# Quality of Life of Cancer Patients In A Cancer Hospital of Chitwan

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## Abstract

**Introduction:** Cancer is the third leading cause of death in developing countries and is appearing indistinctly public health catastrophe. Quality of Life (QoL) is one of the most important patient-reported outcomes in cancer therapy. As many studies had shown that QoL is important to be assessed but it is still lacking in it. Thus, the objective of this research was to assess quality of life of cancer patients.

**Methods:** A descriptive cross-sectional research design was used to assess the quality of life of cancer patients in B.P. Koirala Memorial Cancer Hospital. Non-probability purposive sampling technique was adopted to collect data from 384 respondents. Structured interview schedule; European Organization for Research and Treatment of Cancer (EORTC QLQ-C30): A Quality of Life Instrument tool was used to collect data. Descriptive (mean, frequency, percentage, and standard deviation) and inferential (Whitney U test, Kruskal-Wallis H and Pearson's correlation coefficient) statistics were applied for data analysis in Statistical Package for Social Science (SPSS) version-16.

**Results:** The finding of this study showed that more than half (63.3%) of the respondents had high quality of life. The average quality of life score for three different scales were 59.8 (global health status scale), 82.0 (functional scale) and 25.8 (symptom scale). Education, annual family income, ECOG performance status and site of cancer were found to be significantly associated with the three different quality of life scales. There was positive relation of functional scale and negative relation of symptom scale with global health status scale.

**Conclusion:** Most of the respondents had high QoL but few of them had still low QoL. Therefore the research finding highlights the importance of provision of necessary beneficiaries for cancer patients to improve their quality of life.

**Key words:** Cancer patients, EORTC QOL-C30, Quality of life,

## Introduction

Quality of life (QoL) is a broad ranging concept affected in a complex way by the person's physical health, psychological state, personal beliefs, social relationship and their relationship to salient features of their environment.[1] Cancer is a leading

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cause of death worldwide, accounting for 10 million deaths, or nearly one in sixth deaths. The most common cancers are breast, lung, colon and rectum and prostate cancers.[2] Quality of Life (QoL) is one of the most important patient-reported outcomes in cancer therapy.[3] Cancer and its treatment regimens can result in the disruption of one or more dimensions of the QoL.[4] The cancer-specific QoL is related to all stages of this disease and the types of treatment going through it.[5] The measurement of QoL in the cancer population with advanced age is increasingly being recognized as an important patient-reported outcome for evaluation of disease progression and the determination of the clinical benefit and the burden of cancer treatment.[6] Quality of life of cancer patients is influenced by many factors such as: economical status, site of cancer, stage of cancer, time passed since diagnosis and Eastern Co-operative Oncology Group (ECOG) performance status.[7]As many studies had shown that QoL is important to be assessed. Nepal has just built up the capacity to provide basic treatment therapies, indeed majority of researches were done to provide a view on positive outcome in terms of the increasing the quantity of life but very few of them have studied important of quality of life in cancer patients undergoing treatment. Thus, it seems more researches need to be done. Therefore, this study was aimed to find out the quality of life of cancer patients.

## Methods

This was a descriptive cross-sectional research study. The study participants were 384 cancer patients of age above 20 years who had already received at least one type of cancer treatment for at least 6 months attending in B.P. Koirala Memorial Cancer Hospital, Bharatpur-7, Nepal. Non-probability purposive sampling technique was adopted to select sample. Data was collected after obtaining the ethical approval from Institutional Review Board of Tribhuvan University, Institute of Medicine. Then formal permission for data collection was taken from B.P. Koirala Memorial Cancer Hospital, Chitwan. Patients were identified by reviewing the patient's record file. Data was collected by researcher herself face to face on first come first basis through using structured interview schedule at time convenient for the researcher. The data was collected from September 2 to September 28, 2018 in morning and day time. Written informed consent was taken from respondents before conducting interview. The average time taken to complete the interview was approximately 20-25 minutes. Privacy was maintained while conducting interview. Every precaution was taken to safeguard the right of the respondents. Patients were assured about the full authority to withdraw from the study at any time during the data collection period. Confidentiality of the information was ensured by emphasizing that the information provided would not be disclosed to other and only used for study purpose. The questionnaire consisted of two parts. Part I consisted of questions related to socio-demographic characteristics and disease related factorsand Part II comprised ofEuropean Organization for Research and Treatment of Cancer (EORTC QLQ-C30): A Quality of Life Instrument.[8]Data were entered using the software Statistical Package for Social Science (SPSS-16 version) in the same day of data collection after

considering its completeness and further analysis was done. The data was analyzed by calculating raw score, then converted the score to linear transformation then derived mean of each scale items and categorized QoL according to that score. Data were interpreted according to the objectives of the study. Descriptive statistics (frequency, percentage, mean and standard deviation) were used to describe the socio-demographic characteristics, disease related factors and to present the QoL score. Whereas the inferential statistics; Mann-Whitney U test and Kruskal-Wallis H test were used to compare the quality of life score of respondents according to their socio-demographic characteristics and disease related factors. Similarly, Pearson's correlation coefficient was calculated to assess the relationshipof functional scaleand symptom scale with global health status/QoL scale. The level of significance was considered at 5% with $p$ value <0.05 and 95% confidence interval.

## Results

Table 1. Status of Overall Quality of Life of Respondents (n=384)

| Level of Quality of Life | Number | Percent |
|---|---|---|
| High (>50 mean score) | 243 | 63.3% |
| Low (≤50 mean score) | 141 | 36.7% |

Table 1 shows that above more than half (63.3%) of the respondents had high quality of life based on the transformed mean scores.

Table 2. Scores in Three Different Quality of Life Scales (n=384)

| Quality of Life Scales | Raw Score Mean (±SD) | Transformed Score Mean (±SD) |
|---|---|---|
| Global Health Status/QOL Scales | 4.59 (1.15) | 59.8 (19.10) |
| Functional Scales | 1.53 (0.27) | 82.0 (9.7) |
| Physical functioning | 2.26 (0.42) | 58.2 (14.1) |
| Role functioning | 2.67 (0.73) | 44.3 (24.04) |
| Cognitive functioning | 1.43 (0.58) | 85.8 (19.4) |
| Emotional functioning | 1.73 (0.67) | 75.7(22.2) |
| Social functioning | 2.18 (0.69) | 75.6 (22.2) |
| Symptom Scales | 1.78 (0.38) | 25.8 (10.6) |
| Fatigue | 2.59 (0.53) | 25.8 (10.6) |
| Nausea and vomiting | 1.24 (0.48) | 7.9 (16.2) |
| Pain | 1.63 (0.65) | 20.9 (21.7) |
| Dyspnea | 1.21(0.53) | 6.9 (17.6) |
| Sleep disturbance | 1.48 (0.73) | 16.0 (24.4) |
| Loss of appetite | 1.83 (0.97) | 27.67 (32.2) |
| Constipation | 1.32 (0.73) | 10.6 (24.3) |
| Diarrhea | 1.05 (0.29) | 66.6 (1.8) |

| | | |
|---|---|---|
| Financial difficulties | 2.69 (0.85) | 56.3 (28.4) |

Table 2 reveals that the average Quality of Life scores (out of 100) for different scales were 59.8(global health status/QoL scale), 82.0(functional scale), and 25.8(symptom scale), which indicates high quality of life of cancer patients. Among functional scales the highest score is in cognitive functioning (85.8), followed by emotional functioning (75.67) and social functioning (75.6). Likewise, diarrhea is the most frequent symptoms (66.6) seen among symptoms scales followed by financial difficulties (56.3).

Table 3. Mean Different in Quality of Life Scores of Respondents with Selected Variables (Sex, Occupational status, Educational status, Distant metastasis, Duration of disease diagnosis, Duration of treatment)

(n=384)

| Variables | n (%) | Global health Mean (SD) † | Functional Mean (SD)† | Symptom Mean (SD)† |
|---|---|---|---|---|
| Sex | | | | |
| Male | 117(30.5) | 62.93 (20.09) | 82.78 (8.85) | 25.0(10.21) |
| Female | 267(69.5) | 58.49 (18.56) | 81.71 (9.29) | 26.23(10.73) |
| *p-value* | | .36 | .583 | .0583 |
| Occupational status | | | | |
| Unemployed | 229(59.6) | 58.37 (19.06) | 81.69(26.25) | 26.25(10.52) |
| Employed | 155(40.4) | 61.99 (19.07) | 82.52(9.24) | 25.29(10.66) |
| *p-value* | | .066 | .462 | .462 |
| Educational status | | | | |
| Unable to read and write | 191(49.7) | 57.07(18.34) | 81.07(8.99) | 26.97(10.38) |
| Able to read and write | 193(50.3) | 62.56(19.53) | 82.98(9.26) | 24.76(10.68) |

| | | | | |
|---|---|---|---|---|
| *p-value* | | .004 | .037 | .037 |
| Distant metastasis | | | | |
| Absent | 341(88.8) | 61.20(18.57) | 82.09(8.93) | 25.79(10.3) |
| Present | 43(11.2) | 48.37(20.09) | 81.57(11.06) | 26.39(12.76) |
| *p-value* | | .001 | .818 | .818 |
| Duration of disease diagnosis | | | | |
| 6 months-1 year | 323(84.1) | 60.73(19.0) | 82.24(8.46) | 25.62(27.15) |
| >1 year | 61(15.9) | 55.05(19.2) | 80.91(12.26) | 27.15(14.15) |
| *p-value* | | .043 | .936 | .936 |
| Duration of treatment | | | | |
| 6 months-1 year | 334(87) | 60.73(18.85) | 82.15(8.6) | 25.72(9.93) |
| >1 year | 50(13) | 53.83(20.01) | 81.24(12.36) | 26.77(14.26) |
| *p-value* | | .032 | .683 | .683 |

† Mean (SD) of Transformed score, Mann-Whitney U test

Table 3 illustrates that there was statistically significant different in global health scales, functional scales and symptom scales with regard to education. Based on mean score, global health score and functional score was higher among respondents who can read and write ($p$= .004, $P$=.037) and lesser score in symptom scales ($p$=.037). Among three scales, global health score was statistically significant difference with regard to distant metastasis ($p$=.001), duration of disease diagnosis ($p$=.043) and duration of treatment ($p$=.032). Respondents having disease diagnosis duration 6 months-1 year, absent of distant metastasis and duration of treatment 6 months-1 year had higher score in global health. However, sex and occupation of respondents were not statistically associated with quality of life scales of respondents ($p$>0.05).

Table 4. Mean Different in Quality of Life Scores of Respondents with Selected Variables (Age, Annual family income, ECOG performance status)
(n=384)

| Variables | n (%) | Global health Mean (SD)† | Functional Mean (SD)† | Symptom Mean (SD)† |
|---|---|---|---|---|
| Age (years) | | | | |
| 21-39 | 73(19.0) | 60.73 (18.92) | 82.49 (9.48) | 25.32 |
| 40-59 | 196(51.0) | 59.48 (18.44) | 81.86 (8.92) | (10.94) |
| ≥60 | 115(30.0) | 59.83 (19.12) | 82.03 (9.44) | 26.06 |
| *p-value* | | .781 | .702 | (10.29) |
| | | | | 25.86 |
| | | | | (10.89) |
| | | | | .702 |
| Annual family income | | | | |
| Not enough for 1 year | 80(20.8) | 56.87(18.69) | 79.97 (9.97) | 28.24 |

| | | | | |
|---|---|---|---|---|
| Enough for 1 year | 282(73.5) | 18.92 (59.87) | 82.32 (8.93) | (11.51) |
| Extra saving | 22(5.7) | 70.08 (20.52) | 85.76 (7.71) | 25.52 |
| *p-value* | | .026 | .035 | (10.30) |
| | | | | 21.56 |
| | | | | (8.91) |
| | | | | .035 |
| ECOG performance status | | | | |
| 0(Active as normal person) | 12(3.1) | 75.00 (19.16) | 90.74 (4.22) | 15.81 |
| | 77(20.1) | 63.53 (17.83) | 85.83 (6.25) | (4.87) |
| 1(Can carry out light work) | 182(47.4) | 60.26 (18.81) | 82.21 98.53) | 21.48 |
| | | | | (7.22) |
| 2(>50% time spent up and about during the day time) | 113(29.4) | 55.02 (19.21) | 78.23 (10.57) | 30.25 |
| | | | | (12.03) |
| | | .002 | .001 | |
| 3(time spent in bed/chair more than 50% of walking hours) | | | | 25.86 |
| | | | | (10.57) |
| *p-value* | | | | .001 |

† Mean (SD) of Transformed score, Kruskal-Wallis H test

Table 4 illustrates that there was statistically significant different in three QoL scales scores with regard to annual family income and ECOG performance status. Global health score and functional score was higher among respondents having extra saving (*p*=.026, *p*=.035) and lesser score in symptom scale (*p*=.035). Similarly, global health score and functional score was higher among respondents with ECOG performance status 0(as active as normal) (*p*=.002, *p*=.001) and was lesser symptom scales score (*p*=.001). However, age was not statistically associated with quality of life scales of respondents (*p*>.005).

Table 5. Mean Different in Quality of Life Scores of Respondents with Selected Variables (Site of cancer, Stage of cancer)
(n=384)

| Variables | n (%) | Global health Mean (SD) † | Functional Mean (SD) † | Symptom Mean (SD)† |
|---|---|---|---|---|
| Site of cancer | | | | |
| Breast | 92(24.0) | 57.79(17.72) | 81.25(9.05) | 26.76(10.45) |
| Cervical | 90(23.4) | 58.06(17.46) | 84.28(6.81) | 23.26(7.86) |
| Gastrointestinal (GI) | 60(15.6) | 64.72(18.62) | 83.33(10.32) | 24.36(11.91) |
| Hematological | 38(9.9) | 63.81(19.47) | 80.41(8.81) | 27.73(10.17) |
| Lung | 35(9.1) | 56.43(23.05) | 77.84(11.68) | 30.69(13.47) |
| Ear, Nose and Throat | 28(7.3) | 55.95(16.67) | 84.25(7.55) | 23.30(8.71) |
| Others | 41(10.7) | 63.01(23.43) | 82.03(9.16) | 27.58(11.08) |
| p-value | | .044 | .007 | .007 |
| Stage of cancer(n=270) | | | | |
| Stage I | 90(23.4) | 62.41(19.08) | 83.06(9.47) | 24.67(10.93) |
| Stage II | 116(30.2) | 59.19(17.87) | 81.87(9.09) | 26.04(10.49) |

| | | | | |
|---|---|---|---|---|
| Stage III | 48(12.5) | 59.89(19.49) | 82.59(9.49) | 25.21(10.95) |
| Stage IV | 16(4.2) | 50.0(21.08) | 79.3(10.41) | 29.01(12.02) |
| p-value | | .2 | .54 | .54 |

† Mean (SD) of Transformed Score, Kruskal-Wallis H test

Table 5 illustrates that there was statistically significant different in three QoL scales scores with regard to site of cancer. Global health score was higher among respondents with GI cancer (*p*=.044). Similarly, respondents with cervical cancer had higher functional score (*p*=.007) and lesser symptom scales score (*p*=.007). However, stage of cancer was not statistically associated with quality of life scales of respondents (*p*>.005).

Table 6 depicts that functional scales showed the positive correlation (r=.271) and symptom scales showed the negative correlation (r= -.271) with global health status/QoL scales. Among functional subscales, emotional functioning had the highest correlation (r=.288) followed by social functioning (r=.241). Similarly, among the symptom scales financial difficulties had the highest negative correlation (r= -.309) followed by pain subscales (r=-.258). All the symptom subscales were statistically significantly except fatigue, dyspnea and diarrhea.

Table 6. Correlation of Functional Score and Symptom Score with Global Health Status/QoL Score of Respondents **(n=384)**

| **Quality of Life Scales** | **Correlation coefficient (r)** | **-value** |
|---|---|---|
| **Functional Scales** | .271** | 001 |
| Physical functioning | .174** | 001 |
| Role functioning | .057 | 001 |
| Cognitive functioning | .161** | 002 |
| Emotional functioning | .288** | 001 |
| Social functioning | .241** | 001 |
| **Symptom Scales** | -.271** | 001 |
| Fatigue | -.038 | 454 |
| Nausea and vomiting | .110** | 031 |
| Pain | -.258** | 001 |
| Dyspnea | -.082 | 107 |
| Insomnia | -.137** | 007 |
| Appetite loss | -.113* | 026 |
| Constipation | -.111* | 030 |
| Diarrhea | -.049 | 339 |
| Financial difficulties | -.309** | 001 |

**correlation at 1% level of significance

*correlation at 5% level of significance

## Discussion

The average score for global health status scale was 59.8 ( ± 19.10), 82.0(± 9.7)for functional scales and 25.8 (± 10.6)for symptom scales, which was quite similar to a study done in India which revealed that the global health status score was 53.05 and for functional scales was above mean while that of symptom scales was below mean.[9]Among functional subscales, cognitive functioning 85.8 (± 19.4) had higher score followed by emotional 75.7 (± 22.2), social 75.60 (± 22.2), physical 58.2 (±14.1) and role 44.3 (±24.04) functioning. This picture is corresponding to the scores obtained in the study done in National level referral centre of Nepal, which revealed cognitive functioning 85.44 (±20.21) had highest scores followed by emotional functioning 82.95 (±18.91).[7]Similarly, among symptom scales, financial difficulties 56.3 (±28.4) was the most frequent complaint, both in this study as well as in the study done in gynaecologic cancer patients in Ethiopia, the score for diarrhea is just in contrast to this study which showed lowest score for diarrhea 1.19 (±7.38).[10] This study findings also supported by the study conducted among Chinese Elderly Patients undergoing chemotherapy showed financial difficulties 55.77 (±36.55) and fatigue 46.18 (±26.48) were the top two highest scores among all nine symptom-related scales.[11]

Regarding to socio-demographic characteristics of respondents, education, annual family income, ECOG performance

status and types of cancer were found to be statistically significant for influencing the quality of life scales. This study showed that respondents being literate had highest global health score ($p$=.004), highest functional score ($p$=.037), least symptom scores ($p$=.037). Respondents having extra saving also had highest global health score ($p$=.026), highest functional score ($p$=.035), least symptom scores ($p$=.035). Similarly, global health score and functional score was highest among respondents with ECOG performance status 0 (as active as normal) ($p$=.002, $p$ =.000) and had least symptom score ($p$=.000). This study finding was supported by the study conducted in National level referral centre of Nepal, which revealed that education, economic status, site of cancer, ECOG performance status were found to be statistically significant ($p$<.05)for influencing the quality of life scales.[7]

Although there were differences between quality of life in various age groups of respondents, they are statistically insignificant ($p$>.05). This finding is consistent with other study done for analysis of quality of life subjective perception by patients treated for prostate cancer study by .[12]Similarly, another finding of this study is consistent to study conducted in Iran revealed that no significant relationship was found between average QoL scores with gender and stage of cancer.[13]When further analysis was done, functional scales showed positive correlation (r=.271) and symptom scales showed the negative correlation (r= -.271). This finding is supported by study conducted in similar setting.[7]Among functional subscales, emotional functioning had the highest correlation (r=.288) followed by social functioning (r=.241). Similarly, financial difficulties had the highest negative correlation (r= -.309) followed by pain (r=-.258) among symptom scales. All the symptom subscales were statistically significantly except fatigue, dyspnea and diarrhea. In contrast to this finding, a study on quality of life and non-pain symptoms in patients with cancer showed that fatigue has the strongest correlation with overall QoL.[14]

## Conclusion

Based on the findings of the study the average quality of life scores for different scales indicates high quality of life of cancer patients. Among the selected socio-demographic and disease related factors, education, annual family income, ECOG performance status and site of cancer were found to be associated with the three different quality of life scales. Similarly, distant metastasis, duration of disease diagnosis and duration of treatment were found to be associated with only the global health status/QoL scale. There was positive correlation of functional score and negative correlation of symptom score with global health status score of the respondents. Symptom score showed effect in cancer patients. Health care institution need to have provision of beneficiaries for cancer patients for improving their quality of life.

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