



EFFECTIVENESS OF COGNITIVE BEHAVIORAL THERAPY-1 ON INSOMNIA AMONG BREAST CANCER PATIENTS

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Abstract

Background: Insomnia is a common issue among patients with cancer with a potentially devastating impact on quality of life. It can be caused or exacerbated by multiple disease and treatment-related factors. Evidence of sleep disturbance in cancer patients can have a negative impact on health-related quality of life, which includes physical and psychological functioning

Objective: To assess the severity of insomnia among breast cancer patients. To evaluate effectiveness of cognitive behavioural therapy- I on patients with insomnia among breast cancer patients.

Methodology: A quasi-experimental study was conducted at the Cancer Department Allied Hospital Faisalabad Punjab. The study participants were breast cancer patients. Purposive sample of n=45 participants was recruited. A validated questionnaire of consisted of 07 items was used. Each participant was individually questioned at the cancer department. Once the data was collected, it was entered into SPSS version 24.

Results: The results of study revealed that majority of participants age between (41-50 years) was (51.7 %), mostly female 59(98.4%), 56(93.4% participants was married and participants attend primary was 22(36.1%), matric 23(37.7%). Results reveals that pre intervention mean ranks were (87.12) which significantly decrease after intervention (33.88). A significant difference was found between insomnia scores before and after intervention as evident by $P < 0.05$.

Conclusion: Therefore, it can be concluded that there is an effect of CBT-I intervention on insomnia among breast cancer patients.

Keywords: Cognitive Behavioral Therapy- 1, Insomnia, Breast Cancer

INTRODUCTION

Insomnia is a common issue among patients with cancer with a potentially devastating impact on quality of life. It can be caused or exacerbated by multiple disease and treatment-related factors. Despite the prevalence and impact of insomnia, it is rarely addressed systematically in the oncology clinic. The overall prevalence of sleep disturbance was 60.7% (IMa et al., 2021).

Despite its high prevalence, breast cancer-related insomnia typically remains untreated because of a lack of access to cognitive-behavioral therapy for insomnia (CBT-I), the treatment of choice for this

condition. While face-to-face CBT-I appears to be optimal in terms of efficacy, self-administered formats may be more cost-effective (Bjorvatn & Professionals, 2022)

A diagnosis of cancer is a significant life stressors that can affect the physiological, psychological, and physical state of the individuals. One of the most common and distressing symptoms is sleep disturbance, which negatively affects the quality of life among patients diagnosed with cancer. The World Health Organization estimates there were 19.3 million cases of new breast cancers diagnosed and almost 10 million deaths in 2020; moreover, the number of new breast cancers diagnoses worldwide is expected to rise in the next two decades by about 47% (Sung et al., 2021).

There are potential difficulties in defining sleep disturbance or disorder, as sleep quality is a multidimensional concept (Buysse, 2014).

Defines sleep health as ‘a multidimensional pattern of sleep-wakefulness, adapted to individual, social, and environmental demands, that promotes physical and mental well-being. Specifically, sleep disturbance may include difficulty falling asleep, problems with the initiation and maintenance of sleep, poor sleep timing, quality, efficiency, and excessive daytime sleepiness (Berger et al., 2018; Otte et al., 2016).

Evidence of sleep disturbance in cancer patients can have a negative impact on health-related quality of life, which includes physical and psychological functioning (Palesh et al., 2010 Rolke et al., 2009). Although the prevalence of sleep disturbance has been extensively studied in patients diagnosed with breast cancer, healthcare professionals often underestimate the importance of such symptoms (Laugsand et al., 2010). There is a lack of information related to the prevalence of sleep disturbance and its effect on patients in terms of whether or not it has a negative impact on their quality of life (Al Maqbali et al., 2021; Fox et al., 2020)

and is associated with high levels of disability (Lourenço et al., 2020).

This study will be useful for providing precise estimates of the prevalence and severity of sleep disturbance and identifying the potential risk factors that may affect reported prevalence rates. In addition, it will provide evidence-based recommendations for sleep disturbance in terms of ensuring increased awareness, better control and treatment, and better nursing management for sleep disturbance.

Two previous systematic reviews and meta-analyses have been published to determine the prevalence of sleep disturbance among different type of patients with breast cancer (Leysen et al., 2019; Santoso et al., 2019). Whilst these reviews are very helpful, they focused on a single type of cancer, mainly head neck (Santoso et al., 2019) and breast cancer (Leysen et al., 2019).

Therefore, different types of patients were not included. Although the risk of bias was assessed coarsely as a part of previous systematic reviews and meta-analyses, none of the reviews has attempted to examine the publication bias of the included studies. Hence, the current meta-analysis was designed and conducted to estimate the raw and weighted prevalence rates of sleep disturbances among breast cancer patients, taking into account the effect of a single moderator and the simultaneous interactions of several moderators, on the prevalence of sleep disturbance. Knowledge of the prevalence of sleep disturbance among breast cancer patients is extremely important in the assessment, treatment and management of patients, staff education, and further assessments required for the healthcare system.

One of the most frequent issues faced by breast cancer patients is insomnia, which is defined as having trouble falling asleep, staying asleep, or getting up too early at least three times a week for at least three months. Sadly, it frequently remains unnoticed and untreated throughout ordinary clinical treatment. It is widespread among the general public and all breast cancer patients, but has shown to be especially common among those with breast cancer, raising concerns for cancer patients.

Patients with breast cancer who have insomnia often do so due to emotional anguish, post-surgical discomfort, and side effects of their treatments, particularly those connected to endocrine therapy. Additionally, insomnia can increase physical and emotional distress, reduce everyday functioning and productivity, and result in more frequent use of medical services.

Only 56% of American cancer centers report conducting any kind of systematic screening for sleeplessness, despite the significance of the problem. Even in screening-program-equipped facilities,

almost 75% of patients are still unscreened. The literature and practice of oncology have not kept up with the growing knowledge of the prevalence and effects of insomnia, as well as the evidence basis for behavioural medicine and other non-pharmacologic ways to treating this widespread issue. This article aims to offer the practicing nurses a useful summary of the diagnosis, etiology, and available treatments for insomnia in breast cancer patients. We also go over new information, research priorities, and methods for delivering medical care that can help with clinical practice and the development of specialized screening and treatment services (Zhou ES. et al., 2017).

Insomnia is a common problem in the general population and tends to be more frequent in women compared to men. Although not fully understood, this gender disparity may contribute to the increased occurrence of breast cancer in the general population. However, breast cancer patients report up to three times the prevalence of insomnia compared to the general population, with breast cancer patients having the highest prevalence (Zohu. et al, 2019).

Depending on how insomnia or sleep disturbance is defined and assessed, different prevalence estimates are produced. One study of more than 900 patients from six cancer centres found that 38% of breast cancer patients had significant insomnia, compared to 31% of patients with gastrointestinal, genitourinary, gynecologic, lung, or skin cancers. According to other studies, more than 60% of breast cancer patients have shorter sleep durations and more frequent sleep disruptions (Schieber et al., 2019).

Insomnia is seen among both breast cancer survivors and patients living with advanced breast cancer. Despite the fact that many patients have insomnia before being diagnosed, a study of patients receiving radiation therapy for breast cancer indicated that over 30% of patients experienced sleeplessness for the first time and another 25% said their chronic insomnia had gotten worse (Schieber et al, 2019).

Insomnia frequently persists once it has been established. After receiving initial breast cancer treatment with the goal of curing the disease, the majority of patients experienced improvements in psychological indicators like anxiety, distress, and depression over time, but they still experienced insomnia. . It can be challenging to pinpoint a single etiologic factor for a particular patient because there are numerous potential causes of insomnia (Nowakowski et el,2019).

In addition to the anxiety and uncertainty that can follow a breast cancer diagnosis, sleeplessness is frequently attributed to a number of treatment-related problems. Both chemotherapy-induced amenorrhea and endocrine therapies. These vasomotor symptoms might cause insomnia to start, or they might make an existing condition worse (Nowakowski et al., 2019).

Approximately half of patients receiving endocrine therapy report insomnia, and hot flashes appear to be a contributing factor for many of these patients. A survey of 222 postmenopausal breast cancer patients revealed that 64% of them experienced hot flashes and 44% experienced nocturnal sweats. The majority of these women's symptoms were linked to sleep issues (Savard et al 2021)used skin conductance and polysomnography to monitor nightly hot flashes and sleep in breast cancer survivors with chronic insomnia and found that the period just before hot flashes was related with higher arousal and lighter sleep stages. Menopause brought on by cancer treatment has also been linked to more severe sleep disturbance than menopause brought on naturally over time.

While there is no doubt that vasomotor symptoms can cause some sleep disturbance, some patients also experience insomnia without having hot flashes. While there hasn't been much research on how endocrine medication affects sleep specifically, Oestrogen levels have been found to independently affect circadian rhythms. Further research is warranted on how endocrine treatment affects insomnia differently from vasomotor symptoms. Breast and chest wall pain is a typical side effect of breast cancer treatment. Following surgery, about half of patients report experiencing chronic pain of some kind, and this pain is frequently accompanied by sleep disturbances. Consider other health conditions such as sleep apnea, hypothyroidism, substance misuse, obesity, respiratory diseases, and endocrine dysfunction if individuals do report sleeping problems (Hatcher et al., 2018)

MATERIALS AND METHOD

Study Design

A quasi-experimental one-group pretest–posttest study was used to evaluate the effectiveness of cognitive behavioral therapy on insomnia among patients with breast cancer.

Study Variables

Independent Variable: Cognitive behavioural therapy is independent variable that is an intervention for insomnia among breast cancer patients.

Dependent Variable: Insomnia among breast cancer patient is dependent variable. It was assessed before and after intervention to evaluate the effects of cognitive behavioral therapy- 1 by the use of insomnia severity index.

Operational Definition

Insomnia: Defined as a difficulty in falling asleep, staying asleep and awakening early three times a week for three months. Insomnia severity index was used to measure insomnia.it has 7 items.

Following are the Cut off values was used to evaluate the participants:

Score 0-7 was defined No clinically significant insomnia.

Score 8-14 was defined subthreshold insomnia.

Score 15-21 was defined clinical insomnia (moderate severity).

Score 22-28 was defined clinical insomnia (severe).

Study Setting

Allied Hospital Faisalabad (Tertiary care) setting was used for study. Allied Hospital Faisalabad is comprised of 1500 bedded hospital have different departments and 100 bedded cancer ward caring different type of cancers including breast cancer.

Study Population

Diagnosed breast Cancer patients at Allied Hospital Faisalabad.

Sample Size

The calculated sample size is too small to perform the statistical test with good efficacy. So, 60 participants were be taken. After adding 20% dropout rate the sample size was 60. The sample size is calculated using the following formula:

Inclusion Criteria

- Diagnosed breast Cancer patients at Allied Hospital Faisalabad.
- Patients diagnosed with cancer only stage 1 &2.
- Willing to participate in study.
- Age 18 years and above
- Patients with complaint of insomnia. Related to breast cancer

Exclusion Criteria

- Serious or critical patients will be excluded.
- With other comorbid related to psychiatry.
- Already attended session for insomnia.
- Participants who got score 7 or less than 7.
- Not willing to participate.
- Cancer Patients other than Allied Hospital.
- Patients diagnosed with cancer stage 3.

Data Collection Tool

A total of two instruments consisted of the Socio-demographic Profile Sheet, Insomnia Severity Index Scale.

Tool-I: The first section, the Socio- demographic Profile Sheet, used to profile the demographic of the respondents.

Tool-II: Insomnia Severity Index Scale used to assess the severity level of respondents.

Data Collection Procedure

Purposive sampling technique was used after getting written informed consent from patients, keep confidentiality during and after research. Sample was drawn on the basis of inclusion and exclusion criteria. Patients was asked to fill Insomnia severity index (self-administered questionnaire) which was translated in Urdu before (as a bassline data) and after cognitive behavioural therapy (as a post-test) to evaluate the effects of cognitive therapy.

Data Analysis

Data was entered and analyzed in Statistical package for Social sciences (SPSS) version.22. In descriptive statistics frequency and percentage was used in table figures, bars and graphs. Quantitative continuous data was compared by using Man Whitney U Test of comparisons between the mean scores of the studied group before and after implementation of the CBT 1. It was considered a statistically significant difference at P-value ≤ 0.005 . S PSS version 22.

RESULTS

This includes results related to demographic characteristics of participants, Comparison of pre and post correct responses, Comparison of pre and post scores, Test for normality of data, Mean rank difference among pre and post intervention groups.

Table 1: Demographic characteristics of the participants (n: 60)

Demographic characteristics	Frequency	Percentage
Age of participants		
41- 50 years	31	51.7%
51-60 years	28	46.7 %
61-70 years	1	1.7 %
Gender		
Female	60	100%
Marital status		
Unmarried	4	6.6%
Married	56	93.4%
Mother Education level		
Illiterate	10	16.4%
Primary	22	36.1%
Matric	23	37.7%
Intermediate	6	9.8%

Table 1 reveals that Concerning participants demographic characteristics in this study shows that the majority of the participants age between (41-50 years) was (51.7 %), (61-60 years) was 28(46.7%), (60-70 years) was 1(1.7%). Most of the participants were female 60(100%). most of the study participants was married 56(93.4%) and only 4(6.6%) was unmarried. Education level illiterate 10(16.4%), primary was 22(36.1%), matric 23(37.7%) and intermediate 6 (9.8%).

Table 2. Insomnia severity index level in pre and post intervention (n= 60)

Insomnia severity index level	Pre N (%)		Post N (%)	
	Pre N (%)	Post N (%)	Pre N (%)	Post N (%)
No clinically significant insomnia	0(0%)	11 (18%)	42(70%)	7 (11.5%)
subthreshold insomnia	2(3.3%)	42(68.9%)	16(26.7%)	0(0%)
clinical insomnia (moderate severity)	42(70%)	7 (11.5%)	0(0%)	
clinical insomnia (severe)	16(26.7%)	0(0%)		

Table 2 revealed that in pre intervention 42(70%) participants was in clinical insomnia(moderate severity), 16(26.7%) were fall in clinical insomnia(severe) and 2(3.3%) were in sub threshold insomnia. After intervention the more participants have sub threshold insomnia, 11 (18%) fall in No clinically significant insomnia and only 7 (11.5%) was in clinical insomnia (moderate severity). therefore it can be concluded that severity level of insomnia was decrease in post assessment the cognitive therapy was effective in insomnia participants.

Normality Testing

To see the effect of intervention on pre and post insomnia scores, inferential statistics were selected. The selection of test to check the hypothesis was done on the basis of normality. In order to check the normality, Kolmogorove-Simernov test was applied, which confirm the normality of data.

Table 3: normality Test

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Pre.data insomnia	.183	60	.000	.890	60	.000
Post.data insomnia	.286	60	.000	.774	60	.000

a. Lilliefors Significance Correction

Table 3 shows that, the data is not normally distributed (P value < 0.05)therefore non parametric test were applied to determine the statistically significant mean difference. Based on these results, the selection of non-parametric test was made i.e. Man Whitney U test.

Comparison of insomnia scores before and after intervention

Table 4: Comparison of pre & Post scores of insomnia

Value/Lable	(Mean Ranks) (pre assessment)	(Mean Ranks) (post assessment)	Mann-Whitney U	P-value
Insomnia	87.12	33.88	203.000	0.000

A Man Whitney U test was used to test the effects of psychosocial intervention as cognitive behavioural therapy-1. Results reveals that pre intervention mean ranks were (87.12) which significantly decrease after intervention (33.88). A significant difference was found between insomnia scores before and after intervention as evident by P<0.05. Therefore, I can be concluded that there is an effect of psychosocial intervention on insomnia level.

Conclusion

Insomnia is seen among both breast cancer survivors and patients living with advanced breast cancer. Therefore, it can be concluded that there is an effect of CBT-1 intervention on insomnia among breast cancer patients.

Conflict of Interest

The authors have no conflict of interest.

Financial Statement

The corresponding author has managed himself along with the available resources in the Department of Lahore School of Nursing, The University of Lahore, Pakistan

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