



“A Correlation Study to Assess the Quality of Life and Quality of Sleep of People Living with Cancer. A Cross Sectional Study at Hsk and Kerudi Hospitals, Bagalkot,” Karnataka, India.

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KEYWORDS

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ABSTRACT:

Introduction: Cancer patients and survivors are vulnerable to disturbed sleep and impaired quality of life across the continuum of illness. Few studies have sought to identify predictors of quality of life using well- validated measures of both sleep quality and quality of life in this population.

Objectives: To assess the quality of life and quality of sleep of People living with Cancer and find the relationship between them. in HSK and Kerudi cancer hospital at Bagalkot

Methods: The quality of life and quality of sleep were measured using WHOQOL-BREF scale and PITTSBURGH SLEEP QUALITY INDEX scale respectively from a convenient sample of 40 People living with Cancer attending HSK and Kerudi cancer hospital, Bagalkot in a cross-sectional survey. The data was entered in MS excel sheet and transferred to SPSS 25 for analysis.

Results: Majority (90%) of cancer patients had average quality of life, (50%) of cancer patients had Moderate sleep disturbance. A statistically significant negative correlation was found between the quality of life and quality of sleep ($r_s = -0.720$, $P < 0.01$). A significant association was found between the quality-of-life scores and demographic variable age ($p < 0.05$) and there was a not significant association between total quality of sleep scores and demographic variables

Conclusions: There was significant negative correlation between quality of life and quality of sleep among cancer patients.

1. 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 report³ 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 Sufficient sleep is an effective element in physical and mental health.¹ A good sleep provides physical restoration through anabolic functions such as protein and tissue synthesis.⁸ Over the recent years, researchers and specialists have paid more attention to the relationship between sleep and cancer.⁹ Cancer has been considered one of the major public health threats for public health systems in the world.^{10,11} Patients with cancer may experience various problems such as sleep problems, fatigue, depression, anxiety, worries and treatment problems. Sleep disorders in patients with cancer are approximately double than general population (12-25% in the general population and 30-50% in oncology patients).¹¹ Sleep disorders include a range of symptoms such as waking early in the morning, daytime sleepiness, waking up and having trouble getting back to sleep and difficulty falling asleep.¹² Approximately, 20-70% of breast cancer patients suffer of insomnia.¹³ Tag Eldin et al., reported that short sleep duration, decrease of sleep efficiency, sleep latency was significantly more in patients with cancer compared to healthy people.¹⁴ Chen et al., indicated that patients with cancer and their intimate partners have poor sleep quality.¹⁵ Indeed, recent scientific evidence shows that a correct assessment of sleep disorders in cancer patients suggested interesting therapeutic views in the treatment of cancer patients.¹⁶

2. Objectives:

To assess the quality of sleep among cancer patient. To assess the quality of life among cancer patient. To find out the correlation between the quality of sleep and quality of life among cancer patient. To find out the association between the quality of life and selected social demographic variable.

3. Methods:

It was a descriptive cross-sectional study with an aim to assess the quality of life and quality of sleep of People living with Cancer and find the relationship between them. in HSK and Kerudi cancer hospital, at Bagalkot. A sample of 40 people was selected by convenient sampling technique.

Study participants:

The study participants were 40 people residing in rural areas of Bagalkot District. The data was collected from 40 people in HSK and Kerudi cancer hospital, at Bagalkot.

Setting of the study:

Based on the investigator's familiarity, availability of the subjects and feasibility to conduct the study, the present study was conducted in HSK and Kerudi cancer hospital, at Bagalkot.

Sampling technique:

The sample was selected by convenient sampling technique will be used to select the sample for HSK and Kerudi cancer hospital, at Bagalkot.

Sample size estimation:

The sample size for the present study was estimated using the following formula based on result of pilot study.

$$\text{Sample size} = Z\text{value}^2 \times SD^2 / d^2$$

where, **Z** = the value of normal variant at 95% confidence level i.e. Z value = 1.96.

SD = Standard Deviation

D = Expected allowable error in the mean (i.e. 5% of mean)

Mean = 5.14 **SD** = 0.7 **d** = $5 \times 5.14 / 100$ **d** = 0.25

The value of normal variant at 95% confidence level i.e. **Z** value = 1.96.

Hence, Sample size (n) = $Z \text{ value}^2 \times SD^2 / d^2$

Sample size (n) = $(1.96)^2 \times (0.7)^2 / (0.25)^2$

Sample size (n) = $3.84 \times 0.49 / 0.06$

Sample size (n) = 31.33

Hence the calculated sample size was 31.33, as round off the researcher selected 40 people at Bagalkot.

Data collection Instrument:

➤ WHO Quality of life – Cancer BREF – To Assess the Quality of life.

➤ Pittsburgh Sleep Quality Index (PSQI) – To Assess the Quality of sleep.

Translation and reliability of data collection instruments:

The instruments were translated in to Kannada language and retranslated in to English. Similarity between original and translated tool were ascertained by linguistic experts. The reliability of all 2 tools was established by test-retest method. The tools were administered to 4 people living with Cancer and



the same tools were administered to same group with a gap of seven days. Spearman's rank order correlation co-efficient for baseline proforma was $R=1$. For WHO Quality of life – Cancer BREF [$r=0.78$] and for Pittsburg quality of sleep scale [$r=0.81$] suggesting all the tools were reliable for conducting the study.

Data collection Procedure:

Data collection was done from 10-07-2022 at HSK and Kerudi Cancer Hospital, at Bagalkot. A formal Permission was obtained from the Principal of Sajjalashree Institute of Nursing Sciences Navanagar, Bagalkot. Then permission was obtained from the Principal of HSK and Kerudi cancer hospital, at Bagalkot. The investigator given self-introduction explained the purpose of data collection to the subjects and subject's willingness to participate in the study was ascertained. The subject was assured the anonymity and confidentiality of the information provided by them. WHO Quality of life – Cancer BREF–was administered to 40 People living with Cancer to assess the Quality of life. And Pittsburg quality of sleep scale was administered to 40 People living with Cancer to assess the quality of sleep each participant has taken around 45minutes to complete both the scale.

Ethical clearance:

Ethical clearance certificate was obtained from Institutional ethical clearance committee, B.V.V.S Sajjalashree Institute of Nursing sciences, Bagalkot (ref No. BVVSSIONS-IEC/2022-23/956 Dt:12/08/2021) written consent of participation was obtained from participants before data collection.

Statistical analysis:

The data was analysed using SPSS version 25. The obtained data was entered in MS excel sheet. The data was edited for accuracy and completeness. The categorical responses were coded with numerical codes. The data was presented with frequency and percentage distribution tables and diagrams. The description of quality of life and quality of sleep was presented with frequency, and percentage distribution, mean, median and standard deviation, range etc. Spearman's rank order correlation coefficient formula used to find out the co-relation between the quality of life and quality of sleep. The chi-square (χ^2) test will be used to find out the association between the demographic variables with the quality of life and quality of sleep.

4.Results

A: Sample characteristics:

Cancer patients were equally distributed in all the age groups with highest being in 41-50 years (42.5%). (57.5%) of the cancer patients were males and majority of them were educate below SSLC (47.5%). Most of the cancer patients (90%) were married and majority of them were Hindu (67.5%). Majority of the cancer patients (55%) had monthly family income below Rs 10,000. Cancer patients were spread out in variety of occupation with highest being farmers (40%). Majority of the cancer patients have colon cancer (37.5%). High number of cancer patients (60%) have been suffering from cancer from 1 year. Most of cancer patients are vegetarian (47.5%). Majority of cancer patients (62.5%) were under the treatment of chemotherapy. All the cancer patients have good family support. Most of the cancer patients (87.5%) were belonging to nuclear family.

B: Assessment of Quality of life of Cancer patients:

Findings reveal that majority of the Cancer patients (90%) had average quality of life, (10%) of the cancer patients had good quality of life and there were no cancer patients had poor quality of life. (Table 1)

Table 1: Levels of Quality of life of Cancer patients:

N=40			
Levels of quality of Life	Range of score	No. of respondent	Percentage (%)
Poor quality of life	Less than 60	00	00%
Average quality of Life	60-90	36	90%
Good quality of life	90 and above	04	10%

C: Assessment of Quality of Sleep of Cancer patients:

Results of the study show that majority (50%) of the Cancer patients had moderate sleep disturbance and (42.5%) of the cancer patients had no or mild sleep disturbance and remaining (7.5%) of the cancer patients had good quality of life. (Table 2).



Table 2: Levels of Quality of Sleep

N=40			
Levels of Quality of Sleep	Range of score	No. of respondents	Percentage (%)
No or mild sleep disturbance	0-7	17	42.5%
Moderate sleep disturbance	8-14	20	50%
Sever sleep disturbance	15-21	03	7.5%

D: Correlation between Quality of life and Quality of sleep of Cancer patients:

Correlation analysis shows that there was a significant negative correlation between quality of life and quality of sleep of cancer patients. (Table 3).

Table 3: Correlation between Quality of life and Quality of sleep of cancer patients:

N=40	
Correlation between quality of life and quality of sleep	
Correlation coefficient	-0.720**

**P<0.01

E: Association between Quality of life and Socio-demographic variables of Cancer patients:

Finding related to association between the quality of life and socio-demographic variables of Cancer patients reveal that there was a significant association between the quality of life and variable age. (Table 4).

Table 4: Association between quality of life and Socio-demographic variables of cancer patients:

N=40			
Sl. No.	Socio- demographic & clinical Variables	Df	P Value
1	Age	4	0.01*
2	Gender	1	0.62
3	Education qualification	3	0.82
4	Marital status	3	0.35
5	Religion	2	1.00
6	Family monthly income	2	0.65

7	Type of occupation	3	0.57
8	Type of cancer	3	0.58
9	Duration of illness	2	0.75
10	Type of diet	2	0.74
11	Type of treatment	3	1.00
12	Type of family	1	0.42

*P<0.05

F: Association between Quality of sleep and Socio-demographic variables of cancerpatients:

Finding related to association between the Quality of sleep and socio-demographic variables of Cancer patients reveal that there was not significant association between Quality of sleep and demographic variables. (Table 5).

Table 5: Association between Quality of sleep and Socio-demographic variables of Cancer patients.

N=40			
Sl. No.	Socio-demographic & clinical Variables	Df	p value
1	Age	8	0.939
2	Gender	2	0.268
3	Education qualification	6	0.796
4	Marital status	6	0.170
5	Religion	4	0.835
6	Family monthly income	4	1.000
7	Type of occupation	6	0.888
8	Type of cancer	6	0.907
9	Duration of illness	4	0.128
10	Type of diet	4	0.212
11	Type of treatment	6	0.521

*P<0.05

5. Discussion

The main objective of the present study was to find the relationship between the quality of life and quality of sleep people living with Cancer. This cross-sectional study included a sample of 40 cancer patients admitted in HSK and Kerudi cancer Hospital, Bagalkot. Findings revealed that, Majority (90%) of Cancer patients had average quality of life and (50%) of cancer patients had moderate sleep disturbance. A statistically assessment of quality of sleep among



cancer patients reveals that the most of the cancer patients (50%) had moderate sleep disturbance, (42.5%) of them had No or moderate sleep disturbance and remaining (7.5%) of them had severe sleep disturbance. Similar findings were found in the study conducted by Al Maqbali M, Al Sinani M, Alsayed A, Gleason AM. (2022) to assess the quality of sleep among cancer patients in clinical nursing research in UK. The result showed that most of the cancer patients had high moderately sleep disturbance (60.7%).¹⁷ A statistically assessment of levels of quality of life among cancer patients reveals that, majority of cancer patients (90%) had Average quality of life, (10%) of cancer patients had good quality of life and no poor quality of life of cancer patients. Similar findings were found in the study conducted by Lewandowska A, Rudzki G, Lewandowski T, et al. (2020) to assess the quality of life of cancer patients in Jaroslaw Poland. The result showed that most of the cancer patients had average quality of life (95%).¹⁸ A similar study was conducted to assess the quality of sleep at the department of medical oncology of a tertiary cancer care center. The study concluded that Indian cancer patients have short sleep duration and poor quality of sleep. A higher prevalence of sleep disturbances was seen among female cancer patients. PSQI questionnaire can be a cost-effective way of screening cancer patients for poor quality of sleep.¹⁹ A similar study was conducted to assess Sleep disturbance is one of the most common and troubling symptoms that harm the quality of life throughout all phases of treatment and stages of the illness among patients with cancer. This meta-analysis highlights the importance of developing optimal monitoring strategies to reduce sleep disturbance and improve the quality of life of cancer patients.²⁰ A similar study was conducted to assess the quality of sleep of cancer patients were recruited before the start of radiotherapy from our institution between January 2019 and February 2020. A study concluded that approximately 40% of the cancer patients suffer from sleep disturbance before the start of radiotherapy. Patients with BMI ≥ 20 kg/m² and receiving surgery are less likely to develop sleep disturbance in comparison with others.²¹

A similar study was conducted to assess the QOL among cancer patients. A survey was conducted among 768 cancer patients selected by a convenient sampling technique. A study concluded that, 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.²² A similar study was conducted to assess the QOL, Cancer is a disease caused by abnormal cells shape change and loss of cell variation. Cancer patients suffer from mental and physical problems, which affect their social quality of life (QOL). The study concluded that, Considering the average QOL for cancer patients at Sari Comprehensive Cancer Center and the hospital cost, the evaluation of the patients from the view point of the hospital equipment was positive.²³ A similar A study was conducted to assess the QOL and QOS of Lung cancer patients and survivors are vulnerable to disturbed sleep and impaired quality of life (QOL) across the continuum of illness. The study concluded that the Lung cancer symptoms and sleep quality were important determinants of QOL in this pooled sample of lung cancer patients and survivors.²⁴

Conclusion and Recommendation:

The study is helpful to find the relationship between the quality of life and quality of sleep people living with Cancer. A negative correlation between the quality of life and quality of sleep of cancer patients suggests that interventions focusing to enhance the quality of sleep of cancer patients would contribute to the improvement of their quality of life. Future research can investigate the effect of various psychological measures to improve the quality of life in cancer patients with the aim of improving their overall quality of sleep. Community-based workers and health professionals should provide education to family members of cancer patients regarding techniques of improving their quality of sleep so that their quality of life could be improved.

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