

Treatment Modalities and Quality of life of a Cancer Patients in Palliative Care at a Tertiary Care Hospital: A Cross-Sectional Study

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Abstract:

Background: Enhancing the quality of life (QoL) for cancer patients is crucial, especially when there are only marginal improvements in survival rates. The diagnosis itself can cause a great deal of stress and negatively impact a person's well-being in all aspects of their life. Patients often undergo multiple treatment modalities, which can further impair their QoL. However, there is still a lack of comprehensive understanding of these impacts. Therefore, the main goal of this study was to assess the QoL of cancer patients receiving different modes of treatments.

Methodology: We conducted a study using a quantitative, cross-sectional, and descriptive design. We enlisted 123 cancer patients aged 18 or above between November 2021 and March 2022. Patients who had received at least one cancer treatment modality and were seeking additional care at the hospital met the inclusion criteria. We excluded patients with chronic comorbidities that may affect their quality of life (QoL) and mentioned common ailments such as diabetes mellitus, hypertension, and coronary artery disease. We collected data by conducting interviews using a modified, structured scale created by the EORTC group. The scale was based on the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30). The medical records of the patients were used as the primary source of information to gather data about their medical condition and the treatment they received. Descriptive and inferential statistical analyses were conducted using SPSS version 16 to determine scores related to the Quality of Life (QoL) of the patients and identify contributing factors.

Result: The quality of life (QoL) of cancer patients is influenced by factors such as Eastern Co-operative Oncology Group (ECOG) performance status, time since diagnosis, cancer site, stage, and others. The average global health/QoL score was 85.54 out of 100, with functional aspects scoring 77.03 and symptom management scoring 16.14. Loss of appetite was the most common symptom (mean = 20.27), affecting nearly all patients. Additionally, several QoL scales, such as those measuring cognitive, emotional, physical, social, role-functioning, pain, fatigue, dyspnea, loss of appetite, nausea/vomiting, and financial concerns were significantly associated with the overall quality of life.

Conclusion: In general, cancer patients in Bangladesh reported a good quality of life, with higher ratings for cognitive, physical, social and emotional functioning. However, they reported lower ratings for social functioning. To improve the quality of life for specific categories of cancer patients, more research is needed. Nonetheless, the results of this study provide a fundamental understanding of the topic.

Keywords: Modalities, quality of live, cancer, palliative care.

I. Introduction:

Cancer is one of the leading causes of death worldwide, responsible for approximately 13% of all deaths in 2008. Out of the 7.6 million deaths caused by cancer, around 70% occurred in low- and middle-income countries. By 2030, the number of cancer-related deaths is expected to exceed 13.1 million globally [1]. America's cancer death toll is estimated to be close to 1,600 per day, according to the American Cancer Society. At roughly one in four deaths in the US, cancer is still the second most common cause of death after cardiovascular diseases. A new case of invasive cancer is expected to be diagnosed in the US in 2012, according to estimates from the American Cancer Society [2]. Despite the significant progress made in recent decades in early detection and cancer treatment, up to 40% of patients still die five years after being diagnosed [3]. When a patient is terminally ill, a variety of psychological and physical symptoms can have a detrimental effect on their quality of life (QoL) and present serious challenges for healthcare professionals [4-10].

The hospice movement has changed, over the past 20 years, cultural attitudes toward patients with terminal cancer as well as therapeutic and supportive approaches [11]. The goal of Palliative Care (PC) is to improve the quality of life for patients who are incurable and allow them to pass away in comfort by effectively relieving them of uncomfortable physical and psychological symptoms [12]. In addition to preparing patients and their families for any future events, palliative care also pays close attention to the individual needs of each patient and their families, offering support during times of grief. A group of physicians, nurses, and volunteers execute palliative care in conjunction with social workers, psychologists, and spiritual counselors [13–19].

In the last decade, various tertiary academic PC programs have set up acute in-patient palliative care units (PCUs). However, many PC programs still limit themselves to consultation and ambulatory care [20-25]. The acute PCU merges the concepts of acute medical care and hospice care [23, 24, 26, 27]. Patients admitted to these PCUs are generally expected to be discharged to their homes, long-term PCUs, or hospice care. They are usually admitted for acute and complex medical and psychosocial issues.

It can be helpful to evaluate the quality of life and the level of discomfort experienced by patients during the final weeks or days of their lives. This helps us to better understand their needs as well as their subjective well-being during this phase. Previous research has shown that the location where palliative care is provided (home, long-term PCU, or hospice) can have an impact on a patient's quality of life and the level of discomfort they experience [4, 28]. Additionally, factors about the patient, such as age, gender, duration since diagnosis, and marital status, can have a notable impact on quality of life and ratings of symptom burden [8, 29–33]. Research is required to determine the degree to which these factors affect QoL and symptom burden ratings across various PC settings, even though prior reports have shown that patient characteristics differ based on the PC setting [4, 28, 34, 35].

Regarding cancer therapy, one of the most significant patient-reported outcomes is quality of life (QoL). While follow-up measurements may reveal acceptance, adaptation, and unfavorable effects of disease and therapy, measurements of QoL at diagnosis may yield valuable information about patients' preferences and prognosis. QoL is a primary endpoint of many clinical trials and has been extensively studied in many diseases. Evaluating the quality of life of cancer patients is becoming a more significant issue in oncology. All stages of this disease are associated with the QoL specific to cancer. It is actually possible to evaluate the overall effect of a patient's health status on their quality of life using general QoL instruments for cancer patients of all kinds [36].

Evaluating the quality of life of cancer patients receiving treatment was the goal of this study. Additionally, we aimed to investigate the potential impact of various sociodemographic factors on the quality of life among cancer patients.

II. Methodology:

Study Location: Bangabandhu Sheikh Mujib Medical University (BSMMU) Bangladesh, chosen purposefully due to its status as the highest health facility and tertiary referral center.

Study Design: Descriptive cross-sectional study conducted from November 2021 and March 2022.

Participants: Cancer patients aged above 18, able to communicate in Bengali, conscious, and fit for interviews, who had received at least one type of cancer treatment modality.

Sampling: Purposive sampling of 123 eligible patients admitted into wards or attending outpatient departments.

Ethical Approval: The Hospital's Institutional Ethics Committee granted permission to conduct the study.

Data Collection: Structured and semi-structured questionnaire based on validated European Organization for Research and Treatment of Cancer Quality of Life (EORTC QLQ-C30) translated into Bangla.

Instrument Validation: Translation-back translation method used, pre-testing conducted on 10% of the sample to ensure understanding and cultural appropriateness.

Data Analysis: Collected data reviewed daily for accuracy, entered into SPSS version 16.0 for descriptive and inferential statistical analysis.

Quality of Life Measurement: EORTC QLQ-C30 questionnaire comprising 30 questions with functioning and symptoms scales, Likert scale format used for responses.

Scoring: Linear transformation applied to scores ranging from 0 to 100, higher scores indicating better functioning for functioning scales and more symptoms for symptoms scales.

Reliability and Validity: Validity established through consultation with oncology experts and pre-testing, ensuring relevance and clarity for Bangla-speaking cancer patients.

III. RESULTS

This study included patients who were over twenty years of age. On average, the patients' age was 52.7 years with an age range between 20 to 80 years. The study found that there were more female patients than male patients. Similarly, 90.6% of the study participants were married and living with their spouse. About 79.2% of patients lived in rural areas. 89% of respondents identified as Muslims. In terms of educational status, almost 60% of respondents lacked literacy. After categorizing the patients based on their occupations, it was found that most of them worked in agriculture. As far as family structure is concerned, the majority of the patients belonged to nuclear families. In terms of their financial situation, 42.9% of participants reported having enough funds to last for a year but nothing extra. On the other hand, 33.9% of the patients declared that their income was insufficient to support them for a year, even before their illness, while 23.3% of them had some savings before their illness, according to (Table 1)

Table 1: Overview of Respondent Demographics (n=123)

Variables	Frequency	Percent
Age		
20-30	9	6.9
31-40	12	10.2
41-50	31	25.3
51-60	40	32.7
61-70	19	15.5
>=71	12	9.4
Mean age \pm SD = 52.72		
Sex		
Male	57	46.1
Female	66	53.9
Marital status		
Married	111	90.6
Unmarried/Widow/ er/ Separation	12	9.4
Residence		
Rural	97	79.2
Urban	26	20.8
Religion		
Muslim	102	82.9
Hindu	14	11.8
Buddhist/Christian/ Others	7	5.3
Education		
Illiterate	73	59.6
Literate	50	40.4
Occupation		
Agriculture	71	58.4
Household activities (No specific wage earning job)	39	31.8

Service	6	4.9
Business	3	2.4
Labor/driver	3	2.4
Type of family		
Nuclear	70	56.7
Joint	47	38.8
Extended	6	4.5
Economic Status		
Enough to eat for one year	53	42.9
Not enough to eat for 1 year	41	33.9
Extra Saving	29	23.3

The majority of patients were diagnosed with breast cancer followed by cervical cancer. Gastrointestinal malignancy were the second most common group of diseases, while gynecological cancer was the most common. When the data was analyzed based on the duration of treatment, more than half of the patients (54.3%) had been receiving treatment for the last six months, while the remaining individuals had been receiving treatment for a longer period. A small number had even been receiving treatment for over a year (as shown in Table 2).

Table 2: Overview of Respondents' Disease Conditions (n=123)

Variables	Frequency	Percent
Site of Cancer		
Breast	22	17.6
Cervix	16	14.3
Ovary, endometrium, vulva	16	12.7
Lung	13	11.0
Oral cavity	11	9.0
Stomach	9	6.9
Colorectal	8	6.1
Pharynx, Larynx, Trachea	7	5.7
Leukemia	5	4.1
Gall bladder Ca	5	4.1
Others (osteosarcoma, lymphoma, ca prostate, ca testis, melanoma, liver, and urinary bladder)	11	8.5
Time since diagnosis		
< 6 month	67	54.3
6 month – 1 year	35	28.6
>1 year	21	17.1

The majority of individuals had previously undergone chemotherapy, and of those currently receiving treatment, the majority (66.7%) were receiving chemotherapy as a palliative, curative, or adjuvant measure. Comparably, with regard to the Eastern Co-operative Oncology Group (ECOG) performance status, over half of them, or 52.2%, had a score of 0 (indicating that they were functioning normally), followed by a score of 1 (indicating that they were limited in their ability to engage in physically demanding activities but were still ambulatory and capable of performing light or sedentary work) (Table 3).

Table 3: Overview of Respondents' Disease Conditions and Treatment Modalities (n=123)

Variables	Frequency	Percent
Stage of disease		
Stage I	6	4.5
Stage II	8	6.5
Stage III	11	9.0
Stage IV	19	15.5
Not mentioned	79	64.5
Distant metastasis		
Present	21	16.7

Absent	102	83.3
Past Treatment		
Chemotherapy	48	38.8
Surgery	35	28.6
Radiotherapy	22	18.4
Surgery and chemotherapy	8	6.5
Radiotherapy & chemotherapy	6	4.9
Surgery and radiotherapy	2	1.6
Surgery, radiotherapy and chemotherapy	2	1.2
Present Treatment		
Chemotherapy	82	66.9
Radiotherapy	24	19.2
Surgery	15	12.2
Palliative care	1	0.8
Concurrent Chemo -RT	1	0.8
ECOG status		
0 (active as a normal person)	64	52.2
1 (can carry out light work.)	42	34.3
2 (> 50%) (time spent up and about during daytime)	15	12.2
3 (50% - 75%)	2	1.2

In terms of cancer site, quality of life scores showed almost significant differences in function and symptom scores, but not in global health scales. Patients with stage II cancer had higher global health/QoL and function scores and lower symptom scores. These differences were statistically significant ($p < 0.0001$) for function, symptom, and global health scales. Global health/QoL scores were higher in patients without distant metastasis, followed by function scores, while symptom scales were lower in the same group. Distant metastasis significantly affected quality of life. Time since diagnosis also significantly impacted quality of life, with higher global health/QoL scores in all three time categories. The relationship between time since diagnosis and overall quality of life was particularly strong ($p < 0.0001$ for function and symptom scales; 0.015 for global health/QoL scale). Patients with better Eastern Co-operative Oncology Group (ECOG) performance status reported higher function and global health/QoL scores and fewer symptoms. The distinction between low and high ECOG performance status significantly related to overall quality of life (Table 4).

Table 4: Scores for Quality of Life by Site of Malignancy (n = 123)

Variables	Symptom Scales	Function Scales	Global Health/QOL
Stage of Cancer			
Stage I	33.33(11.12)	66.66(20.32)	83.33 (13.12)
Stage II	14.58 (11.41)	80.55(10.99)	87.50(16.38)
Stage III	26.22 (17.04)	70.80(14.60)	84.09 (12.30)
Stage IV	23.14(15.51)	65.43(19.52)	73.68 (25.07)
p-value	<0.0001*	<0.0001*	<0.0001*
Distant metastasis			
Present	21.45 (17.32)	69.59 (19.57)	79.06 (22.29)
Absent	15.08 (11.96)	78.52 (14.29)	86.84 (14.79)
p-value	0.005**	0.001*	0.006**
Site of malignancy			
Colorectum	15.38(15.41)	71.85(19.47)	85.55(15.57)
Breast	12.16(9.80)	81.49(10.49)	87.59(19.53)
Stomach	21.26(14.63)	68.23(20.89)	79.41(18.19)
Others (osteosarcoma, lymphoma, ca prostate, ca testes, melanoma, and ca urinary bladder)	14.17(10.92)	81.16(10.22)	85.52(14.12)
Leukemia	8.46(7.93)	87.55(12.04)	92.50(8.28)
Ca gall bladder	15.12(11.74)	82.00(10.80)	88.33(15.81)

Oral cavity	12.35(8.28)	83.13(11.26)	88.25(15.14)
Lung	22.69(16.07)	64.60(17.86)	78.08(17.00)
Pharynx, Larynx, Trachea,	17.39(12.48)	77.30(11.37)	83.92(22.28)
Ovary, endometrium/vulva	15.46(14.53)	78.11(15.73)	88.63(12.11)
Cervix	19.92(14.29)	76.00(15.73)	85.00(15.62)
p-value	0.013**	<0.001*	0.250
Time since Diagnosis			
Less than 6 months	15.19(12.67)	78.96(14.80)	85.71(18.10)
6 months to 1 year	13.66(11.92)	79.52(12.58)	88.80(12.75)
Above 1 year	23.32(14.61)	66.77(18.70)	79.56(15.31)
P-value	<0.0001*	<0.0001*	0.015**
Present ECOG status			
0 (active as a normal person)	10.71(8.46)	84.84(9.87)	91.99(11.61)
1 (can carry out light work.)	19.59(12.51)	72.24(13.76)	82.63(15.04)
2 (> 50%) (time spent up and about during daytime	26.58(17.99)	60.29(18.66)	68.33(21.03)
3 (50% - 75%)	47.00(6.45)	45.18(8.98)	63.88(25.45)
P-value	<0.0001*	<0.0001*	<0.0001*

The results presented in Table 5 show that patients who underwent surgery had the lowest symptom scores and the highest global health scores concerning their functional scales, regardless of whether they are therapy or radiation therapy. Although there was not much difference in the scores between the patients receiving the two therapies, the overall outcome was found to be statistically significant in terms of symptoms and the global health measure.

Table 5: Quality of Life Scores based on Past and Current Cancer Treatment modality (n = 123).

Variables	Symptom Scales	Function Scales†	Global Health/QoL
Present Treatment			
Chemotherapy	14.93(11.95)	77.80(14.79)	85.56(16.14)
Radiotherapy	20.78(15.96)	74.89(18.27)	85.10(18.21)
Surgery	14.18(13.13)	78.37(14.11)	88.33(13.05)
Palliative care	34.61(16.31)	44.44(12.57)	45.83(5.89)
Concurrent Chemo -RT	10.25(11.10)	71.11(13.46)	83.33(5.29)
P-value	0.027**	0.061	0.020**
Past Treatment			
Surgery	15.01(12.95)	80.06(13.92)	88.09(15.89)
Radiotherapy	17.32(12.41)	75.20(13.73)	82.77(18.24)
Chemotherapy	14.57(12.40)	77.84(15.55)	86.22(14.87)
Radiotherapy & chemo.	27.13(17.26)	66.48(21.13)	77.77(25.45)
Surgery & chemo.	17.62(15.26)	76.94(18.44)	88.02(11.77)
Surgery & radio.	19.87(14.71)	61.66(18.53)	75.00(20.41)
Surgery, radiotherapy & chemotherapy	17.94(11.75)	71.11(20.36)	77.77(19.24)
P-value	0.083	0.037**	0.208

IV. Discussion:

Quality of Life(QoL) is a major concern in cancer research and care. QoL includes various aspects of one's physical, emotional, mental, social, and behavioral well-being, which are all important for overall wellness. In recent years, several reliable QoL instruments have emerged for assessing health-related QoL. The EORTC QLQ-C30 is the most widely used tool for evaluating the quality of life in cancer patients. This methodology was used to evaluate the QoL of cancer patients receiving treatment in the current study. Several studies support our findings on how cancer treatment affects the quality of life among patients receiving cancer treatment. A cancer diagnosis and treatment often lead to various concerns and support needs, which can affect the patient's health-related quality of life (HRQoL). To measure HRQoL, standardized tools like the EORTC QLQ-C30 are typically used [37].

This study looked at the patient's quality of life across a range of sociodemographic factors. Three factors were found to have a statistically significant impact on quality of life: gender, family type, and economic status. There was a clear pattern that patients with greater savings demonstrated better overall health and function scores, while patients with medium or lower economic status demonstrated worse health and function scores along with higher symptom scores. Furthermore, patients who identified as Hindu and who lived in cities generally scored higher on several different components; however, these differences did not reach statistical significance, possibly as a result of different sample sizes. Consistent with our findings, Heydarnejad et al.'s study also found no significant relationship between age, education, marital status, income, and quality of life [38]. According to a study by Meyer et al., neither education level nor age at diagnosis affected quality of life ratings. The study's conclusions agreed with the one being conducted now. According to a study by Meyer et al., the quality of life scores of patients was not affected by their age at the time of diagnosis or educational background [39]. These findings are consistent with the current study. However, the study conducted by Maryam et al. found that the sex of the patients had a significant impact on their functional scale scores [40]. In addition, this study also found a significant relationship between the quality of life score and the sex of the patients. Female individuals exhibited a higher quality of life compared to males. Various studies have explored the connection between socio-demographic factors and the quality of life among cancer patients. Güner et al. investigated this relationship, focusing on gender, marital status, education level, occupation, and income among cancer patients in Turkey [41]. Their findings indicated that men, older individuals, widowed spouses, those with lower education levels, homemakers, and individuals with lower incomes tended to have lower quality of life scores. A study conducted in Shanghai, China found that the quality of life (QoL) of cancer patients significantly related to certain sociodemographic factors, such as family income, education, and occupation. However, age and marital status were found to have only a limited impact on QoL. In general, lower educational attainment, and low income, as well as those who experienced divorce or lost their spouse, are more likely to have poor quality of life outcomes. This information highlights the need for support and resources for patients with these sociodemographic characteristics to improve their QoL [42].

Similarly, in a study conducted in China involving lung cancer patients, better quality of life was observed among the younger, male, and married patient groups. Conversely, patients with lower education or income tended to have poorer quality of life [43]. Another study among newly diagnosed cancer patients in Norway found that those who were cohabitating had a notably higher quality of life compared to those living alone. However, among individuals living alone, the younger age group (20-39 years) reported significantly lower quality of life than older age groups. While age was significantly associated with quality of life in only one subscale, elderly participants generally reported better quality of life across most subscales. Gender and educational level were associated with only one or two domains in quality of life, respectively [44]. According to a recent study conducted by American researchers, married patients diagnosed with esophageal cancer experience a lower quality of life compared to their single counterparts in some areas. This finding is in contrast to the previous research on the topic [2].

Additionally, a study conducted in the United States on the quality of life of patients with gynecological cancer showed that while women diagnosed with ovarian and endometrial cancer experienced an improvement in their quality of life as they aged, younger women diagnosed with cervical cancer reported the lowest quality of life scores. There are varying opinions on how sociodemographic traits influence the quality of life of cancer patients. The statistical significance of the results is limited by the fact that the respondents had different types of tumors, and some groups had smaller sample sizes than others. To obtain precise findings, it may be necessary to conduct a large-scale study focused on a specific group of cancer patients and analyze the relationship between their sociodemographic traits and quality of life.

The location of the cancer, the duration of the diagnosis, the stage of the cancer, the presence of distant metastases, and the ECOG performance status were identified as significant predictors of the quality of life of cancer patients in a study. However, the other variables did not show a significant correlation with the QoL scores. The study's findings were consistent with a 2013 Japanese study by Toyama et al., which also found that the quality of life of cancer patients was significantly correlated with their ECOG level and stage of the disease ($p < 0.05$) [45].

Zhou et al. found tumor type and cancer stage impact patient QoL [43], associated with disease state and treatment. A strong linear correlation was observed between Karnofsky's Performance Status and all QoL aspects. Additionally, a significant correlation ($p < 0.0001$) between ECOG status and overall QoL was noted. Nemati, Alhani, and Zandshahdi reported a mean QoL score of 87.48 for leukemia patients, consistent with this study [46]. This research aligns with Rustøen and Hope's study, indicating a significant (0.015) correlation between cancer patients' quality of life and time since diagnosis [47]. Similarly, Roustoen et al. observed a positive correlation between a patient's quality of life and time since diagnosis [44]. Esbensen et al. found that a

lung cancer diagnosis was linked to a poor quality of life [48]. Similarly, Lee et al. discovered that in breast cancer patients receiving chemotherapy, disease characteristics were significantly correlated with quality of life [49]. These findings are consistent with the results of this study, especially regarding the impact of chemotherapy treatment and cancer stage on quality of life. Zhou et al. found that patients with lung cancer who underwent surgery reported the highest quality of life (QoL), whereas patients who received combined treatment reported the lowest QoL. However, some of these results contradict previous findings. Although most of the study's conclusions are consistent with existing literature, not all of them are [43].

V. Limitation:

The first limitation of the study is the use of the EORTC QLQ C-30 scale, which works best when self-administered. All patients, however, were interviewed because the vast majority of the participants lacked literacy. Second, the exclusion of patients with communication issues or extremely poor conditions (ECOG performance status 4) may have limited the applicability of the results to all cancer patients.

VI. Conclusion:

In summary, this study identified several demographic and disease-related factors influencing cancer patients' quality of life. Extended survival in cancer therapy often correlates with improved health-related quality of life, especially for those with incurable diseases. Effective management of cancer-related symptoms, such as appetite loss, during active treatment regimens, is recommended. Financial assistance, particularly through treatment subsidiaries, is crucial for alleviating money troubles reported by the majority of patients and improving their overall standard of living.

Reference:

- [1]. Global Health Observatory (GHO, 2012). Cancer mortality and morbidity. Available at www.who.org. (retrieved on 26th June, 2013).
- [2]. American Cancer Society (2013). Cancer Facts & Figures 2013. Annual report (2013). Available at wrongdiagnosis.com. (Retrieved on 2nd July, 2013).
- [3]. Canadian Cancer Society. Canadian cancer statistics 2009. Toronto: Canadian Cancer Society; 2009.
- [4]. Bruera E, Neumann C, Brenneis C, et al. Frequency of symptom distress and poor prognostic indicators in palliative cancer patients admitted to a tertiary palliative care unit, hospices, and acute care hospitals. *J Palliat Care* 2000; 16(3): 16-21.
- [5]. Cohen SR, Mount BM, Bruera E, et al. Validity of the McGill Quality of Life Questionnaire in the palliative care setting: a multi-center Canadian study demonstrating the importance of the existential domain. *Palliat Med* 1997; 11(1): 3-20.
- [6]. Cheung WY, Le LW, Zimmermann C. Symptom clusters in patients with advanced cancers. *Support Care Cancer* 2009; 17(9): 1223-1230.
- [7]. Riechelmann RP, Krzyzanowska MK, O'Carroll A, et al. Symptom and medication profiles among cancer patients attending a palliative care clinic. *Support Care Cancer* 2007; 15(12): 1407-1412.
- [8]. McMillan SC, Small BJ. Symptom distress and quality of life in patients with cancer newly admitted to hospice home care. *Oncol Nurs Forum* 2000; 29(10): 1421-1428.
- [9]. Bradley N, Davis L, Chow E. Symptom distress in patients attending an outpatient palliative radiotherapy clinic. *J Pain Symptom Manage* 2005; 30(2): 123-131.
- [10]. Wilson KG, Chochinov HM, Skirko MG, et al. Depression and anxiety disorders in palliative cancer care. *J Pain Symptom Manage* 2007; 33(2): 118-129.
- [11]. Krant MJ. The hospice movement *N Engl J Med* 1978; 299: 546-9.
- [12]. Hillier R. Palliative medicine. A new specialty. *Br Med J* 1988; 297: 874-5.
- [13]. Ventafridda V, Tamburini M, Selmi S, Valera L, De Conno F. The importance of a Home Care Program for Patients with advanced cancer pain. *Tumori* 1985; 71:449-54.
- [14]. Rosenbaum EH, Rosenbaum IR. Principles of home care for the patient with advanced cancer. *JAMA* 1980; 244:1484-7. ReUly PM, Patten MR Terminal care in the home. *J R Coll Gen Pract* 1981; 31: 531-7.
- [15]. ReUly PM, Patten MR Terminal care in the home. *J R Coll Gen Pract* 1981; 31: 531-7.
- [16]. Coyle N. Continuity of care for the cancer patient with chronic pain. *Cancer* 1989; 63: 2289
- [17]. 93.
- [18]. Burus N, Carney K. The caring aspect of hospice: a study. In Paradis LF, ed. *Hospice handbook: a guide for managers and planners*. Rockville, Maryland: Aspen Systems Corp., 1985: 249-80.
- [19]. Bates T, Hoy AM, Clarke DG, Laird PP. The St. Thomas Hospital Terminal Care Support Team: A new concept of hospice care. *Lancet* 1981; i: 1201-3.
- [20]. Saunders C, ed. *The management of terminal disease* 2nd edition. London: Edward Arnold Publishers, 1984.
- [21]. Billings JA, Pantilat S. Survey of palliative care programs in United States teaching hospitals. *J Palliat Med* 2001; 4(3): 309-314.
- [22]. Casarett DJ, Hirschman KB, Coffey JF, et al. Does a palliative care clinic have a role in improving end-of-life care? Results of a pilot program. *J Palliat Med* 2002; 5(3): 387-396.
- [23]. Von Gunten CF. Secondary and tertiary palliative care in US hospitals. *JAMA* 2002; 287(7): 875-881.
- [24]. Zimmermann C, Seccareccia D, Clarke A, et al. Bringing palliative care to a Canadian cancer center: the palliative care program at Princess Margaret Hospital. *Support Care Cancer* 2006; 14(10): 982-987.
- [25]. Lagman R, Rivera N, Walsh D, et al. Acute in-patient palliative medicine in a cancer center: clinical problems and medical interventions — a prospective study. *Am J Hosp Palliat Care* 2007; 24(1): 20-28.
- [26]. Bruera E, Neumann CM, Gagnon B, et al. Edmonton Regional Palliative Care Program: impact on patterns of terminal cancer care. *CMAJ* 1999; 161(3): 290-293.

- [27]. Goldstein P, Walsh D, Horvitz LU. The Cleveland Clinic Foundation Harry R. Horvitz Palliative Care Center. Support Care Cancer 1996; 4(5): 329-333
- [28]. Elsayem A, Swint K, Fisch MJ, et al. Palliative care in-patient service in a comprehensive cancer center: clinical and financial outcomes. J Clin Oncol 2004; 22(10): 2008-2014.
- [29]. Peters L, Sellick K. Quality of life of cancer patients receiving in-patient and home-based palliative care. J Adv Nurs 2006; 53(5): 524-533.
- [30]. Mystakidou K, Tsilika E, Parpa E, et al. Assessment of anxiety and depression in advanced cancer patients and their relationship with quality of life. Qual Life Res 2005; 14(8): 1825-1833.
- [31]. Jordhoy MS, Fayers P, Loge JH, et al. Quality of life in advanced cancer patients: the impact of sociodemographic and medical characteristics. Br J Cancer 2001; 85(10): 1478- 1485.
- [32]. Holzner B, Kemmler G, Cella D, et al. Normative data for functional assessment of cancer therapy: general scale and its use for the interpretation of quality of life scores in cancer survivors. Acta Oncol 2004; 43(2): 153-160.
- [33]. Brazier JE, Harper R, Jones NM, et al. Validating the SF-36 Health Survey questionnaire: a new outcome measure for primary care. BMJ 1992; 305(6846): 160-164.
- [34]. Hjernstad MJ, Fayers PM, Bjordal K, et al. Using reference data on quality of life: the importance of adjusting for age and gender, exemplified by the EORTC QLQ-C30 (+3). Eur J Cancer 1998; 34(9): 1381-1389.
- [35]. Hearn J, Higginson IJ. Do specialist palliative care teams improve outcomes for cancer patients? A systematic literature review. Palliat Med 1998; 12(5): 317-332.
- [36]. Wilkinson E. Problems of conducting research in palliative care. In: Bosanquet N, Salisbury C, editors. Providing palliative care service: towards an evidence base. New York: Oxford University Press; 1999.
- [37]. Sajid, MS., Tonsi, A., &Baig, MK. (2008). Health-related quality of life measurement. Int J Health Care Qual Assur. 21(4), 365-73.
- [38]. Testa, MA., & Simonson, DC. (2009). Assessments of quality-of-life outcomes. N Engl J Med 334, 835-4.
- [39]. Heydarnejad, MS., Dehkordi, G., Hassanpour, D., &Dehkordi, K. (2011). Factors Affecting Quality of Life in Cancer Patients Undergoing Chemotherapy. African Health Science Journal, 11(2), 266-270. <http://www.ncbinlm>.
- [40]. Meyer, F., Fortin, A., Gelinias, M., Nabid, A., Brochet, F.,&Tetu, B. (2009). Health-related quality of life as a survival predictor for patients with localized head and neck cancer treated with radiation therapy. J Clin Oncol, 27, 2970-6.
- [41]. Maryam, Farooqui., Mohamed, Azmi. Hassali., Aishah, Knight., Asrul, Akmal. Shafie., Fahad, Saleem., Muhammad, Aslam. Farooqui., Hisham, Aljadhey.,(2013). Cross-Sectional Assessment Health-Related Quality of Life among Patients with Cancer in Malaysia. Asian Pacific Journal of Cancer Prevention, 14 (5), 3017-3021.
- [42]. Güner, P., Ishikhan V., Komurcu, S., Il, S., Ozturk, B., Arpacı, F., &Ozet, A. (2006). Quality of life and socio-demographic characteristics of patients with cancer in Turkey. Oncology.
- [43]. Damm K., Roeske, N., & Jacob, C. (2013). Health-related quality of life questionnaires in lung cancer trials: a systematic literature review. Health Econ Rev,13(3)11-15.
- [44]. Zhou, De-ming., Chu, Jin-wei., & Cheng, Xiao-lin. (2004). Factors affecting the health-related quality of life in lung cancer patients; Measured by EORTC QLQ-C30 QLQ-L13. Turkish Respiratory Journal, 4(2), 61-66.
- [45]. Rustoen, T., Moum, T., Wiklund, I. &Hanestad, BR. (2004). Quality of life in newly diagnosed cancer patients, Sigma Theta Tau International, Available at google.com. (Retrieved on 20th September, 2011).
- [46]. Toyama, Yoichi., Seiya, Yoshiida., Ryota Saito., Hiroaki, Kitamura., NorimitsuOkui., Ryo, Miyake.,.....Katsuhiko, Yanaga. (2013). Successful adjuvant bi-weekly gemcitabine chemotherapy for pancreatic cancer without impairing patients' quality of life. BiomedCentral.
- [47]. Nemati, M., Alhani, F.,&Zandshahdi, R.(2013). 1st Congress in quality of life. Tehran, Iran: Book of Abstracts. Quality of life in cancerous adolescents undergoing chemotherapy; p. 25.
- [48]. Rustøen, T., & Hope, S. (2004). Quality of life, two central issues for cancer patients: a theoretical analysis. Cancer Nurs. 18, 355-361
- [49]. Esbensen, B. A., Osterlind, K., Roer, O. & Hallberg, R. (2004). Quality of life of elderly persons with newly diagnosed cancer. European Journal of Cancer Care (Engl).13(5), 443-53. Available at www.pubmed.gov (Retrieved on 21st June 2011).
- [50]. Lee, H. L., Ku, N. P., Dow, W. J.& Pai, I. (2001). Factors related to quality of life in breast cancer patients receiving chemotherapy. Journal of Nursing Research, 9(3):57 - 68. Wwww.pubmed.gov. (retrieved on 23rd June, 2013).