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Effectiveness Of Cognitive Restructuring on Quality of Sleep In Patients With Cancer: A Quasi Experimental Study.

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ABSTRACT

Background: Sleep deprivation can increase the risk of developing certain types of cancer.
It not only affects cancer progression but also treatment efficacy.
Aim: The study's goal was to determine the effectiveness of cognitive restructuring on sleep quality in patients with cancer.
Methods: It was a quasi-experimental study in which 144 patients with cancer of various types were chosen using a purposive sampling technique. The PSQI was used to assess sleep quality. The evaluation was conducted both before and after cognitive restructuring.
Results: The study found that 68 (94.4 percent) of patients in the study group and 69(95.8 percent) of patients in the control group had poor sleep quality, while only 4(5.6 percent) of patients in the study group and 3(4.2 percent) of patients in the control group had good sleep in the pretest. The mean PSQI score of the study group before intervention is 12.26 and SD4.17, while the control group's score is 12.54 and SD2.89. The mean score of the study group was (7.44) with a standard deviation of 2.49 and the mean score of the control group was (12.19) with a standard deviation of 3.04. After cognitive restructuring, the mean difference in the improvement of sleep quality between two groups was found to be statistically significant (p=0.001).
Conclusion: Our research found that cognitive restructuring is the most effective psychological intervention to improve sleep quality.

Keywords: Cognitive restructuring, Quality of sleep, cancer, oncology,

Introduction

Background: Cancer is the most common of death in the majority of countries.
Globally, the number of cancer cases is increasing.[1] In 2020, there will be nearly 10 million deaths.[2]It is estimated that by 2030, there will be approximately 21.4 million new cancer cases per year, with approximately 13.3 million cancer patients expected to die as a result of the disease. A total of 1.1 million new cases were estimated in India, indicating that India, as a single country (out of 184), contributes 7.8 percent of the global cancer burden.[1] Cancer is a multisymptomatic disease with physical, psychological, social, spiritual, and emotional ramifications.[3] Sleep is essential to all human functioning and encompasses a broad array of physiological and behavioral processes; disruption in one or more of these processes can result in a variety of symptoms of poor sleep that can occur singly or in combination.
Based on cancer and treatment status, disturbed sleep is rated the second most bothersome symptom in patients with cancer. Sleep problems have been linked to poor healing, an increased risk of cancer recurrence, medication misuse and abuse, poor relationships, and higher health-care costs. Poor sleep is a well-known issue in patients with cancer from the time of diagnosis until the end of life.[4] Sleep disturbances affect nearly 30 percent to 75 percent of newly diagnosed patients with cancer. According to surveys, sleep complaints in cancer patients included difficulty falling and staying asleep, as well as frequent and prolonged nighttime awakenings.
Patients reported these issues both before and during treatment. According to a study that compared cancer patients to psychiatric patients and controls, 62 percent of cancer patients reported moderate to severe sleep disturbance. According to one study, 72 percent of patients with advanced cancer reported sleep disturbances. The most common concerns were trouble getting asleep (40%) and remaining asleep (63%) as well as a lack of energy in the morning (72 percent). Furthermore, 19% of cancer patients said they had difficulty sleeping prior to their diagnosis.[5] Sleep is a recurring multidimensional phenomenon with distinct and measurable biological, behavioral, perceptual, and temporal characteristics. Sleep characteristics reflect underlying behavioral and physiological processes that influence cancer biology, recovery, quality of life, morbidity, and mortality. Cancer therapies, cancer symptoms, and psychological and behavioral stressors associated with cancer and its treatment all contribute to sleep disruption, which can lead to

morbidity, mortality, and impairments in function and quality of life.[6]

Fortner BV etal described sleep in a diverse sample and investigated the relationship between sleep disruption and health-related quality of life in breast cancer patients. Chemotherapy and radiation therapy were investigated as predictors of sleep disturbance. They discovered that 61% of breast cancer patients had significant sleep problems. Patients with breast cancer who had significant sleep problems had greater deficits in many aspects of health-related quality of life.[7] Another source of sleep disruption is pain medications. Opioids are commonly prescribed to patients with cancer for pain relief. Opioids frequently cause sedation. Opioids reduce REM and slow-wave sleep, according to a recent study by Dimsdale et al. As a result, rather than improving sleep, opioids may contribute to sleep disruptions in patients with cancer suffering from chronic pain.[5]

Yilmaz M. wanted to look into the prevalence of sleep disorders in women a year after finishing chemotherapy and radiotherapy. The Pittsburgh Sleep Quality Cognitive restructuring for improving sleep quality Index (PSQI) was used to assess sleep disorders. The researcher discovered that 60 percent of the participants (PSQI = 5) had poor quality sleep (P > 0.05). According to the study, poor sleep quality and insomnia affect 60% of breast cancer patients. [8]

MystakidouK, etalon 102 advanced patients with cancer were studied to determine the relationship between sleep quality and pain, depression, and hopelessness.

Researchers discovered that hopelessness (P=.003), "pain interference with mood" (P.0005), and strong opioids (P=.010) influenced patients' sleep quality (PSOI). Furthermore, they discovered a significant relationship between PSQI and opioids (P=.013), hopelessness (P=.035), and pain interference with mood (P=.004).[9] A total of 102 patients with stage IV cancer were studied for sleep quality and its relationship with other instruments used to measure pain and quality of life.

In this study, Mystakidou K etal demonstrated that these subjects were prone to poor sleep quality, and that various demographic variables and clinical features of the cancers had no effect on sleep quality. This study discovered a link between sleep quality, quality of life, pain, and opioids.[10] In another study, Mystakidou Ketal examined the relationship between sleep quality, pain, psychological distress, cognitive status, and post-traumatic experience in 82 advanced cancer patients in a palliative care unit. There were significant associations between PSQI and the SF-12, Quality of Life Instrument (P = 0.0005), depression, and hopelessness (P = 0.003).

They discovered that post-traumatic experience and quality of life are the best predictors of sleep quality.[11] Using the Pittsburgh Sleep Quality Index (PSQI), 96% of patients were classified as "poor sleepers." Psychological symptoms interfere with sleep quality, treatment process, coping ability, and overall quality of life. In a sample of 119 chemotherapy-treated lung cancer patients.

Papadopoulos etal hypothesized the extent to which psychological symptoms, coping strategies, and social support interfere with sleep quality and whether they mediate the relationship between sleep quality and fatigue. Poor sleep quality was associated with anxiety, stress, and positive coping in 58.2 percent of people. They concluded that higher psychological burden predicts sleep disturbances and contributes to increased fatigue.[12]

A prospective study of 292 patients with advanced cancer looked at the types and rates of sleep problems, as well as whether they were related to survival. In this study, Collins K P etal discovered that 59% of patients reported poor sleep quality; 43% reported sleeping 6 h and 2% reported sleeping 10 h; 40% reported sleep latency of 30 minutes or more; and 80% reported poor sleep efficiency. Depressive symptoms were related to shorter sleep duration (p = 0.02). Researchers discovered a link between short and long sleep duration and increased mortality. The researchers proposed routine screening and the development of evidence-based treatments for sleep disorders in oncology.[13]

Akman T etal investigated the prevalence of sleep disorders and their impact on patients with cancer quality of life in 314 patients. The Pittsburgh Sleep Quality Index (PSQI) was used to assess sleep quality. In this study, 127 (40.4 percent) patients had global PSQI scores greater than 5, indicating poor sleep quality. PSQI scores had no statistically significant relationship with

sexuality, marital status, cancer stage, or chemotherapy type (P > 0.05), but patients with bone and visceral metastasis had significantly lower PSQI scores (P = 0.006). The researchers concluded that the PSQI questionnaire could be used to assess sleep disorders in cancer patients.[14] Chen ML, Yu CT, and Yang CH investigated the effects of sleep disruptions on quality of life and functional performance status while controlling for pain, depression, fatigue, and dyspnea.

The mean PSQI global scores for patients on days with chemotherapy (6.86+/-3.83) and days without chemotherapy (6.23+/-3.47) were both higher than the cut-off of 5, indicating poor sleep quality during the fourth cycle of chemotherapy. Sleep disruption was associated with impaired cognitive function (EORTC) and lower functional status. According to the findings of this study, clinicians should routinely assess sleep problems in lung cancer patients.[15]

Le Guen Y etal investigated whether sleep quality and daytime alertness are impaired in patients with newly diagnosed LC in one of the studies. The study included a total of 29 outpatients. The study found that LC patients had higher PSQI (9.6+/-3.7 versus 5.6+/-3.2; p0.001) and ESS (8.6+/-3.7 versus 5.6+/-3.2; p=0.01) than NC patients, indicating poorer sleep quality and excessive daytime sleepiness. The physical and mental components of the SF-36 score were both lower (p0.001) in LC patients, indicating a lower quality of life. Wrist actigraphy data revealed that LC patients had significantly lower sleep efficiency and fragmentation during the night, as well as lower mean activity during the day. Researchers came to the conclusion that patients with newly diagnosed LC and poor performance status have significant sleep disturbances, excessive daytime sleepiness, and poor quality of life.[16]

In a census-based cross-sectional study, Imanian M, Imanian M, and Karimyar M. investigated sleep quality and fatigue in 115 patients with breast cancer undergoing chemotherapy. According to the study, 57.4 percent, 20.9 percent, and 21.7 percent of participants experienced moderate (4-6.9), mild (0.1-3.9), and severe (7-9.9) fatigue, respectively. The participants' average sleep quality score was 14.063.06, with a maximum and minimum of 7 and 21. This study also discovered that there is a link between fatigue and sleep quality. The researchers concluded that these patients have varying degrees of sleep disorders and fatigue. Due to the lack of attention paid to this issue in the medical field, they suggested that more detailed studies are needed to improve the quality of sleep and reduce fatigue in these patients.[17]

Pai A, Sivanandh B, and Udupa K discovered that (32.6 percent) of patients had impaired daytime functioning due to sleepiness in a cross-sectional study of 92 patients with cancer.

(57.6 percent) of patients had a low overall PSQI score. Furthermore, the study found no correlation between PSQI scores and disease stage or previous treatment. According to the findings of this study, female patients with cancer are more prone to sleep disorders.[18]

Belloumi N etal discovered 15% of patients with poor sleep quality in a prospective study on 64 patients with stage III or IV nonsmall-cell lung cancer. Before chemotherapy, the most common complaints were daytime sleepiness (70 percent) and nocturnal arousals (100 percent).

45 percent of all patients had poor sleep quality following chemotherapy. The most common complaints were sleep latency extension (69%), daytime sleepiness (98%), and nocturnal arousals (69%). (100 percent). They also discovered that delayed diagnosis confirmation (p = 0.05), delayed treatment onset, depressive mood, and anxious mood were all predictive factors of sleep disturbance. Furthermore, a significant correlation between sleep quality and shortened diagnosis and treatment delay was discovered, but no correlation was found between sleep quality and socio demographic parameters, clinical parameters, and treatment procedure factors.[19]

Kuo HH etal investigated the quality of sleep and associated factors in patients with breast cancer undergoing chemotherapy. According to sleep logs, the average number of awakenings per night was 2.2 +/- 1.6, and the total time spent awake during these episodes was 47.8 +/- 26.1 minutes, according to Actiwatch. Actiwatch measured sleep efficiency in the active phase to be 82.1 +/- 9.4 percent below the normal limit. In the active phase, ESS revealed mild sleepiness (6.0 +/- 3.5). The study found that patients with breast cancer during the active phase of

chemotherapy had poor sleep quality and daytime sleepiness.[20]

Dean GE,etal discovered poor nocturnal sleep and QOL in 29 NSCLC patients prior to treatment. They also discovered that objective sleep duration and sleep efficiency were positively related to FACT-L scores, whereas objective sleep latency and wake after sleep onset were negatively related. FACT-L scores were significantly lower in sleepy patients than in non-sleepy patients. Routine screening for sleep disturbances and referral to a sleep specialist for diagnosis and treatment were suggested in the study.[21]

In order to determine the quality of sleep, the causes of sleep disturbances, and the strategies for overcoming sleep disturbances in 175 cancer patients, Aslan O etal discovered a sleep quality score of 9.46 4.669. According to this study, the most common reasons given by patients for sleep disturbances were cancer diagnosis (61.71 percent), adverse effects of therapy (58.85 percent), and financial problems (36.00 percent). The majority of patients (83.82 percent) used no pharmacologic strategies such as lifestyle practices (64.25 percent), behavioral practices (21.25 percent), and biologic treatments (4.34 percent).Female patients' total PSQI scores were significantly higher than male patients', indicating poor sleep quality (Z=3.189; p=0.001).There was no statistically significant difference between age, education, illness duration, cancer types, and total PSQI scores (p>0.05).[22]

Owen DC etal compared the subjective sleep quality of a group of patients with cancer undergoing treatment to a normative sample of healthy comparison subjects in one of the Secondary analyses. This study discovered lower overall sleep quality, as well as more daytime dysfunction. Specific sleep disturbances, such as snoring and dyspnea, were not different between groups.[23]

Beck SL etal discovered that 66% of women had poor sleep in the month preceding chemotherapy.Three nights of actigraphy data revealed a wide range of sleep experiences, with an average of 10 awakenings and 61 minutes awake after sleep onset per night.
The first night's sleep was the worst.They also found no statistically significant link between self-reported poor sleep and actigraphy sleep measures.Furthermore, women with poor sleep at baseline (global PSQI >5) had significantly lower (p 0.001) physical (PCS) and mental (MCS) health status.[24]

Shuman AGetalto identified sleep quality predictors in 457 head and neck cancer patients.
Pain, xerostomia, depression, the presence of a tracheotomy tube, commodities, and being younger were all statistically significant predictors of poor sleep one year after a diagnosis of head and neck cancer (P.05). Tobacco use, problem drinking, and female sex were all marginally significant (P.09). The type of treatment (surgery, radiation, and/or chemotherapy), primary tumor site, and cancer stage had no effect on 1-year sleep scores. Study suggested Pain, xerostomia, depression, smoking, and problem drinking reduction strategies may be warranted not only for their inherent value, but also for improved sleep and quality of life.[25]

Fontes F, etal investigated the relationship between different breast cancer treatments and sleep quality one year after diagnosis in a cohort of 502 newly diagnosed breast cancer patients.
They looked at 60.2 percent of patients who had poor sleep quality before breast cancer treatments, particularly those who had anxiety or depression. Radiotherapy increased the risk of poor sleep quality at one year, with a higher risk in those who received chemotherapy.[26]

Tian J, Chen GL, and Zhang HR investigated the prevalence and factors associated with poor sleep quality in 76 stage I and II cervical cancer patients as well as the general population.
Furthermore, the difference in PSQI scores before and after adjuvant therapy was significant (P = 0.007) in patients with cervical cancer. The factors associated with poor sleep quality were numerous, and exercise was found to be a protective factor (P =0.019). They concluded that the prevalence of poor sleep quality in stage I and II cervical cancer patients was roughly twice that of women in the general population. Cancer treatment had a significant impact on sleep quality. Poor sleep quality was associated with psychological distress, depression, anxiety, and a high grade of CIPN during adjuvant therapy.[27]
Another secondary analysis study Sharma N etal also sought to ascertain I the prevalence of sleep

problems among cancer center outpatients and (ii) the relationship between medical variables, emotional distress, and pain in 2862 cancer patients. Sleep issues were reported by 30.2 percent of the patients in the study.They were common in both active cancer patients (34.5 percent) and cancer survivors (28.0 percent). This study discovered a strong link between pain and emotional distress.[28]

Sleep deprivation may influence cancer development and treatment responses.

It is also linked to recovery and quality of life in patients with cancer, survivors, and caregivers, and recent research has begun to show that sleep-promoting interventions can help.

Despite the importance of sleep in cancer prevention and treatment, as well as the availability of numerous tools for measuring sleep quality and quantity, sleep measurements are underutilized in cancer research.[6]

Cognitive restructuring can help with arousing thoughts and beliefs in these patients.

They may have dysfunctional sleep thoughts, making it difficult for them to sleep.

Cognitive restructuring techniques would assist them in identifying, assessing, and challenging their own sleep beliefs. Simply put, cognitive restructuring is divided into four steps:

(1) recognizing negative or irrational thoughts or ideas; (2) recognizing thinking errors involved in negative or irrational thoughts or ideas; (3) disputing and challenging negative or irrational thoughts or ideas; and (4) developing an alternative, rational thought for the future based on actual evidence. patients with cancer may have dysfunctional sleep thoughts.

Patients catastrophize or overestimate their thoughts, and they associate these negative thoughts about sleep with the consequences of the disease and the treatment process.

Cognitive therapies can reframe these negative thoughts into constructive and realistic ones in order to improve sleep quality. As a result, the purpose of this study was to assess the impact of cognitive restructuring on sleep quality in patients with cancer.

Objectives:

1. **To assess quality of sleep in patients with cancer**
2. **To assess effectiveness of cognitive restructuring on quality of sleep in patients with cancer**

Materials and methods:

A total of 144 eligible patients were evaluated at the SKIMS tertiary care center in Srinagar, Jammu and Kashmir, for medical oncology.

The current study employs a quasi experimental two-group pretest-posttest design.

Patients over the age of 18 admitted to the medical oncology department of SKIMS tertiary care center in Srinagar, Jammu and Kashmir, comprise the statistical population in this study.

Patients were divided into experimental and control groups (72 for the experimental group and 72 for the control group). Participants had to be over the age of 18 to participate.

Patients with various treatment modalities were required to fully comprehend and respond appropriately to the posed questions. Administrative permission was obtained from the medical superintendent of the Sheri Kashmir Institute of Medical Sciences and the head of Oncology.

Prior to the study.

The Ethics Committee of SKIMS granted ethical clearance.

The study subjects were identified by going through patient records and using a checklist with the assistance of staff nurses.

Purposive sampling was used to select study subjects who met the inclusion criteria.

The subjects were informed of the study's purpose and assured of the confidentiality of their information.

The sample was collected with informed consent.

The study used 144 samples.

The samples were chosen based on the inclusion criteria.

The interview method was used to collect data.

Patients receiving psychotherapy, those with cognitive impairment, those who were critically ill, and those with sensory deficits were all excluded.

Instrument :

Pittsburgh Sleep Quality Index (PSQI)
The Pittsburgh Sleep Quality Index (PSQI) is a self-reported standardized tool that evaluates sleep quality over a 1-month period. The measure is made up of 19 individual items that combine to form 7 components that result in a single global score.[30] Subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction in the previous month are among the seven sleep domains.
The responses are scored on a 0 to 3 scale, with 3 representing the negative extreme on the Likert Scale. A "poor" sleeper has a global sum equal to or greater than five. The current study made use of the tool's standardized Kashmiri version. With a Cronbach alpha of 0.83, it has a high internal consistency. PSQI is permitted to be used for non-commercial academic research, so it was available for free.

Data collection procedure:

Administrative permission was obtained from the medical superintendent of the Sheri Kashmir Institute of Medical Sciences and the head of Oncology.
Prior to the study.
The Ethics Committee of SKIMS granted ethical clearance. The study subjects were identified by going through patient records and using a checklist with the assistance of staff nurses.
Purposive sampling was used to select study subjects who met the inclusion criteria.
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Intervention: The intervention was cognitive restructuring in six steps using five columns. For 6 days, two patients from each group were chosen for sessions.
Data was collected from the experimental group first, followed by the control group.
Sessions lasting 45 minutes were given to the experimental group on a daily basis for 6 days.
The control group only received routine care.
After one week, data was collected from both the experimental and control groups using the same tools.

Data analysis: The collected data was compiled and entered into a spreadsheet (Microsoft Excel) before being exported to the SPSS Version 20.0 data editor (SPSS Inc., Chicago, Illinois, USA).
Continuous variables were expressed as mean standard deviation, and categorical variables were summarized as frequencies and percentages.
Bar diagrams were used to present the data graphically.
For comparing continuous variables, the Student's independent t-test was used.
The Chi-square test was used to compare categorical variables.
A statistically significant P-value of less than 0.05 was considered.

Results
According to the study's findings, 68 (94.4 percent) of patients in the study group and 69(95.8 percent) in the control group had poor sleep quality, while only 4(5.6 percent) of patients in the study group and 3(4.2 percent) in the control group had good sleep.
The study group's pretest mean score was (M=12.26), while the control group's mean score was (M=12.54). The groups were comparable, with no significant differences. (See Table 1)
PQSI was used to compare the groups. The outcomes are displayed in (Table 2).
As shown in Table 2, analysis revealed a significant difference between the study and control groups (p=0.001). The mean score of the study group was (7.44) with a standard deviation of 2.49 and the mean score of the control group was (12.19) with a standard deviation of 3.04.
After cognitive restructuring, the mean difference in the improvement of sleep quality between two groups was found to be statistically significant (p=0.001).

Discussion
The current study sought to determine the efficacy of cognitive restructuring on sleep

quality in cancer patients. PQSI was used to evaluate sleep quality. This scale was practical and effective for administering to patients. Sleep disturbances have a significant impact on patients' physical and mental health.

According to the study's findings, 68 (94.4 percent) of patients in the study group and 69(95.8 percent) in the control group had poor sleep quality, while only 4(5.6 percent) of patients in the study group and 3(4.2 percent) in the control group had good sleep. (See Table 1)

The study's findings are supported by Yilmaz M.'s study, which aimed to investigate the prevalence of sleep disorders in women with breast cancer using the Pittsburgh Sleep Quality Index (PSQI). The researcher discovered poor quality sleep (60 percent) of the participants (global score =5) and concluded that poor sleep quality and insomnia are a highly prevalent problem in non-metastatic breast cancer patients.[8]

In another cross-sectional study, Pai A, Sivanandh B, and Udupa K discovered that 53 (57.6 percent) of patients had poor total PSQI and 39.1 percent of patients reported sleeping less than 6 hours (32.6 percent).[18]

Sleep quality not only influences cancer progression and treatment, but it also causes a variety of psychological issues. which Nishiura M, Tamura A, Nagai H, Matsushima E.2015 discovered in their study. They discovered that 56 percent of lung cancer patients had sleep disturbances (AIS score 6) and that patients with sleep disorders had 60 percent of psychological distress.[29]

Cognitive restructuring proved to be an effective treatment for cancer patients' sleep quality.

Sleep quality improves following intervention. The current study revealed a significant difference between the study and control groups (p=0.001), with the mean score of the study group (7.44) and SD=2.49 and the control group (12.19) and SD=3.04. After cognitive restructuring, the mean difference in the improvement of sleep quality between two groups was found to be statistically significant (p=0.001). Abbasi et al. supported the current study and analyzed 72 women with multiple sclerosis in a randomized controlled clinical trial.

Using the PSQI to assess sleep quality, they discovered a significant difference (P0.001) between the mean sleep quality scores of the control and intervention groups immediately after one month.

Similarly, Garland S N etal discovered in a randomised trial that CBT-I improved sleep quality (P.001) and dysfunctional sleep beliefs (P.001), while both groups experienced reduced stress (P.001) and mood disturbance (P.001).[30]

Ozkaraman and colleagues discovered a lower PSQI mean score in a randomised controlled study when compared to the control group. PSQI in the intervention group was 5.02.32, while in the control group it was 6.503.26). The mean score changed significantly.[31]

Dayapolu N, Tan M investigated the impact of sleep health trainings and behavioral therapy on the sleep quality of some Japanese workers. The study found that the group that received cognitive therapy had significantly better sleep quality than the group that only received sleep health trainings.[32]

As a result of the findings of this study, it is clear that cognitive restructuring is critical in improving sleep quality among patients with cancer. Cognitive restructuring sessions assisted patients in exploring their thoughts, feelings, and cognitive distortions. Cognitive restructuring not only helped patients rule out sleep pattern misconceptions, but it also changed their belief system by modifying negative thoughts about sleep. Furthermore, using these techniques for generating new rational thoughts may aid in improving their sleep quality by improving intellectual sleep quality.

Limitations:

Several limitations of this study should be considered when interpreting

the results.limitations of the study are as follows:

- Non availability literature of previous studies on present research study,only studies with combinations of other therapies could be found.
- Patients were lost for follow up due to lack of interest or loss of contact hence, Attrition of the subjects were unavoidable.
- Limited sessions as per the days were given, number of sessions could be increased from days to weeks i.e one session for 1 0r 2 weeks with followup protocol.

- Psychological problems like ,anxiety and depression could not be assessed, since these studies have strong relationship with quality of sleep as included in many studies
- Behaviour component of treatment was not included in study

Conclusion

Although there has been progress in understanding the importance of sleep and its relevance to cancer care, there is still a need to improve scientific knowledge about the relationships between sleep disruption, cancer biology, and cancer experience.

Improved understanding of these relationships may aid in the development and implementation of interventions to promote sleep and improve sleep-related outcomes in this large group of patients. However, obstacles to achieving this goal include a lack of sleep discussion between health care providers and patients, as well as a lack of sleep treatments with proven efficacy.

There is a lack of familiarity with the impact of sleep on cancer, as well as a lack of knowledge among oncology clinicians and oncology scientists about the significance of sleep and the tools available for measuring its characteristics. More research is needed to determine the causes of sleep disturbances in cancer patients, as well as the effects of pharmacologic and non-pharmacologic interventions on sleep and daytime functioning.

Recommendations

This study made significant contributions to understanding that sleep disruptions are common in patients with cancer, making effective management difficult.

However, because of this feature, when an intervention improves one symptom, it improves others.As a result, this study strongly suggests intervention, either psychological or medical.

Despite the fact that this study only looked at sleep quality, it recommends further research into and examination of various types of sleep disorders.

Healthcare professionals should assess cancer patients' sleep quality and solve the problem holistically in order to provide a supportive environment during the caregiving process.

Furthermore, interventional studies on sleep disturbance in cancer patients are required.

Implications for nursing practice: Nurses must evaluate patients' sleep, including its impact on quality of life and functional status.

An understanding of normal sleep, sleep pathology, and the factors that can cause sleep disruption provides a context for nurses to interpret and evaluate sleep complaints in their patients.

Interventions must be implemented to control these symptoms.

Such implementation is critical for improving affected individuals' quality of life and influencing treatment efficacy and clinical outcomes.

As a reference professional engaged in care that prioritizes patient autonomy and centrality, nurses are a determining factor in the achievement of these goals, and they can develop and implement preventive and treatment care.

Research Implications

In addition to understanding the strength of associations between factors and sleep disturbances in patients undergoing various types of treatment, prevention and health promotion interventions based on methodologically rigorous studies are critical.

The knowledge gap about the subject of this review highlights the need for sleep quality researchers to reflect on the importance of conducting new studies that improve and maintain the health and wellbeing of individuals, particularly those with disadvantageous conditions.

It is necessary to identify common aetiological factors underlying sleep disturbances and other symptoms, as well as to conduct longitudinal studies to investigate their temporal relationships in cancer patients.

Furthermore, research into the association of other symptoms with poor sleep quality is required.

CBT and other relaxation studies can be used to improve sleep quality.
Comparative studies can be conducted between cancer types as well as between two or three hospitals.

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Table 1: Pittsburgh Sleep Quality Index (PSQI) of study and control groups before cognitive restructuring

PSQI	Study Group		Control Group		P-value
	No.	%age	No.	%age	
Good (0-5)	4	5.6	3	4.2	0.641
Worst (6-21)	68	94.4	69	95.8	
Total	72	100	72	100	
Mean±SD	12.26±4.17		12.54±2.89		

Table 2: Pittsburgh Sleep Quality Index (PSQI) of study and control groups after cognitive restructuring.

PSQI	Study Group		Control Group		P-value
	No.	%age	No.	%age	
Good (0-5)	16	22.2	4	5.6	<0.001*
Worst (6-21)	56	77.8	68	94.4	
Total	72	100	72	100	
Mean±SD	7.44±2.49		12.19±3.04