

## Psychological Intervention for Cancer Patients

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### ABSTRACT

Cancer leads to wide ranges of bodily and mental problems. This can range from bodily pain to drowsiness to nausea. Cancer has a significant influence on person interpersonal life, and also cancer leads to anxiety, depression. Many meta-analyses studies have shown that psychological and cognitive behavioral therapies [CBT] aid in reducing the pain intensity. Cognitive behavioral therapy, creative/art therapy, hypnosis, relaxation exercises, mindfulness-based therapy [MBT], yoga and exercises have been found to be useful in various stages of the disease. In this article I am giving the general review of psychological treatments for cancer patients and psychological treatments help in reducing the mental distress.

**Keywords:** *Cancer, Psychological Intervention, Cognitive Behavioral Therapy, Mindfulness Based Therapy*

According to the Global Burden of Disease (GBD) 2015, Cancer is one of the global cause of death and morbidity. Pain, drowsiness, nausea, dyspnea are all the common physical symptoms that can lowers the person quality of life and also affects the person day-to-day activities. Cancer impacts the person interpersonal life and also lead to depression, anxiety. As per the National Cancer Institute, between 15% to 25% of the cancer patients have depression. As per the study from British Medical Journal, it is found that up to 10% of cancer patients have anxiety.

Psychological treatment can be defined as promoting a better adaption of the person in a given circumstances and enhancing the person life. **Hodges, 2011 define psychological intervention as those that help people to adopt to the disease and its treatment, leading to improved well-being and relief from the symptoms.** There are at least four distinct dimensions that can be used to define psychological treatment: 1] the intervention's content, 2] proposed mechanisms, 3] method of delivery, and 4] intended outcomes. Three relevant aspects of adaptation to illness, as well as its treatment and consequences, can be distinguished using the stress-coping paradigm: a) a primary assessment of the situation; b) a secondary assessment of one's capacity to cope with the disease, its treatment, and its effects; and c) actual coping strategies. The intervention ought to deal with either of these three aspects. Psychoeducation, psychotherapy, cognitive behavioural therapy, and social support groups led by professionals are the most common types of treatments that address these aspects.

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In oncology, psychological intervention includes a wide range of effective therapies. Psychological intervention help cancer patients and their families emotionally adapt to the treatment and diagnosis, deal with treatment-related side effects like drowsiness, pain, and nausea, improve health behaviours, and improve the compliance to daily chemotherapy regimens. Cognitive Behavioural Therapy, Mindfulness-based Therapy, Hypnosis and Guided Based Imagery, Cognitive Behavioural Stress Management, Couple based therapy, Family based therapy, play based therapy for children, are all the therapies that can be used to treat a person's mental health issues.

Cognitive Behavioral Therapy [CBT] aim is to” understand how our thoughts influences how we feel.” It is a type of psychotherapeutic approach. It has been used to treat the psychological disorders. Now it has many uses, it is used to reduce the pain of various type of cancer [Anie & Green, 2012; Tatrow & Montgomery, 2006]. The goal of CBT is to change the thought and behavior of the person related to disorder. In the first stage of CBT information is collected about the person [as well as their worries] and in the last stage of CBT assisting the person in integrating what they have learned to deal living with cancer [Mustafa, et al. 2012].

Mindfulness Based Therapy is originated from Buddhism and other spiritually profound works. Jon kabat- Zinn, in the 1990s, introduces mindfulness practices to the west. He defined mindfulness as paying attention to the present moment, without judging. There are two most popular mindfulness therapies are mindfulness based cognitive therapy [MBCT] and mindfulness based stress reduction [MBSR]. MBSR consists of eight weeks of group instruction, which includes meditation technique that is breath awareness, body awareness, and dynamic yoga postures [mindful moment]. It actually designed to treat the chronic pain. MBSR is now used to treat the emotional and behavioral disorders as well as reduces the psychological conditions associated with chronic disease. MBCT is a version of MBSR. MBCT focuses more on cognitive techniques and it is meant to treat specified mental health issues like recurrent depression.

In guided imagery technique we instructed cancer patients to concentrate on positive mental imagery and to imagine their immune system cells as powerful and destroying cancer cells.

Within the medical field, creative therapy is a type of supportive measures. Art therapy is one type of creative therapy, based on painting and drawing and also includes book therapy, music, dance, and poetry. Art therapy is a particular kind of intervention in the field of psycho-oncology. Art therapy aims is to help cancer patients deal with their disease and its effects.

**Garland, et al. [2014]** compares the Mindfulness-Based Stress Reduction [MBSR] with Cognitive Behavioural Therapy [CBT- I] for sleeplessness in malignant growth patients Patients with cancer and sleeplessness participated in this non -inferiority, arbitrarily selected, from September 2008 to March 2011. 111 of the 327 patients who were screened were arbitrarily selected (CBT-I, n = 47; MBSR, n = 64). In terms of reducing the severity of sleeplessness, MBSR performed poorer than CBT-I promptly following the program (P = 35), but it did not was better CBT-I at follow-up (P = 02). ***CBT-I resulted in increase in both sleep quality (p < 001) and dysfunctional sleep beliefs (p < 001).*** **Sun, et al. [2019]** determine the effectiveness of a meta-analysis of psychosocial functions in early-stage breast cancer survivors. His Results shows patients receiving CBT experienced a statistically significant (p = 04) reduction in anxiety compared to controls receiving no CBT. Within or

after four months of treatment, there was no improvement in depression or quality of life in the CBT group ( $p > .05$ ). ***The findings indicated that patients with early-stage breast cancer saw moderate improvements in their anxiety levels.*** Another research was done by ***Muller, et al. [2021]*** to determine whether the effects of Cognitive behavioural therapy [CBT] helps in reducing the weakness, and depressive symptom of cancer patients. The analysis involved data from 250 cancer survivors. The classical meditation analysis suggests that CBT help in increasing the self- efficacy ( $ab = -2.76$ , CI  $[-4.86, -1.01]$ ), reduced weakness ( $ab = -1.99$ , CI  $[-3.82, -0.43]$ ), reduces the symptoms ( $ab = -1.95$ , CI  $[-4.05, -0.11]$ ), and also less depression symptoms ( $ab = -2.02$ , CI  $[-3.71, -0.46]$ ). According to them ***weakness and depressed symptoms improve during the Cognitive Behavioural Therapy [CBT].***

***Zhang, et al. [2015]*** conducted a meta-analysis of the efficacy of mindfulness-based interventions for reducing cancer patients' levels of anxiety and depression. The meta-analysis included 469 participants who received mindfulness-based interventions and 419 participants were in a control group. A mindfulness-based therapy significantly reduced anxiety, but not for follow-ups that were longer than 12 weeks long. ***Anxiety and depression among cancer patients were effectively alleviated by mindfulness-based interventions.*** Another research was done by ***Carlson, et al [2016]*** compares the Mindfulness-based cancer recovery (MBCR) and supportive expressive group therapy (SET) effectiveness.

In distressed breast cancer survivors, this study measured the effects of these two interventions following the groups and for one year afterward. 252 Stage I-III malignant growth survivors were randomized into either MBCR or SET. Before and after the interventions, as well as six and twelve months later, women completed questionnaires regarding their mood, stress symptoms, quality of life, social support, spirituality, and post-traumatic growth. Females in MBCR have decrease in mind-set aggravation (essentially weakness, nervousness and disarray) and stress side effects including pressure, thoughtful excitement and mental side effects than those in SET. They also reported increased emotional and functional quality of life, affective, and positive social support, spirituality (feelings of peace and meaning in life), and post-traumatic growth in comparison to those in SET, who also improved to a lesser extent on many outcomes. According to them, ***MBCR is more effective than SET.*** Another research was done by ***Wells, et al. [2020]*** mindfulness is an efficient treatment, but few patients dropout in the middle of the session. Smart-messaging's potential can reduce dropout and enhance MBCT efficacy for cancer patients with depression or anxiety. There were total 51 cancer patients out of which smart-messaging was accepted by 30 patients, but not by 21. The session is of one month, and at each session assessment of anxiety and depression were evaluated. The patients used smart-messaging had odds of program completion that were eight times higher than those of non-users (OR = 7.79, 95% CI 1.75 to 34.58,  $p = .007$ ). When controlling for baseline severity, change over time, age, and number of sessions attended, smart-messaging users also reported greater improvement in depression over the course of the program ( $B = -2.33$ , SEB = .78,  $p = .004$ ). Anxiety reduction did not differ between the groups ( $B = -1.46$ , SEB = .86,  $p = .097$ ). In interviews, smart-messaging was described as a source of personal connection and a motivating reminder.

***Bjomeklett, et al. [2013]*** in this randomized study there were 382 women, in which 181 women each were assigned to control group and support group randomly. The session is of 2 months, 4 days in a week. The anxiety, depression, fatigue, quality of life of cancer patients are measured through questionnaire. This study shows that ***psychological treatments help in improving the physical pain, and fatigue and also cognitive function and quality of life.***

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**Marinelli, et al. [2020]** determine the impact of psychological treatment for pancreatic cancer patients. 400 patients were divided into two groups, one in experimental group and other in the usual care group. 49 and 65 completed the baseline and post-treatment assessments, respectively. The dropout rate was high [74.5%] between the day hospital [T0] and pre surgery treatment [T1]. The perceived self-efficacy in managing anxiety was related to a decrease in anxiety state ( $p < 0.001$ ) and showed a remarkable increase in the treatment group when compared to the control group. Emotional pain was also perceived as less by the treatment group ( $p = 0.03$ ). This study demonstrates a **remarkable decrease in emotional distress prior to surgery and a decrease in the perception of emotional pain following surgery**. **Zhang, et al. [2021]** the purpose of this parallel-group randomized controlled trial was to determine the impact of individually psychological treatment after bladder cancer surgery. There were 78 patients and are arbitrarily divided into groups, 39 in each. The data of the two groups remarkably improved after the treatment. The observation group's sleep quality, sleep time, sleep efficiency, time to fall asleep, sleep disorders, daytime dysfunction, anxiety score, and depression score were significantly lower than the control group's ( $P < 0.05$ ). This shows that **psychological intervention improves patients sleep quality and negative emotions**. For the impact of psychological treatment, **Rani, R., Joseph, J., & Dhankhar, R. [2023]** study 80 subjects to determine the impact of a psychological intervention led by a nurse on clients with head, neck, and breast cancer who were seeking treatment and session is of 30 minutes for 1 month. They found that **psychological intervention might be a good way to improve quality of life ( $p < 0.01$ ) and reduce mental distress ( $p < 0.01$ ) in cancer patients**.

**Lefevre, C., Ledoux, M., & Filbet, M. [2016]** study was to find out if palliative care patients' symptoms could be reduced and art therapy sessions could be more effective by focusing on aesthetic beauty and the pleasure that comes from doing art. Art therapy session is of one hour, self- assessment of six symptoms torment, anxiety, ill-being, weakness, sadness, and depression. Self- assessment is modified from Edmonton Symptom Assessment System (ESAS). 28 patients between July 2012 and December 2013 were participated in the 63 art therapy session. Anxiety ( $p < 0.0001$ ), ill-being ( $p < 0.0001$ ), weakness ( $p < 0.0001$ ), sadness ( $p < 0.0001$ ), and depression ( $p < 0.0001$ ) were all reduced. According to them, Art Therapy helped in reduction of the symptoms torment, anxiety, depression, sadness, weakness and ill-being. Another study was done by **Bozcuk, et al. [2017]** study was based on how a chemotherapy therapy affects patient mental health and how a painting artist's and painting art therapy affected anxiety levels, depression levels and quality of life in chemotherapy patient. A painting art therapy program (PATP) was presented to cancer patients receiving chemotherapy in the day unit of a university hospital's medical oncology department. Under this program, a professional painter educates them how to paint, and also said them to practice this at home. Before and after the PATP, the changes in the Hospital Anxiety and Depression Scores (HADS) and the quality of life domains were evaluated. The findings were compared to those who are not participating in the PATP but receiving chemotherapy. There were 48 participants in the PATP, 26 of whom had previously been exposed to PATP and 22 of whom had not. The study also included a control group of 24 patients who did not have any PATP activity during the study period. **Global quality of life ( $F = 7.87, P = 0.001$ ) and depression scores were remarkably improved with PATP ( $F = 7.80, P = 0.001$ )**. **Radl, et al. [2018]** study was to determine whether self-book art therapy improved the mental well-being and emotional pain of women cancer patients receiving active treatment. Sixty cancer patients were arbitrarily selected to either standard care or the 6-session Self-Book art therapy program. The Distress Thermometer, Perceived Emotional Distress Inventory, Brief Psychological Well-Being Test from the Patient-Reported

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Outcomes Measurement Information System, and Spiritual Well-Being Test from the Functional Assessment of Chronic Illness Therapy were used to collect the data. On week 3, week 6, and one to two months after the intervention, measurements were taken. The final study included forty participants. For the primary outcome measures, there were no remarkable differences found between the groups: mental well-being and emotional distress. The spiritual well-being of Self-Book art therapy participants improved more than standard care control participants ( $P = .02$ ).

A pilot study was done by *Miller, H. [2017]* to assess the impact of self-hypnosis on quality of life of breast cancer patients which consisted of four five-session self-hypnosis classes. The Functional Assessment of Cancer Therapy-Breast, a self-report instrument, was used to measure the effect of self-hypnosis on women with breast cancer before and after the treatment. The sample size was small [ $n = 23$ ], remarkable changes were observed on 16 of the 36 items after using the self-hypnosis. At the  $p < 0.01$  level, eleven items were remarkable, while at the  $p < 0.05$  level, five were remarkable. The participants reported less difficulty in meeting their family's needs; fewer adverse effects; less sick, depressed, and nervous; had less anxiety about their condition getting worse and death; less breathing difficulty; less tenderness and swelling in their arms; and less worry about how stress affects their health. They also have improved life satisfaction and sleep; take pleasure in the daily activities, happier with life. 86% of participants reported that the self-hypnosis classes were very helpful, and 100% reported that they improved their quality of life. The mean score for self-hypnosis for quality of life was 3.57 and standard deviation [SD] = 0.51. The mean score for "Usefulness of self-hypnosis" was 3.71 (SD = 0.61). The pilot study demonstrates the value of teaching breast cancer patients self-hypnosis.

*Berliere, et al. [2018]* study was based on that did hypnosis therapy might help in reduction of the negative effects of breast surgery. 150 patients in group I go through breast surgery with general anesthesia, while 150 patients in group II go through the same procedures with hypnosis sedation. Following surgery, 32 patients in each group received chemotherapy, 123 received radiotherapy and 115 received endocrine therapy. The duration of hospitalization in group II was shorter than in group I. Group II had fewer post breast removal surgery, lymph punctures (1–3, median value = 1.5) than Group I did (2–5, median value = 3.1), and the breast removal surgery had more lymph removed (103 ml vs. 462.7 ml) ( $p = 0.0297$ ). The group of patients who go through surgery while receiving hypnosis sedation also had a less anxiety scale after the procedure ( $p = 0.0000000000002$ ). During chemotherapy, lack of energy was lower common in group II ( $p = 0.01$ ). In this group, there was a non-remarkable trend toward a decrease in the frequency of nausea and vomiting ( $p = 0.1$ ), lack of energy, and radiodermatitis following radiotherapy ( $p = 0.000000881$ ). Finally, lack of energy, hot flashes, joint and muscle pain, were lower in group II while receiving hypnosis ( $p = 0.00$ ).

*Charalambous, et al. [2015]* to determine whether stress decrease with guided imagery (GI) and progressive muscle relaxation (PMR) is possible in chemotherapy-treated prostate and breast cancer patients. Patients were arbitrarily selected either to the control group or the intervention group (PMR and GI). The SAS and BECK-II questionnaires [also two biological marker; saliva cortisol and saliva amylase] were used to assess patients for anxiety and depression over a three-week period. 236 patients were arbitrarily selected from which 104 were arbitrarily selected to the control group and other 104 were arbitrarily selected to the treatment group. In these groups, 52 were males in each group and 52 were females in each group. When compared to control group [ $b = -29.4$ ,  $p < 0.001$ ] treatment mean anxiety score change was remarkably different. When compared to control group [ $b = -$

29.4,  $p < 0.001$ ] treatment mean depression score change was remarkably different. The levels of cortisol in the control group before the treatment improve [ $0.44 \pm 0.35$ ] until week 3 while the levels of cortisol in the treatment group reduced [ $0.16 \pm 0.18$ ] until week 3. In case of levels of amylase [ $p < 0.001$ ] show the same interaction. PMR and GI sessions can help decrease anxiety and depression in prostate and breast cancer patients receiving chemotherapy.

**Kurt, B., & Kapuca, S. [2018]** the purpose of this study was to see how progressive relaxation exercises affected the symptoms of chemotherapy in breast cancer patients who were attending chemotherapy. The non-randomized controlled studies shown that intervention group experienced less pain, less insomnia, less breathlessness, less anorexia, less anxiety, and less mouth ulcers than the control group. In the control group, the severity of symptoms increases ( $p < 0.05$ ). Relaxation exercise help in reducing the symptoms resulting from chemotherapy.

**Taso, et al [2014]** the study objective was to determine that yoga, exercise improves depression, anxiety, and weakness in breast cancer patients. 60 women with non-metastatic breast cancer were selected for the sample. 30 were in experimental group and control group each. The experimental group participants received an eight-week treatment consisting of 60 minutes of yoga two times in a week. The control group was provided with the routine care. The Johnson–Neyman analysis revealed that the yoga exercise helped the participants in the experimental group feel less fatigued overall and less affected by weakness in their daily lives. After four weeks of participating in the treatment, patients in the experimental group who had relatively low starting standard values (standard mean value 3.31 and 3.22, respectively) saw remarkable decrease. After eight weeks for the majority of patients (approximately 75%), most of them had moderate starting standard values (mean standard value 7.30 and 5.34, respectively). In patients with breast cancer, the eight-week yoga exercise program developed in this study effectively reduced weakness, but it did not reduce depression ( $F = 1.29, p > .05$ ) and anxiety ( $F = 2.7, p > .05$ ).

**Vadiraja, et al [2017]** in this study, we evaluate how yogic treatment helps cancer patients with metastatic breast cancer deal with weakness. Over the course of three months, 91 patients with metastatic breast cancer were arbitrarily selected to either an integrated yoga program ( $n = 46$ ) or supportive therapy and education ( $n = 45$ ). Appraisals were carried out before and after the treatment for weakness, worries, diurnal salivary cortisol, and NK cells. ANCOVA was used for evaluate. When compared to supportive therapy, the findings suggest that yoga reduces perceived stress ( $P = 0.001$ ), fatigue frequency ( $P < 0.001$ ), fatigue severity ( $P < 0.001$ ).

**Hilfiker, et al. [2018]** to compare how cancer-related fatigue (CRF) is affected by various forms of exercise and other natural treatments in patients during and after treatment. It contains 245 studies. With a standardized mean difference (SMD) of 0.77 (95 percent Credible Interval (CrI) (1.22 to 0.31), relaxation exercise ranked highest among the cancer treatment interventions, followed by massage (0.78; 1.55 to 0.01), and physical activity and cognitive-behavioral therapy (0.72 for combined CBT); ranging from (0.09 to 1.34), and aerobic and resistance training together (0.67; ranging from 1.01 to 0.34), and resistance training (0.53; ranging from 0.03), aerobic (0.53; between 0.26 and 0.80), and yoga (0.51; SMDs ranged from moderate to large (1.01 to 0.00). **Yoga had the greatest effect (0.68) after cancer treatment. (−0.93 to −0.43).** Aerobic and resistance training together (0.50; ranging from 0.66 to 0.34), combined CBT (0.45; 0.21), Tai-Chi (0.45), and (−0.84 to

-0.06), CBT (-0.42; ranging from 0.25 to 0.58), and resistance training (0.35) ranging from (0.62 to 0.08) and aerobic (0.33) All SMDs (0.51 to 0.16) were moderate to small. To reduce CRF, patients can select from a variety of effective exercise and natural treatments.

### CONCLUSION

Psychological treatments can lower the anxiety, depression, weakness, physical pain and reduce the mental distress. It also improves the quality of life, sleep quality, and negative emotion. Art therapies such as paintings, self- book improve quality of life, satisfaction, pleasure and also reduce the depression. PMR sessions can help decrease anxiety and depression in prostate and breast cancer patients receiving chemotherapy. Yoga reduces weakness but didn't reduce the depression. Hypnosis can lower the symptoms like hot flashes, lack of energy, joint and muscle pain in breast cancer patients. Anxiety and depression among cancer patients were effectively alleviated by mindfulness-based interventions. Cognitive Behavioural Therapy [CBT] helps in reducing anxiety symptoms, depression symptoms, and weakness. However, more research is needed to figure out which patients might benefit most, how many patients dropout in the middle of the session, how long these methods lasts, and how many sessions are needed to get long-term results.

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### **Conflict of Interest**

The author(s) declared no conflict of interest.

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