

Effect of laughter therapy on cancer-related anxiety in patients with breast cancer; a systematic review

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ABSTRACT

Introduction: Cancer as one of the greatest concern of today's societies makes special anxiety that can be reduced by laughter therapy. **Objective:** In this study, the effect of laughter therapy on cancer-related anxiety in patients with breast cancer was reviewed. **Method and materials:** To review the articles of interest, international databases (PubMed, ISI and Scopus) considered for search of English articles by Dec, 2018 and eight articles were finally entered into the study. **Findings:** There were 406 subjects analyzed in this systematic review of eight articles, in which five interventional, and three qualitative studies were remained. **Conclusion:** According to the results, the laughter therapy is effective way for reducing anxiety, depression, and stress in not only breast cancer patients but also in all cancers and all patients

Keywords: Anxiety, Breast, Chemotherapy, Laughter, Stress

Introduction

Cancer is known as one of the greatest constraints of today's societies in all countries and is growing rapidly [1]. it is always one of the research priorities because of the large public health problem, in which the third cause of death in Iran is cancer [2]. In this regard, breast cancer has high prevalence in women, and overall methods for coping with cancer, depending on the tissue involved, include surgery, chemotherapy, radiotherapy, and hormone therapy separately or in combination [3]. Chemotherapy is one of the main treatments for cancer, which has many complications that can be attributed to increased stress in patients undergoing chemotherapy, and in fact related to muscle tension, vigilance in preparation for future hazards and conservative behaviors as well as it is a type of adaptive

impairment that occurs after exposure to an important stressful event in life for the patient, which can be seen in most patients with cancer [4, 5].

One of the ways to reduce anxiety is laughter therapy includes therapeutic interventions to gain funny experiences that lead to health, physiological and psychological consequences. Unlike many treatments and nursing care, laughter therapy does not have a specific contraindication [6]. It is also important as a psychological defense mechanism in oncological care because humor allows the person to adjust anxiety and stress in a consistent and constructive manner [7]. Regarding the effect of laughter on the body, since laughter makes changes in the track of breathing, heart rate and blood circulation, changes occur dramatically when laughing in the pattern of human brain waves, and all levels of the brain's cortical reflect toward laughing, so that due to the physiological changes and the relationship between the mind and the body change, the individual behavioral and cognitive level change rapidly [8].

The use of laughter therapy and performing physical activity in any age group can lead to biological changes to increase physical and mental health and enhance self-esteem. Using natural and low-cost methods such as laughter therapy and physical activity can easily increase the feeling of sincerity, warmth and emotion by changing the magnetic field of the body and creating a

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positive aura in the patients [9, 10]. In this study, the effect of laughter therapy on cancer-related anxiety in patients with breast cancer was reviewed.

Methods

Search strategy

To review the articles of interest, international databases (PubMed, ISI and Scopus) considered for search of English articles by Dec, 2018. The used key words were included neoplasms, anxiety, end chemotherapy, breast, laughter, stress, crown and Iran, or a combination of these words in the title/abstracts. (((((((Neoplasms[Title/Abstract]) AND anxiety[Title/Abstract]) OR Chemotherapy[Title/Abstract]) OR breast[Title/Abstract]) OR laughter[Title/Abstract]) OR breast[Title/Abstract]) OR stress[Title/Abstract]) OR clown[Title/Abstract]) AND Iran[Title/Abstract]) was the search strategy.

Inclusion criteria

After collecting articles, references were entered into Endnote to remove duplicates and also read the titles again. Next, by reviewing the titles, studies which were not related to the aim

of our subject were deleted, and then the remaining studies were selected to be evaluated by two independent researchers. Studies were limited only on humans. Finally, studies published in English were entered into this systematic review.

Data extraction

Information dealing with the selected articles (the author's last name, year of publication, study design, sample size and the results of each article were taken by two independent investigators. The differences observed in this process corrected by a third investigator who was independent with the two previous investigator.

Findings

There were 406 subjects analyzed in this systematic review of eight articles, in which five interventional, and three qualitative studies can be seen (Table 1). The selection process using Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement has shown in Figure 1.

Table 1. The features of analyzed articles in this systematic review

ID	Reference	Title	N	Design	Age	Conclusion
1	Kim SH. Et al. in 2015 [11]	The Effects of Laughter Therapy on Mood State and Self-Esteem in Cancer Patients Undergoing Radiation Therapy: A Randomized Controlled Trial	62	Clinical trial	30-70 years	These results indicate that laughter therapy (LT) can improve mood state and self-esteem and can be beneficial, noninvasive intervention for patients with cancer in clinical settings. LT has a positive effect on improving mood states and self-esteem. Therefore, LT should be considered as a noninvasive complementary intervention to improve the mood states of patients with cancer in clinical nursing practice. It is reported decreased anxiety, depression, and stress for female patients with cancer after use of 60-minute sessions
2	KimSH. et al. in 2015 [12]	Laughter and Stress Relief in Cancer Patients: A Pilot Study	60	Randomized clinical trial	40-60 years	As the therapeutic laughter program was effective after only a single session in reducing anxiety, depression, and stress in breast cancer patients, it could be recommended as a first-line complementary/alternative therapy.
3	Beach WA, Prickett E. in 2016[13]	Laughter, Humor, and Cancer: Delicate Moment and Poignant Interactional Circumstances	105	Qualitative study	Mean no reported	With laughter, sarcastic humor, and a serious correction the patient minimizes cancer threats and fears. In these ways the patients attempt to build a convincing case that she is well, not sick, nor overly anxious about cancer spreading. A particular focus on laughter and humor provides deep access to the lived experiences of cancer patients and the primal significance attributed to wellness for living.
4	Richard T. Penson et al. in 2014 [14]	Update: Laughter: The Best Medicine?	2	Qualitative study	Mean no reported	The diagnosis of cancer is incredibly stressful, and treatments are arduous. Humor may help to ease the pain, show the human side of the health care team, and help everyone cope. Whether the patient uses humor to lighten the mood of a difficult consultation with their physician, or health care workers use it to help cheer each other through the day, humor and laughter can be valuable tools. Humor can soften the isolation experienced by both patients and staff

5	NojiS, Takayanagi K. in 2010 [15]	A case of laughter therapy that helped improve advanced gastric cancer.	1	Qualitative study	Mean no reported	Laughter, one of our casual behaviors, has the effect of reducing the stress experienced by the human body. Laughter is expected to become alternative medicine in the future, and we hope to see more reports and evidence on soothing therapies using laughter.
6	Kuru Alici N et al. in 2018 [16]	The preliminary effects of laughter therapy on death anxiety among older adult living in nursing homes: A non-randomized pilot stud	50	Quasi-experiment al	65-75 years	The results suggest that laughter therapy can be used to decrease levels of loneliness and death anxiety among older adults with cancer living in nursing homes. Anxiety regarding death and loneliness are important issues that affect quality of life in older adults. This first pilot study demonstrates the beneficial effects of laughter therapy on loneliness and death anxiety in nursing home residents. Nurses can incorporate laughter therapy into routine programs in nursing homes.
7	DeCaro D.S. et al. in 2016 [17]	Laughter yoga, adults living with Parkinson's disease, and caregivers: A pilot study	85	Quasi-experiment al	53-91 years	The advantages of an intervention like laughter, in the form of Laughter Yoga, include its accessibility, cost, body/mind focus, and strengths-based, positive approach. This may be a valuable tool for use by clinicians working with adults and their caregivers, as a referral source for patients suffering from low mood, or as a possible resource to help manage their PD symptoms. Randomized, clinical trials, with multiple laughing sessions over time are warranted to further explore the ramifications and usefulness of laughter as a body/mind exercise that improves mood and well-being in adults and caregivers.
8	Sakai et al. in 2013 [18]	A trial of improvement of immunity in cancer patients by laughter therapy.	41	Clinical Trial	Mean no reported	Patients with advanced cancer have lower immunity which is further decreased with surgery or chemotherapy. Chemotherapy patients who undertook the Laughter Therapy using the Smile-Sun Methodology during treatment in the hospital showed significantly higher immunity levels. The results of this study indicate that patients with gastrointestinal cancer, who undergo laparoscopic surgery or chemotherapy for stomach or colorectal cancer, benefit from a formal program of psychotherapeutic support during the in-patient hospital stay in terms of immunological improvement.

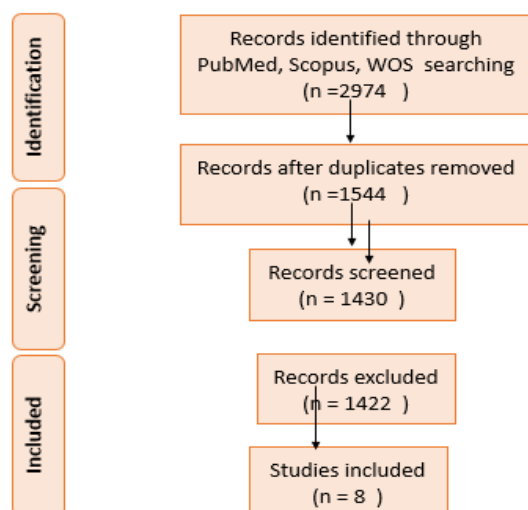


Figure 1. Selection of studies using Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement

Discussion

Laughter therapy includes therapeutic interventions for gaining funny experiences that lead to health, physiological and psychological consequences [6]. The role of humor as a psychological defense mechanism in oncological care is very important. Humor allows the person to adjust anxiety and

stress in a consistent and constructive manner [7], as well as improving the condition of patients with depression problems is one of the benefits of laughter therapy, as well as it imposes the lowest cost to the patient. In laughter therapy, information is provided on the various methods of humor to patients, and in many ways, it does not require special space and special preparation [10].

In a study by Felluga et al. in 2016 on the effect of clown therapy for laughing children and reducing stress and relieving pain in the emergency department, children were enrolled in the study who needed pain relief. The intervention group received less anxiety scores due to making face and clown therapy, but the pain score did not change [19].

In a study by Nabi in 2016 entitled "Laughing in the face of fear (of disease detection): Using humor to promote cancer self-examination behavior", laughing methods were used for undergraduate students and they were asked to perform a breast and testicle self-examination for a possible cancer, the results indicated a positive effect of laughter therapy to reduce the anxiety caused by the discovery of the cancer and was actually a powerful tool for reducing anxiety [20].

In Iran, the effect of laughter has been measured in other aspects of breast cancer patients, such as the study of Rad et al. in 2016 on the effect of laughter therapy on the severity of fatigue and quality of life in patients with breast cancer under

radiation therapy was done. This clinical trial was performed on patients with breast cancer under five weeks of radiotherapy. The intervention group participated in laughter therapy sessions twice a week for one month. The fatigue evaluation form was completed as a pre-test at the end of the first week and at the end of the second to fifth weeks, it was completed as a post-test. Comparison of the mean of the four components of fatigue severity in the two groups after laughter therapy showed a significant difference between the two groups of laughter and control group. The results of this study showed that laughter therapy was effective in reducing the fatigue rate of breast cancer patients under radiotherapy. Providing the necessary tools for care providers to apply laughter for improving the quality of life and reducing their stress is recommended ^[21].

Laughter therapy affects not only cancer-related anxiety but also affects all aspects of life. In this regard, there is a study that have investigated by Ghodsini et al. on the effects of laughter on general health conducted as a clinical trial on older people. The intervention group received a laughter therapy in two sessions of one and a half hours each week for 6 weeks. Data collection was done using the Goldberg & Healer General Health Questionnaire. Finally, the laughter therapy could improve depression in general health and subscales such as physical symptoms, insomnia and anxiety ^[22].

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Ethical considerations

Ethical subjects such as plagiarism and double publication have observed in this study.

Conflict of interest

The authors acknowledge no conflict of interest among authors participated in this study

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