisure activities	before			3	8	15	45	89.22	63.38
	after				7	15	49	91.76	69.01
Loss of house hold asset	before		1	3	4	13	50	90.56	70.42**
	after	1	2	5	10	33	30	91.97	42.25**

(* significant at 0.05 level and **significant at 0.01 level)

Table 4 shows the quality of life change among the participants who had Chemotherapy. Following Chemotherapy changes occur in Cancer pain among the patients. Before Chemotherapy the mean score of pain were 75.63 & after Chemotherapy it became 78.02. The best score of among the patients who had much better condition of pain (score 100) before Chemotherapy were 23.94% & after Chemotherapy were 28.16%.

Following Chemotherapy changes occur in ability to self care among the patients. Before Chemotherapy the mean score of pain were 86.97& after Chemotherapy it became 93.94. The best score among the patients who had much better performance (score 100) before Chemotherapy were 61.97% & after Chemotherapy 77.46%.

Following Chemotherapy changes occur in Able to play role activity in family & society among the patients. Before Chemotherapy the mean score of ability to play role activity in family & society were 63.38& after Chemotherapy it became 74.64. The best score among the patients who had much better performance (score 100) before Chemotherapy were 63.38% & after Chemotherapy 74.64%.

Following Chemotherapy changes occur in participants to take part in family and leisure activities. Before Chemotherapy the mean score of ability to take part in family and leisure activities were 89.22 & after Chemotherapy it became 91.76. The best score among the patients who had much better performance (score 100) before Chemotherapy were 63.38% & after Chemotherapy 69.01%.

Following Chemotherapy there were varying amount of loss of house hold assets of the participants. Before Chemotherapy the mean score loss were 83.30& after Chemotherapy it became 91.97. The best score among the patients who had much better condition loss is not high (score 100) before & after Chemotherapy were 70.42% and 42.25% respectively. In paired t- test able to self care, able to play role activity were statistically significant at 0.05 level and loss of household asset were found significant at 0.01 level.

Table 5: QOL before & after the treatment combined therapy (Radiotherapy & Chemotherapy) of the respondents

UW-QOL		0	25	50	70	75	100	Mean	% Best Score
Pain	before		1	9	29	33	32	78.65	30.76*
	after				30	35	39	82.93	37.50*
Able to self care	before			5	4	5	90	95.24	86.53
	after				4	6	94	97.04	90.38
Able to play role activity in family & society	before			6	4	5	89	94.75	85.57
	after				6	6	92	96.82	88.76
Can take part in family and leisure activities	before			5	4	6	88	94.03	84.61*
	after				3	8	93	97.21	89.42*
Loss of house hold asset	before					24	60	88.46	57.89**
	after				24	36	44	84.42	42.30**

(* significant at 0.05 level and **significant at 0.01 level)

Table 5 shows the quality of life change among the Participants who had both Radiotherapy & Chemotherapy. Following both Radiotherapy & Chemotherapy change occurred in Cancer pain among the patients. Before both Radiotherapy & Chemotherapy the mean score of pain were 78.65 & after both Radiotherapy & Chemotherapy it became 82.93. The best score of among the patients who had much better condition of pain (score 100) before both Radiotherapy & Chemotherapy were 30.76 & after both Radiotherapy & Chemotherapy 37.50.

Following both Radiotherapy & Chemotherapy changes occur in ability to self care among the patients. Before both Radiotherapy & Chemotherapy the mean score of pain were 95.24& after both Radiotherapy & Chemotherapy it became 97.04. The best score among the patients who had much better performance (score 100) before both Radiotherapy & Chemotherapy were 86.53% & after both Radiotherapy &Chemotherapy 90.38%.

Following both Radiotherapy & Chemotherapy changes occur in Able to play role activity in family & society among the patients. Before both Radiotherapy & Chemotherapy the mean score of ability to play role activity in family & society were 94.75 & after both Radiotherapy & Chemotherapy it became 96.82. The best score among the patients who had much better performance (score 100) before both Radiotherapy & Chemotherapy were 85.57% & after both Radiotherapy & Chemotherapy 88.76%.

Following both Radiotherapy & Chemotherapy changes occur in participants to take part in family and leisure activities. Before both Radiotherapy & Chemotherapy the mean score of ability to take part in family and leisure activities were 94.03& after both Radiotherapy & Chemotherapy it became 97.21. The best score among the patients who had much better performance (score 100) before both Radiotherapy & Chemotherapy were 84.61% & after both Radiotherapy & Chemotherapy 89.42%.

Following both Radiotherapy & Chemotherapy the varying amount of loss of house hold asset of the participants. Before both Radiotherapy & Chemotherapy the mean score loss were 88.22& after both Radiotherapy & Chemotherapy it became 84.42. The best score among the patients who had much better condition loss was not high (score 100) before & after both Radiotherapy & Chemotherapy were 57.89 and 42.30% respectively. In paired t-test pain, can take part in family and leisure activity were statistically significant at .05 level and loss of household asset were found significant at 0.01 level.

Discussion

A total of 301 Cancer patients were randomly selected from the Department of Radiotherapy of Dhaka Medical College & interviewed. Out of them 160 were female & 141 were male. They were from different part of the country with different social status. There were major 11 types of Cancer among those patients.

Quality of life of the respondents

Among the respondents 38 had no pain in Radiotherapy, 20 had no pain in Chemotherapy & 39 had no pain who had taken both Radiotherapy & Chemotherapy.

Among radiotherapy respondents 84.1% had able to self care & other 15.9% were unable to self care, 75.4% had able to play role activity in family & society & 24.6% were unable to play role activity in family & society, 79.4% can take part in family and leisure activities & 20.6% cannot take part in family and leisure activities, 46.0% had loss any house hold asset & 51.6% had not.

Among chemotherapy respondents 77.5% had able to self care & other 22.5% were unable to self care, 67.6% had able to play role activity in family & society & 32.4% were unable to play role activity in family & society, 69.0% can take part in family and leisure activities & 31.0% cannot take part in family and leisure activities, 57.7% had loss any house hold asset & 42.3% had not.

Among the respondents who had both radiotherapy & chemotherapy 90.4% had able to self care & other 9.6% were unable to self care, 88.5% had able to play role activity in family & society & 11.5% were unable to play role activity in family & society, 89.4% can take part in family and leisure activities & 10.6% cannot take part in family and leisure activities, 57.7% had loss any house hold asset & 42.3% had not.

Indirect costs of radiotherapy participants were cost of lost assets were 29160.00 taka, earning wage losses were 33217.46 taka, The total amount of loans were 20214.29 taka. Indirect costs of chemotherapy participants were cost of lost asset were 69225.35 taka, earning wage losses were 78281.69 taka, The total amount of loans were 14028.17 taka.

In the current study five variables were used to measure the quality of life of the respondents. Those were Pain, ability to Self-care, ability to play role activity, ability to take part in family and leisure activities, loss of household assets.

The best score improved in every measuring tools. The best score of among the patients who had Radiotherapy improved from pain were from 18.25 % to 30.15%, ability to self care increased from 75.39% to 84.12%, ability to play role activity in family & society from 69.84% to 75.39%, ability to take part in family & leisure activities from 74.60% to 79.36%.

The best score of among the patients who had Chemotherapy improved from pain were from 23.94 % to 28.16 %, ability to self care increased from 61.97 % to 77.46 %, ability to play role activity in family & society from 63.38 % to 74.64 %, ability to take part in family & leisure activities from 63.38 % to 69.01 %.

The best score of among the patients who had both Radiotherapy & Chemotherapy improved from pain were from 30.76 % to 37.50 %, ability to self-care increased from 86.53 % to 90.38 %, ability to play role activity in family & society from 85.57 % to 88.76 %, ability to take part in family & leisure activities from 84.61 % to 89.42 %.

The best score of among the patients decreased in loss of household assets. In Radiotherapy changed from 63.49 % to 51.58 %, in Chemotherapy from 70.42 % to 42.25 %, in both Radiotherapy & Chemotherapy from 57.69 % to 42.30 %. These data represented that loss of household assets increased as the treatment progressed.

Health related QOL deteriorated as the 106 patients had metastasis & pain. Only 37 had no metastasis & pain. 12.29% had only had the best scores. Study in UK on Oral

&Oropharyngeal cancer where UW-QOL version 4 was used showed the deterioration of Quality of life after of the cancer patients following 1 year of surgery. The study carried out from 1995 to 2002 & there were baseline key differences in anxiety, pain, swallowing, chewing, and mood. At 1year there were big differences in all domains with deterioration in the oral cancer group. The difference was least notable in pain, mood and anxiety.[4] In other study in China 118 patients were divided in a partial-laryngectomy group (n=81; excluding cordectomy) and a total-laryngectomy group (n=37). The composite QOL scores of the partial-laryngectomy group (692.3±127.9) were higher than those of total-laryngectomy group (636.4±140.0), showing a statistically significant difference (P<0.05). The partial-laryngectomy group (74.3±23.8; 80.9±20.3) was better than the total-laryngectomy group (40.3±25.8; 69.6±27.1) in speech and appearance (P<0.001; P<0.05); but the total-laryngectomy group (92.6±13.0) was superior to the partial-laryngectomy group (83.0±20.5) in pain (P<0.01).[5]

Conclusion

The quality of life (QOL) of the respondents improved following treatment but at the same time they lost their household asset. The Best scores for quality of life improved following Radiotherapy, Chemotherapy and combined therapy (Radiotherapy and Chemotherapy) which was significant. With relation to loss of household assets the best scores deteriorated in all the three groups of treatment which was also found significant.

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