



Quality of Sleep among Cancer patient's: A Systematic Review

Roopasree Kamaraj,

Assistant Professor, Department of medical surgical nursing

Sri Lakshmi Narayana College of Nursing

ABSTRACT

Background: Whether or whether they are related to other medical conditions, poor sleep quality and sleep problems are very common among cancer patients. Cancer diagnosis and treatment may interfere with sleep or worsen existing sleep problems. According to research that use both quantitative and qualitative sleep measures, more than half of cancer patients have sleep difficulties. The study's objective was to assess cancer survivors' sleep quality.

Methods and materials: The keywords "sleep," "sleep quality," "cancer patients," "cancer survivors," and "quality of sleep" were used to search databases (PubMed, Google Scholar, Academia, Open Access, Directory of Open Access Journals), which resulted in 100 research studies. The studies were sorted based on the inclusion and exclusion criteria, and consequently, 12 articles were chosen for the main analysis.

Results: It was found that most of the studies used a prospective and survey research design. The mean age of the samples was in the range of 25–60. The majority of the studies used the Pittsburgh Sleep Quality Index scale (PSQI). All studies arrive at the same conclusion that quality of sleep is deprived in cancer survivors.

Keywords: Cancer patients, Nursing personnel, Prevalence, Quality of sleep, Cancer survivors

INTRODUCTION

Human life does indeed depend on sleep. It helps to ensure our safety, productivity, and mental and physical wellness. Every person sleeps for roughly one-third of their lives, which means that if they live to be 75, they will have slept for 25 years. Both physical and mental health are significantly impacted by sleep, and getting more restful sleep can help one become better. The importance of getting enough sleep for one's health and wellbeing to remain optimal.

OBJECTIVES

- The current systematic review set out to:
- Understand the various studies' research approaches.
- To learn how cancer patients feel about the quality of their sleep.
- To be aware of research techniques used in data analysis.

METHODS AND MATERIALS

Literature review: From 2016 to 2019, a thorough review of the research that looked at cancer survivors' sleep quality was done. In 2019, the results of the literature review were checked and validated. The review covered theses and publications that were published in journals up until 2019. The databases PubMed, Google Scholar, Academia, Open Access, and Directory of Open Access Journals were used to conduct the literature search. The terms used in the literature search were "sleep," "sleep quality," "cancer patients," "cancer survivors," and "quality of sleep." The open-access publications were also found using the Google search engine. The researcher followed the PRISMA (preferred reporting items for systematic reviews and meta-analysis) standards for conducting the review.

Table 1: Characteristics of systematic review studies (2015-2019)

Sl. No.	Published Year	Journal name	First author	Age range (years)	Sample size/ Research design	Setting	Data collection tool	Result
1.	2019	<i>Journal of Supportive Care in Cancer</i>	Brainbridge	31-89	1,300/cross sectional study	Five states in Brazil.	<ul style="list-style-type: none"> Pittsburgh Sleep Quality Index Breast cancer collaborative Registry questionnaire 	Poor sleep quality was highly correlated with younger age, less physical activity, and higher weariness.
2.	2018	<i>NPJ Breast Cancer</i>	Black.A	>50	12,000/linear mixed effect model	Teenage cancer survivors	Women's Health Initiative Insomnia Rating Scale (WHIIRS)	Over time, both the quantity and quality of sleep have gotten worse.
3.	2018	<i>Journal of Adolescent and Young Adult Oncology</i>	Chircop D	13-26	202/self-reported Data	Teenage and young adult cancer survivors	<ul style="list-style-type: none"> Pittsburgh Sleep Quality Index Functional Assessment of Chronic Illness Therapy Fatigue Health-related quality of life 	Fatigue and poor sleep are two potential modifiable factors that affect HRQOL.
4.	2018	<i>Journal of Psycho-oncology</i>	Fitchett	29-65 years	90/survey	Breast cancer Survivors	Survey and neuro psychological testing	Supports relationship between perceived cognitive impairment and sleep quality in breast cancer survivors.
5.	2017	<i>Journal of Sleep Medicine</i>	Rlo	50-76	292/prospective study	Advanced cancer patients	Questionnaire measuring sociodemographic, sleep, and depression	In individuals with advanced cancer, a curved association between sleep duration and death was seen.
6.	2017	<i>Revista latino-americana de enfermagem</i>	Wall c	29-59 years	114/longitudinal Study	Hospital, Brazil	Pittsburgh Sleep Quality Index, Beck Depression Inventory, and Herth Hope Scale	The likelihood of poor clinical development was confirmed to be higher in women.
7.	2016	<i>Journal of Cancer</i>	Georget	49-66	256/clinical trial	Advanced stage Of cancer	The Eastern Cooperative Oncology Group (ECOG) performance status (PS) and the Pittsburgh Sleep Quality Index (PSQI), the Brief Fatigue Inventory, the MD Anderson Symptom Inventory (MDASI), and the Brief Profile of Mood States, respectively	Significant correlations were found between poor sleep quality and increased fatigue, symptom burden, and mood disturbance.
8.	2016	<i>Journal of Behavioral Neuroscience</i>	williams					66/—

Table 1: (Contd...)

Sl. No.	Year	Journal name	Firs author	(Year)	Research design	Setting	Data collection tool	Results
9.	2015	<i>Journal of Supportive carein Cancer</i>	Becken	50-80 years	Randomized control trial	Cancer center	Pittsburgh Sleep Quality Index (PSQI)	The majority of breast cancer patients experience sleep disturbances before starting chemotherapy, and the first few nights following chemotherapy are marked by fragmented sleep that interferes with sleep maintenance.
10.	2015	<i>Journal of Integrative Cancer Therapies</i>	Borimnejadi	51-72 years	Prospective Observational study	Cancer patients	Sleep quality [Pittsburgh Sleep Quality Index (PSQI)], daily sleepiness [Epworth Sleeping Scale (ESS)], and fatigue [Fatigue Severity Scale (FSS)]	<i>B. pinnatum</i> may be a suitable treatment for sleep problems of cancer patients.
11.	2015	<i>Journal of Psychoneuro Endocrinology</i>	Halldorsdor	40 years below	62/longitudinal research	Cancer survivors	The Medical Outcomes Study Sleep scale; the Beck Depression Inventory-II, physical activity levels on a 10-point scale, time of going to bed, time of awakening, and total sleep hours.	Normal cortisol control may be aided by good sleep habits, which is expected to lower early mortality in young breast cancer survivors.
12.	2015	<i>Journal of Sleep Medicine</i>	Edmonson	—	361/randomized trial research	Chemo-naive patients	Multivariate Cox proportional hazard model	Poor clinical outcomes are linked to subjective sleep issues.
13.	2015	<i>Asian Pacific Journal of Cancer Prevention</i>	Yankan	—	34,974/survey research	Fourth and fifth Korea National Health and Nutrition Examination Survey		Short sleep is very common, especially among Korean cancer survivors.

SELECTION OF STUDIES

Inclusion Criteria

- Articles in peer-reviewed journals
- Cancer patients
- Quantitative studies
- Articles authored in English language
- Databases with open-access theses
- Articles and dissertations published between 2016 and 2019

Exclusion Criteria

- Qualitative studies
- Review articles
- Pediatric cancer survivor
- 100 publications were discovered during the initial literature search. Information that was redundant or unrelated has been removed. 30 papers in all were chosen for in-depth and thorough reading. A total of 12 full-text papers were selected for this review.

RESULTS AND DISCUSSION

General Characteristics

The main objective of the study was to identify the research methodologies that different studies used. The research approach applied by various researchers is shown in Table 1. Five publications were published in 2015, and then there were four in 2016, two in 2017, three in 2018, and one in 2019. Breast cancer survivors have been the subject of several research and publications. The average age of the samples ranged from 25 to 60. The studies made use of survey, randomized control, prospective, and longitudinal study designs.

Sleep Quality Assessment

The second objective was to determine how cancer patients rated the quality of their sleep. From a total of 15 investigations, seven studies that employed PSQI and two studies that used the Epworth Sleepiness Scale were chosen.

Data Analysis Methods

The third goal of the study was to gain knowledge about the data analysis techniques used in the investigation. Most studies used frequency, percentage, mean, and standard deviation for continuous variables. For categorical variables, the Chi-square test and the t-test were employed.

CONCLUSION

In this review of the research, the majority of the problems are cancer survivors' poor sleep quality and difficulty falling asleep. As sleep plays a crucial role in one's health and wellbeing, cancer patients should receive treatment for sleep deficiency. The majority of the studies in this systematic review employed survey research as their primary research design and used high sample sizes to draw generalizations. Despite the fact that cancer survivors have poorer sleep quality, there is presently a dearth of reliable information to evaluate the results. To better comprehend the effects of sleep deprivation, studies using an experimental study design and a probability sample technique should be conducted.

REFERENCES

1. Beverly CM, Naughton MJ, Pennell ML, Foraker RE, Young G, Hale L, et al. Trends in sleep quality and duration following breast cancer diagnosis. *Nat Partner J Breast Cancer* 2018; 4(15):13–14. DOI: 10.1038/s41523-018-0065-7.

2. Forman J, Fisher A, Hough R, Gregory A, Pugh G. Sleep quality, fatigue and quality of life among teenage and young adult cancer survivors. *J Adolescent Young Adult Oncology* 2018; 7(4):43–44. DOI: 10.1089/jayao.2018.0004.
3. Henneghan AM, Carter P, Stuijbergan A, Parmelee B, Kessler S. Relationship between self-reported sleep quality components and cognitive functioning in breast cancer survivors up to 10 years following chemotherapy. *J Psychooncol* 2018; 27(8):18–20. DOI: 10.1002/pon.4745.
4. Collins KP, Geller DA, Antoni M, Donnell DMS, Tsung A, Marsh JW, et al. Sleep duration associated with survival in advanced cancer patients. *J Sleep Med* 2017; 4(1):23. DOI: 10.1016/j.sleep.2016.06.041.
5. Mansion-Schlosser TC, Coelom MF. Association between poor clinical prognosis and sleep duration among breast cancer patients in a hospital at Brazil. *Int Nursing Index* 2017; 25(2):13–15. DOI: 10.1590/1518-8345.1826.2899.
6. George GC, Iwuanyanwu EC, Anderson KO, Yusuf A, Sinner RG, Piha-Paul SA. Sleep quality and its association with fatigue, symptom burden, and mood in 256 patients with advanced cancer in a clinic for early-phase oncology clinical trials. *Am Soc Clin Oncol* 2016; 10(2): 38–39. DOI: 10.1002/cncr.30182.
7. Hoyt MA, Bower JE, Irwin MR, Keidrich MR, Stanton AL. Mechanistic role and relationship of cortisol on Sleep quality and depressive symptoms after prostate cancer. *J Behav Sci* 2016; 13(3):52–54. DOI: 10.1037/bne0000107.
8. Innominate PF, Lim AS, Pales’ O, Clemons M, Trudeau M, Eisen A. Effect of melatonin on sleep and quality of life in patients with advanced breast cancer. *J Support Care Cancer* 2016; 24(3):27–30. DOI: 10.1007/s00520-015-2883-6.
9. Jung D, Lee KM, Kim WH, Lee JY, Kim TY, Im SA. Poor sleep quality with chemotherapy induced nausea and vomiting in patients with breast cancer. *J Psychosom Med* 2016; 78(8):22–25. DOI: 10.1097/PSY.0000000000000372.
10. Beck SL, Berger AM, Barsevick AM, Wong B, Stewart KA, Dudley WN. Sleep quality and quantity prior to and in the first three nights after initial chemotherapy for breast cancer. *J Support Care Cancer* 2015; 18(6):15–17. DOI: 10.1007/s00520-009-0662.
11. Hossain TA, Simões-Wüst AP, Müller-Hübenthal B, Pittl S, Kuck A, Meden H. Sleep quality of cancer patients during treatment with *Bryophyllum pinnatum*. *J Integr Cancer Thera* 2015; 14(5):33–34. DOI: 10.1177/1534735415580680.
12. Hsiao FH, Kuo WH, Jow GM, Chang KJ, Yang PS, Lam HB. Habitual sleep wake behaviors and lifestyle as predictors of changes in diurnal cortisol patterns during the 8 month follow up period for young breast cancer survivors’ *Psycho Neuro Endocrinol* 2015;8(1):30–33. PMID: 25591116.
13. Spiegel DD, Ulusakarya PFIA, Giacchetti S, Bjornson GA, Levi F. Subjective sleep and overall survival in chemotherapy-naïve patients with metastatic colorectal cancer. *J Sleep Med* 2015; 16(3):27–30. DOI: 10.1016/j.sleep.2014.10.022.
14. Yoon HS, Yang JJ, Song M, Lee HW, Lee Y, Lee KM. Prevalence of short sleep duration and its correlation among cancer survivors in Korea. *Asian Pacific J Cancer Prevent* 2015; 16(11):41–44. DOI: 10.7314/APJCP.2015.16.11.4705.