

# Effectiveness of Yoganidra on quality of sleep among cancer patients

Divya N Anand<sup>1</sup>, Linu Sara George<sup>2</sup>, Anil Raj<sup>3</sup>

1) MSc Nursing Graduate, Department of Psychiatric Nursing, Manipal College of Nursing Manipal, Manipal University

2) Professor and Head, Department of Fundamentals of Nursing, Manipal College of Nursing Manipal, Manipal University

3) Lecturer, Department of Medical Surgical, Manipal College of Nursing Manipal, Manipal University

## Abstract

**Introduction:** Cancer is one of the major health problems that occur in people of all races and cultures. There is a dearth of literature on implementing non-pharmacological measures to improve quality of sleep among cancer patients. **Objectives:** This study assessed quality of sleep among cancer patients and the effectiveness of Yoganidra intervention on quality of sleep in terms of improvement using Pittsburgh Sleep Quality Index (PSQI). **Methods:** A survey was used in Phase I (n=25) to assess the quality of sleep using PSQI. In phase II, an evaluative approach was used through one group pre-test post-test design (n=19). The participants with poor quality of sleep were given Yoganidra intervention. **Results:** Most of the participants were in the age group of 41-50 years (44%), 48% were males and 52% were females, 32% received education below 10<sup>th</sup> standard, 48% were agriculturists and 84% were married whereas 16% of them were widowed. Among the study participants, most of them (24%) suffered from breast cancer; 40% each were in stage I and Stage II. Majority (75%) of the participants were receiving chemotherapy along with radiation therapy. Paired t test was used to determine the effectiveness of Yoganidra intervention on quality of sleep, which showed that there is significant difference between pre-test and post-test mean scores on PSQI (t=3.720) (p=0.002). **Conclusion:** The study found that Yoganidra is an effective intervention in improving quality of sleep among cancer patients.

**Key words:** quality of sleep, Yoganidra, cancer, insomnia

## INTRODUCTION

Cancer is a disease of all the age groups, especially in elderly above 55 years of age; the majority of cases (76%) are diagnosed. Globally, cancer accounts for 5.1% of total disease burden and 12.5% of all deaths. In India, it accounts for 3.3% of disease burden and 9.9% of all deaths. Based on Cancer registry of India, 800,000 new cancer cases are reported every year (Heitkemper, O'Brien and Bucher, 2011).

Cancer patients experience many physical and psychological problems, sleep disturbance being one among them. This may be due to pain, prolonged and frequent stay at hospitals, effect of some medications and also the feelings associated with cancer.

Many recent trials have recommended Yoga and other similar non-pharmacological means for treating sleep disturbances. Yoganidra is a systematically

designed method of bringing up a state of complete physical, mental and emotional relaxation. 'Yoga' means focusing of awareness to a single point and 'Nidra' means sleep. It is a psychic sleep or deep relaxation with inner awareness. (Payapilly et al., 2010).

Carson et al. (2010) conducted a yoga awareness program among breast cancer patients for 8 weeks with one session each week, each session lasting 120 minutes. The pre and post-test scores were measured by PSQI and daily diary rating scale. The study revealed that there was an improvement in quality of sleep, which was identified through post-test PSQI values. A similar study was done in USA by Danhauer et al. (2009) among 44 breast cancer patients on quality of sleep. The pre and post-test scores were measured using PSQI. Restorative

**Linu Sara George**

Professor and Head, Department of Fundamentals of Nursing, Manipal College of Nursing, Manipal. E-mail: linu.j@manipal.edu

Yoga postures were done for 10 weeks with one session each week, each session of 75 minutes and the sessions were found to be effective in improving quality of sleep.

## **MATERIALS AND METHODS**

### **Research design**

The research design adopted for the study was divided into two phases:

**Phase I:** Survey was used to assess the quality of sleep. The PSQI was used to assess the quality of sleep among cancer patients.

**Phase II:** Based on the scores, the patients who were having poor quality of sleep were selected for the study. One group pre-test post-test design was adopted to determine the effectiveness of Yoganidra on quality of sleep among the selected patients.

### **Ethical consideration**

The intervention was carried out in a quiet and separate room in the oncology ward of Kasturba Hospital, Manipal. Ethical clearance was obtained from the Institutional Ethical Committee of Kasturba Medical College and Hospital, Manipal. Administrative permission was obtained from Medical Superintendent of Kasturba Hospital and Head of Department of Radiation Oncology Unit of Shri Shirdi Sai Baba Cancer Hospital and Research Centre, Manipal. Written informed consent was taken from all the participants.

### **Participants**

The cancer patients admitted to the Radiation Oncology Department of Shri Shirdi Sai Baba Cancer Hospital and Research Centre, Kasturba Hospital, Manipal formed the study population. A total of 25 cancer patients were enrolled using purposive sampling. Around 22 of them were having poor quality of sleep whereas three were having good quality of sleep based on the scores obtained through PSQI tool. Participants who had good quality of sleep were excluded from the study and participants who were having poor quality sleep were selected for the Yoganidra intervention. Out of 22 participants, three did not complete the sessions due to complications related to radiation therapy, hence the final sample

size was 19. The participants were selected based on following inclusion criteria; inpatients who were in the age group of 18 to 60 years, willing to participate in the study, ambulatory without assistance, having PSQI score more than five.

### **Instruments**

*Tool 1:* Pittsburgh Sleep Quality Index (PSQI)

This standardized tool consists of 19 self-rated questions and five questions rated by the supporting partner or roommate. The 19 self-rated items are combined to form a “seven” component scores, each of which have a range of 0-3 points. The seven component scores are then added to yield one global score with a range of 0 to 21 points, with “0” indicating ‘no difficulty and “21” indicating severe difficulties in all domains. The seven components include subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication and day time dysfunction. The minimum score for each item is 0 and maximum score is 3. The total score  $\leq 5$  was associated with good quality of sleep and total score  $>5$  was associated with poor quality of sleep.

*Tool 2:* Demographic Variables

Background information of the participants on demographic variables was collected, which include, age, gender, education, occupation and marital status.

*Tool 3:* Clinical Variables

This section was designed for the study purpose and consisted of four items in order to assess the severity of disease condition of the samples. The variables include type of cancer, stage of cancer, duration of illness and type of treatment received.

### **Yoganidra**

Yoganidra includes steps such as, relaxation, resolve (promise), rotation of consciousness, awareness of breath, feelings and sensation, visualization, resolve and ending. The participants were asked to maintain ‘Shavasana’ posture throughout the session. The patients were taken to a separate room and the session was conducted between 6.30 and 7.30 pm. It took around 35 minutes to complete each session. It

was ensured that each participant completed 14 days of intervention.

### Analysis

Frequency and percentage was used to describe the sample characteristics and quality of sleep. Paired t-test was used to test the effectiveness of intervention.

## RESULTS

**Table 1:** Demographic variables of study participants (n=25)

Demographic variables	Frequency (f)	Percentage (%)
<b>Age in years</b>		
21-30	1	4
31-40	3	12
41-50	11	44
51-60	10	40
<b>Gender</b>		
Male	12	48
Female	13	52
<b>Education</b>		
Illiterate	4	16
Below 10 <sup>th</sup> standard	8	32
10 <sup>th</sup> standard	4	16
PUC	5	20
Graduate	3	12
Postgraduate	1	4
<b>Occupation</b>		
Agriculture	12	48
Teacher	3	12
Security	2	8
Unemployed	4	16
Housewife	4	16
<b>Marital status</b>		
Married	21	84
Widowed	4	16

The data presented in the Table 1 shows that majority of the participants belonged to age group of 41-50 years (44%), 48% were males and 52% were females, 32% among them received education below 10<sup>th</sup> standard, 48% were agriculturists, 84% were married and 16% of them were widowed.

**Table 2:** Description of quality of sleep (n=25)

Quality of sleep	f	%
Good	3	12
Poor	22	88

The data presented in Table 2 shows that 12% of total participants reported good quality of sleep whereas 88% of the participants reported poor quality of sleep. The participants having good quality of sleep were excluded from the study.

### Clinical Variables

Among the participants, 24% of participants suffer from breast cancer, 16% suffer from cancer of vocal cord, 12% suffer from oesophageal cancer, 12% suffer from cervical cancer, 8% suffer from cancer of tongue, 8% suffer from pancreatic cancer, 8% suffer from skin cancer, 8% suffer from ganglioneuroblastoma. In this study, participants suffering from Stage I, Stage II, Stage III and Stage IV cancers were 40%, 40%, 16% and 4% respectively. 75% of the participants were receiving chemotherapy along with radiation therapy and 25% were receiving only radiation therapy. 72% of the participants had been suffering from the illness for less than one year, 24% for 1-2 years and 4% for 3-4 years.

### Effectiveness of Yoganidra on quality of sleep

**Table 3:** Mean, standard deviation and t value of pre-test and post-test scores of PSQI (n=19)

	Mean	SD	Standard error Mean	t	df	p value
Pre-test	10.10	2.8	0.65	3.720	18	0.002*
Post-test	9.20	2.2	0.51			

\*p<0.05

The findings of the study showed that t value (3.720) was significant at 0.05 level. Hence, it is inferred that Yoganidra was effective in improving quality of sleep among cancer patients.

## DISCUSSION

The findings of the study showed that the mean change between the pre-test and post-test PSQI score was found to be significant and hence, Yoganidra was effective in improving quality of sleep among cancer patients. The findings are supported by a multicentre randomized controlled trial done by Mustian et al. (2013) on effectiveness of yoga for sleep quality among cancer patients. Around 410 cancer survivors had enrolled for the study. The findings of the study revealed that yoga participants showed significant improvement in scores of global

sleep quality, subjective sleep quality, daytime dysfunction, wake after sleep onset, sleep efficiency and medication use at post intervention (all  $p \leq .05$ ) compared to control group. The findings of this study is consistent with the study findings of Cohen et al. (2004), conducted among 19 cancer patients who were receiving either chemotherapy, radiation therapy or both. The experimental group underwent a Tibetan yoga session. Pre-test and post-test scores were assessed using the PSQI and actigraphy of the participants. Patients who were in the Tibetan Yoga group reported that they experienced overall better sleep quality, subjective sleep quality, greater improvements in sleep latency, sleep duration and less use of sleep medications compared to patients in the control group. The present study findings will be a base for the future investigators to carry out an extensive research on this area.

## CONCLUSION

The results of the present study showed Yoganidra as an effective intervention to improve the quality of sleep among cancer patients.

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