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Sleep Quality and Related Factors in Cancer Patients: A Systematic Review

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Abstract

Introduction and objectives: Sleeping is among vital needs of cancer patients to achieve better therapeutic outcomes and confront the disease. Due to the important role of sleeping in cancer patients, current systematic review is conducted to investigate sleep quality of cancer patients in Iran.

Method: Relevant studies were extracted from SID, MAGIRAN, IRANDOC, SCOPUS, PUBMED, WEB OF SCIENCE databases using Cancer, sleep, sleep quality, sleep disturbance key words without time limitations. Then, the extracted data were reported in tables.

Results: 6 studies were assessed in the systematic review collectively. Results of the extracted data from these studies showed that approximately 66.88 percent with an average of 8.99 suffer sleep disorders.

Conclusion: Sleeping plays an important role in improvement of therapeutic situation and prevents from worsening of cancer complications. Consequently it is suggested that necessary actions and instructions be considered in planning for these patients to enhance sleep quality.

Keywords: Cancer; Sleep; Iran; Systematic review

Introduction

Sleeping in cancer patients is one of the research priorities in oncology nursing and national nursing researches [1]. Prevalence of sleep disorders in cancer patients is reported to be between 24 and 95 percent [2]. Factors including age, gender, progression and type of cancer, type of treatment can affect sleep disorder [3]. Lack of attention to sleep disorders in these patients causes higher chance of disease recurrence, lower productivity, more physical, cognitive, psychological symptoms such as concentration disorder, fatigue, pain, anxiety, irritability, depression, illusion and increasing costs of health care and patient's ability to confront the disease [1,3-5]. Sleep disorders is considered as one the major concerns of cancer patients. Knowing the nature and prevalence of sleep disorders in cancer patients may be a base for future approach of their supportive health care [6]. Consequently, current study is conducted to evaluate the prevalence of sleep disorders in cancer patients in Iran for further plaining to resolve this problem.

Material and Methods

In this study, searching and data analysis steps were done according to PRISMA standard [7]. Thus, after determining study questions, study protocol was codified. Iranian databases, including SID, IRANDOC, MAGIRAN, as well as international databases, including PUBMED, SCOPUS, WEB OF SCIENCE, were searched using Cancer, Sleep, Sleep Quality, Sleep Disturbance key words.

Inclusion and exclusion criteria

Study inclusion criteria included original research studies with English abstracts and access to article text. Exclusion criteria were lack of access to article text or lack of English abstract.

Study selection

48 articles were found in the primary search. After removing copied articles, 25 studies entered screening step. 16 articles were removed in screening step due to lack of fulfilling inclusion criteria and evaluating sleeping quality and disorders and other areas. Among the 9 articles left, one article was excluded for lack of access to article text, one for low quality of study, and one for lack of English abstract. Finally, 6 articles were included in this study for analysis (Figure 1).

Quality evaluation of articles

STROBE check list was used to evaluate quality of articles [8]. This checklist includes 28 parts which evaluates articles regarding their methodology including sampling method, variant measurement, data analysis, and study objectives. Score of this checklist ranges from 0 to 40 and a score below 16 determine low quality study, 16 to 29.9 medium quality study, and score above 30 high quality study [9]. Studies with score above 16 entered this study (Figure 1).
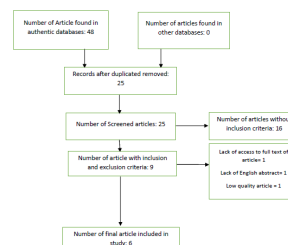

Figure 1: Demographic representation of sleep quality.

Data extraction

Article data extraction were performed based on first author name, year, city, sampling method, sample size, type of questionnaire, mean

age, mean sleep disorder among patients and relevant factors to sleep disorder of the entered studies.

Tools for data collection

Demographic data questionnaire and Petersburg sleep quality questionnaire were used for data collection. Reliability and validity of theses questionnaire has been evaluated in many studies (Table 1).

Results

This study is performed on 6 article with a total sample size of 624 patients with mean age of 40.61 years. Mean prevalence of sleep disorders were 8.99 which shows a high prevalence of sleep disorders in these patients. Most studies assessing sleep disorders belonged to breast cancer (3 articles) and leukemia (2 articles). Highest prevalence of sleep disorders was observed in Khoramirad et al study on breast cancer (mean=11.73) while lowest prevalence of sleep disorders was observed in Jalali et al. study on patient undergoing chemotherapy (mean=6.44). Moreover, highest rate of sleep disorder was observed in Bagheri Nesami et al. study with 89% and lowest rate of sleep disorder was observed in Jalali et al. study with 51.4%. Eghtedar et al. did not report prevalence of sleep disorders in their studies which was calculated to be 68.55% according to data in Table 2 which is a high prevalence of sleep disorder among cancer patients (Table 1).

Used Questionnaire	Mean disease dotation	Reliability and Validity of questionnaire	Type of Cancer	Sample size	Data collection method	Type of study	Province	Year	First author	Reference
PSQ	19.9	Cronbach alfa=0.84 and 0.88	Breast cancer	103	Interview	Cross sectional	Urmia	2016	Eghtedar et al.	[10]
PSQ	27	Sensitivity over 85%	Breast cancer	101	Interview	Cross sectional	Esfahan	2016	Habibi et al.	[11]
PSQ	-	Cronbach alfa=0.83	Leukemia	100	Interview	descriptive-analytic	Sari	2016	Bagheri Nesami et al.	[12]
PSQ	18	ICC = 84%	Breast cancer	80	Interview	Cross sectional	Qom	2012	Khoramrad et al.	[13]
PSQ	-	Cronbach alfa=89.5	Chemotherapy patients	140	Interview	Cross sectional	Kermanshah	2016	Jalali et al.	[14]
PSQ	13	r= 0.87	Leukemia	101	Interview	Cross sectional	Yazd	2018	Momayezi et al.	[15]

Table 1: General information extracted from studies

Assessment of relationship between demographic information and age of patients showed that sleeping of patients is related to some demographic factors such as age [10,11], gender [12], marital status [10,12], level of education [12], economic status [12], type of treatment [11,13,14], duration of treatment and duration of disease [11,13], smoking [10], fatigue and pain [14], self-care [12], physical activity and body mass (Table 2) [11].

Factors related to sleep disorders	Mean sleep disorder	Sleep disorder prevalence	Mean age	First author	Reference
Age, marital status, pregnancy, mastectomy, chemotherapy, smoking, disease duration	11.5	-	42.5	Eghtedar et al.	[10]
Physical activity, BMI, Age	8.5	0.802	49.7	Habibi et al.	[11]
Education level, self-care, gender, income level, marital status	9.3	0.89	44.08	Bagheri Nesami et al.	[12]
Disease duration, type of treatment	11.73	0.6125	48	Khoramrad et al.	[13]
Fatigue, pain, history of prior surgery, hospitalization	6.44	0.514	49.93	Jalali et al.	[14]
No statistical relation is reported between quality of life score and demographic factors.	6.49	0.609	9.45	Momayezi et al.	[15]

Table 2: Evaluation of relationship between sleeping and demographic information.

Discussion and Conclusion

This study was conducted to determine the prevalence of sleep disorder among cancer patients and the related factors. Results of this study showed that prevalence of sleep disorder is 68.55% in cancer patients with a mean of 8.99. Akuze et al study in Turkey showed that mean sleep disorder is 3.8 times [5]. Additionally, Sharma et al. conducted a study to evaluate the prevalence of sleep disorders in cancer patients in advanced stages in England. They reported that only 30.2% of patients suffered from sleep disorders [3]. Zarogoulidis et al. performed a similar study in Greece. They stated that 59.1% of patients suffer sleep disorder with a mean of 7.1 [16]. Fortner et al. assessed the prevalence of sleep disorders in cancer patients in the United States and reported that sleep disorders were 61% prevalent [17].

Investigation of these studies showed that sleep disorders in cancer patients is much higher in Iran, compared with Turkey, England, Greece, and the United States which can be attributed to higher quality of treatment facilities and equipment as well as higher awareness level. Since cancer patients require instructions and using new therapeutic methods, these actions can be helpful in resolving and improving problems in these patients.

Conflict of Interest

Authors announce no conflict of interest.

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