Frontiers in Health Informatics
ISSN-Online: 2676-7104
www.healthinformaticsjournal.com
2024; Vol 13: Issue 8
Open Access

A study to assess effectiveness of Yoga Nidra on Level of anxiety among cancer patients of selected Hospital: Pilot Study

Shraddha M. Patel[1], Dr. N. Sivasubramanian[2], B. Mahalakshmi[3]
[1] Ph. D. Scholar, Nootan college of Nursing, Sankalchand Patel University, Visnagar, Gujarat-384315
[2] Professor, Nootan college of Nursing, Sankalchand Patel University, Visnagar, Gujarat-384315
[3] Professor, Nootan college of Nursing, Sankalchand Patel University, Visnagar, Gujarat-384315

Cite this paper as: Shraddha M. Patel, Dr. N. Sivasubramanian, B. Mahalakshmi (2024) A study to assess effectiveness of Yoga Nidra on Level of anxiety among cancer patients of selected Hospital: Pilot Study. *Frontiers in Health Informatics, 13* (7), 612-622

Abstract

Aim: The study aims o investigate the effect of Yoga Nidra on reducing the level of anxiety among cancer patients undergoing treatment.

Materials and Methods: A quasi experimental study design was adopted. A total of 40 cancer patients from Oncowin cancer center, Ahmedabad, Gujarat were enrolled and divided into two groups: Experimental group (n=20) and the control group (n=20) . The Experimental group participated in Yoga Nidra sessions for 30 minutes daily over a period of 2 weeks, while the control group received the standard care without Yoga Nidra. Anxiety levels were measured using the State and Trait Anxiety Inventory(STAI) at baseline and after the intervention.

Results: The baseline Anxiety levels were comparable between the two groups. Post intervention ,the experimental group demonstrated significant reduction in anxiety levels compared to the control group($P \leq 0.05$). The mean anxiety score in the experimental group decreased in mean difference of 10.95, while the control group showed minimum difference.

Conclusion: The findings suggest that Yoga Nidra is an effective intervention for reducing anxiety levels among cancer patients. Incorporating Yoga Nidra into usual treatment modalities may enhance their wellbeing of cancer patients.

Key words: Yoga Nidra, Anxiety,Cancer patients

Introduction

Cancer ranks as the second leading cause of death and has become major health concern by accounting for an estimated 9.6 to 10 million deaths worldwide in 2023. This equates to approximately 26,300 deaths every day attributed to cancer .[1]

Cancer was usually diagnosed after 55 years but recently it is common among younger generation. The cancer burden keeps rising, imposing significant physical, emotional, and financial strain on individuals, families, communities, and healthcare systems. Healthcare systems in low and middle-income countries are inadequately prepared to manage this load, resulting in many cancer patients lacking access to prompt

and high-quality diagnosis and treatment.[2, 3] The treatment options depend on various factors, including the type and stage of cancer, overall health, metastasis and patient preferences.[4,5]

Patients diagnosed with cancer often have significant unmet needs, particularly in terms of psychological support and medical information. Caregivers also face their own set of challenges and concerns related to the illness.[6]Cancer diagnosis and treatment often entail significant psychological distress for patients, affecting various aspects of their well-being.[7]

Cancer patients have to deal with long-term side effects of treatment include neuropathies that may lead to weakness, numbness, or pain. They also face fatigue, cognitive or sexual issues, anxiety or depression, and cardiovascular and musculoskeletal problems.[8] The psychological outcomes that have been examined are primarily negative emotional variables like anxiety, depression and altered body image if patients cannot manage this distress. It can greatly affect their outcomes including quality of life, functional and emotional well-being, adherence to treatment, self-care and management, as well as mortality, and morbidity.[9]

Anxiety is defined as pathological if it is disproportionate to the level of threat to the individual or disrupts normal function. This may represent a response to a new stressor or represent a primary anxiety disorder with or without an obvious stressor.(DSM IV).[10] Individuals with cancer may experience anxiety and distress during screening, while waiting for test results, upon receiving a cancer diagnosis, during treatment,and when concerned about cancer recurrence. Anxiety and distress can lead to issues like nausea and vomiting before treatments, severe pain and insomnia. These emotional challenges may also cause individuals to postpone or miss follow up appointments.

Many cancer patients experience changes in body image due to treatments like surgery. A cancer diagnosis and the challenges of treatment can have impact on physical appearance, functional limitations, and a sense of loss of control, emotional impact, social isolation, career and lifestyle changes, loss of role identity and fear of recurrence. [11]

Medical treatments for cancer are essential; there is increasing awareness of the necessity for complementary interventions to tackle the psychosocial aspects of cancer treatment. Yoga is gaining attention as potential technique to alleviate anxiety.[12]
Yoga Nidra means sleep with a trace of awareness. It is a systematic method of inducing complete physical, mental and emotional relaxation. It is a state of mind in between wakefulness and dream. During yoga nidra practice one appears to be asleep, but it can open subconscious and unconscious deeper phases of mind. In this threshold between sleep and wakefulness, contact with subconscious and unconscious dimensions occurs spontaneously. The term *yoga nidra* is comes from two Sanskrit words, *yoga* meaning union or one-pointed awareness, and *nidra* means sleep. Yoga Nidra is deep relaxation with inner awareness. It is a simple but profound technique adapted by Swami Satyananda Saraswati from the traditional tantric practice of nyasa. Though the practice of Yoga Nidra, one cannot only relaxing but restructuring and reforming whole personality from within. It has been shown to be effective in mitigating stress, reducing anxiety, improving sleep quality and enhancing overall well-being during challenging medical treatments.[13, 14]

MATERIALS AND METHODS

Design Quasi experimental research design was employed to evaluate the effectiveness of Yoga Nidra on level of anxiety among cancer patients. Fourty patients were chosen using a convenient sampling method based on specific inclusion criteria from Oncowin Cancer Center, Ahmedabad. The consent process outlined guarantees for privacy, anonymity, and the option to withdraw from the study at any time.

The inclusion criteria for the study included individuals over10 years of age, regardless of gender who could understand and follow instructions in Gujarati, and who had been diagnosed as a cancer patient and undergoing treatment for more than 20 days continuously. Eligible participants were to be willing to participate, provide consent, to be diagnosed with cancer, not engage in practise of any other relaxation therapies and not to be involved in similar research studies.Exclusion criteria were terminally ill patients, those with altered sensorium, patients on continuous opioids, and those with sensory deficit.

Pre test was taken and baseline data regarding anxiety level was collected. Cancer Patients were divided into two groups Experimental group (n=20) and Control Group (n=20). Experimental group was given Yoga Nidra for 30 minutes once in a day for 2 weeks and control group was given routine treatment and follow up regularly. Post test was done with same tool after 2 weeks for experimental group as well as control group.

The sample comprised 40 individuals, with 21 (52.5%) being male and 19 (47.5%) being female. The majority, 62.5%, were in the age group of 41 to 60 years.10 participants (25%) had no formal education, 25 (62.5%) had primary education, 3 (7.5%) had higher secondary education, and 2 (5%) had a graduation degree or higher. In terms of marital status, 34 participants (85%) were married, 1 (2.5%) was unmarried, and 5 (12.5%) were widowed. Regarding religion, 35 participants (87.5%) were Hindu, 4 (10%) were Muslim, and 1 (2.5%) belonged to another religion.17 participants (42.5%) resided in urban areas, while 23 (57.5%) lived in rural areas. When it comes to employment, 4 participants (10%) were employed, 16 (40%) were homemakers, 4 (10%) were retired, 1 (2.5%) was a student, and 15 (37.5%) were engaged in other local work. For monthly family income, 3 participants (7.5%) had an income of up to Rs. 10,000, 14 (35%) had an income between Rs. 10,001 and Rs. 20,000, 12 (30%) had an income between Rs. 20,001 and Rs. 30,000, 8 (20%) had an income between Rs. 30,001 and Rs. 40,000, and 3 (7.5%) had an income above Rs. 40,001.In terms of family structure, 19 participants (47.5%) belonged to nuclear families, while 21 (52.5%) belonged to joint families.Concerning the number of children, 1 participant (2.5%) had no children, 7 (17.5%) had one child, 14 (35%) had two children, and 18 (45%) had three or more children. The analysis of selected demographic variables (Table 1) between experimental group and control group showed no significant statistical differences.

Table 1 Comparison of demographic variables between the experimental group and the control group.

Variables	Experimental group (n=20)	Control group (n=20)
Age		
Below 20 years	0	0
21 to 40 years	3	2
41 to 60 years	14	11
61 to 80 years	3	7

Above 80 years	0	0
Gender		
Male	9	12
Female	11	8
Transgender	0	0
Education		
No formal Education	6	4
Primary Education	13	12
Higher Secondary Edu.	1	2
Graduation and above	0	2
Marital status		
Married	17	17
Unmarried	0	1
Separated / Divorced	0	0
Widowed	3	2
Religion		
Hindu	17	18
Muslim	3	1
Christian	0	0
Other	0	1
Residency		
Urban	9	8
Rural	11	12
Employment status		
Employed	2	2
Unemployed	0	0
Home maker	9	7
Retired	2	2
Student	0	1
Any other	7	8
Monthly family Income		
Up to Rs.10000/-	1	2
Rs. 10,001 to 20,000/-	7	7
Rs. 20,001 to 30,000/-	7	5
Rs. 30,001 to 40,000/-	4	4
Rs. 40,001 and above	1	2
Type of Family		
Nuclear	9	10
Joint	11	10
Number of Children		
Nil	0	1
1	5	2
2	6	8

3 and more	9	9

37 participants (92.5%) were aware of their diagnosis, while 3 (7.5%) were not.26 participants (65%) were aware of their prognosis, and 14 (35%) were not.Cancer types among participants were as follows:8 (20%) had oral cancer,7 (17.5%) had head and neck cancer,3 (7.5%) had lung cancer,7 (17.5%) had breast cancer,3 (7.5%) had cervical cancer,2 (5%) had gastrointestinal cancer,10 (25%) had other types of cancer.Cancer stages among participants were:1 (2.5%) had stage 0 cancer, 12 (30%) had stage 1 cancer, 8 (20%) had stage 2 cancer,8 (20%) had stage 3 cancer,5 (12.5%) had stage 4 cancer,6 (15%) were unaware of their cancer stage. Treatments received by participants included:22 (55%) underwent surgery,32 (80%) had chemotherapy,22 (55%) had radiation therapy and no one had any other types of treatment.Duration since cancer diagnosis includes :30 participants (75%) had been diagnosed within the past year,7 (17.5%) had been diagnosed 1 to 3 years ago,1 (2.5%) had been diagnosed 3 to 5 years ago,2 (5%) had been diagnosed more than 5 years ago.Co-morbidities among participants includes :29 (72.5%) had no co-morbidities,8 (20%) had hypertension,6 (15%) had diabetes,1 (2.5%) had hypothyroidism.
The analysis of selected clinical variables (Table 2) between experimental group and control group revealed no significant statistical differences.

Table 2 Comparison of clinical variables between the experimental group and the control group.

Variables	Experimental Group (n=20)	Control Group (n=20)
Awareness of Diagnosis		
Yes	19	18
No	1	2
Awareness of Prognosis		
Yes	13	13
No	7	7
Type of Cancer		
Oral	3	5
Head and Neck	4	3
Lungs	1	2
Breast	5	2
Cervix	2	1
Stomach/intestine/rectal	2	0
Prostate	0	0
Other	3	7
Stage of Cancer		
Stage 0	0	1
Stage 1	8	4
Stage 2	5	3
Stage 3	3	5
Stage 4	2	3
Not Aware	2	4
History of Surgery		
Yes	15	7

No	5	13
History of Chemotherapy Yes No	 17 3	 15 5
History of Radiation therapy Yes No	 12 8	 10 10
Any other Treatment Yes No	 0 20	 0 20
Duration of cancer Diagnosis upto 1 year 1 to 3 years 3 to 5 years More than 5 years	 14 4 0 2	 16 3 1 0
Co-morbidities None Hypertension Diabetes Thyroid disorder Other	 14 5 3 0 0	 15 3 3 1 0

Measures

The Spielberger State-Trait Anxiety Inventory (STAI) is adopted to evaluate anxiety levels through two distinct dimensions: state anxiety, which pertains to anxiety experienced in response to specific events or situations, and trait anxiety, which reflects a general tendency towards anxiety as a personality trait. The inventory comprises a total of 40 items, divided equally between the two types of anxiety, with each type featuring 20 items.

Participants respond to each item using a 4-point Likert scale that measures the frequency or intensity of their feelings. The scoring for both state and trait anxiety ranges from 20 to 80, where higher scores indicate more intense anxiety and lower scores suggest less anxiety. The STAI has demonstrated robust reliability, with internal consistency coefficients ranging from 0.86 to 0.95 and test-retest reliability coefficients ranging from 0.73 to 0.86, underscoring its effectiveness in measuring anxiety.[15,16]

In the present study samples from both the groups filled in the STAI-State and STAI- Trait Scale before the intervention as a baseline level and after that Experimental group was given Yoga Nidra Intervention daily 30 min for 2 weeks and Control group was given routine treatment as usual without intervention. After 2 weeks post test was taken for STAI –state anxiety level.

Yoga Nidra Intervention

Audio recorded – Gujarati version which has a combination of music and dialogue was administered for a period of 30 minutes once in a day during cancer treatment interval regularly for 15 days in a group of 10 patients via use of speaker.[24]

Data Analysis

1. **Paired t-test**: This test was used to evaluate the effectiveness of Yoga Nidra among cancer patients admitted to Oncowin Cancer Center in Ahmedabad, Gujarat.

2. **Chi-square test**: This test was employed to examine the association between anxiety levels and selected demographic and clinical variables in the pre-test among cancer patients at Oncowin Cancer Center in Ahmedabad, Gujarat.

Result

The study findings indicated that in the experimental group, the mean state anxiety score at pretest was 52.4 ± 8.29, which decreased to 41.45 ± 6.14 at post-test, resulting in a mean reduction of 10.95.In the control group, the pretest mean state anxiety score was 51.15 ± 7.43, and at post test, it was 53.27 ± 8.26, showing a mean reduction of 2.12.The experimental group experienced a significant reduction in state anxiety levels compared to the control group.

Fig 1 A bar diagram illustrates the percentage distribution of state anxiety level among cancer patients in both the experimental and control groups during the pre-test.

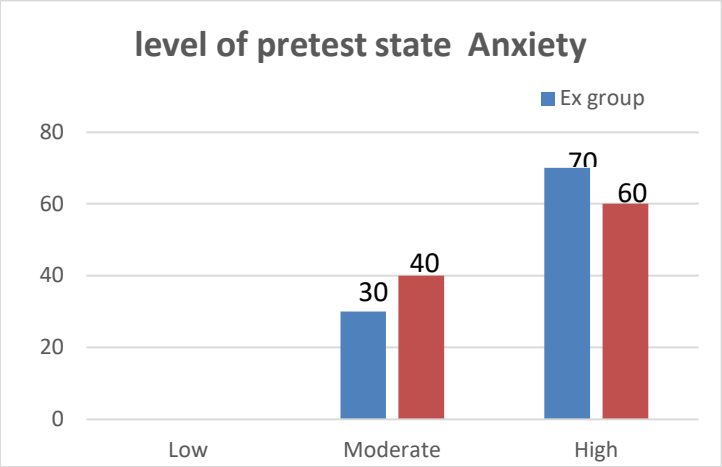


Fig 2 A bar diagram illustrates the percentage distribution of state anxiety levels among cancer patients in both the experimental and control groups during the post-test.

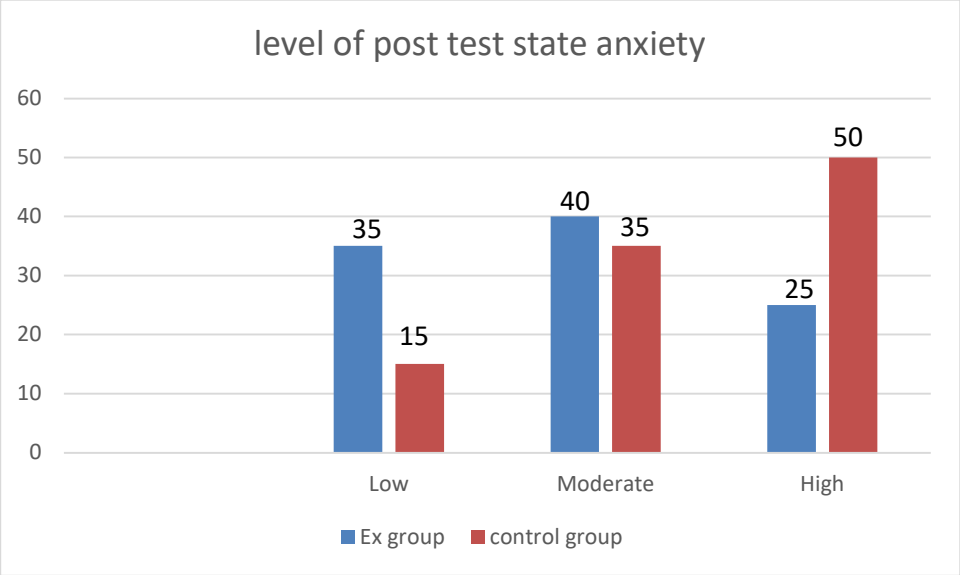
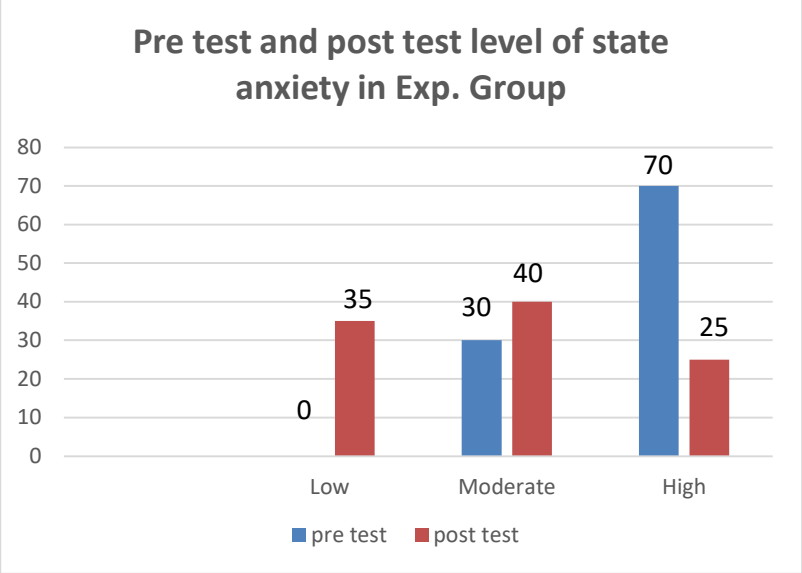


Fig 3 A bar diagram depicts the percentage distribution of anxiety levels among cancer patients in the experimental group for both the pre-test and post-test.



When finding association between pretest scores of state anxiety and selected demographic variables,

education level, Type of family and duration of cancer diagnosis have significant association with level of state anxiety.
When finding association between pretest scores of trait anxiety and selected demographic variables, education level, Type of family and duration of cancer diagnosis have significant association with level of trait anxiety.
When finding association between pretest scores of self esteem and selected demographic variables history of surgery have significant association with level of self esteem.

Discussion

This study assessed the impact of Yoga Nidra therapy on anxiety levels in cancer patients undergoing treatment. A notable reduction in anxiety was observed in the experimental group following Yoga Nidra intervention, demonstrating its effectiveness. The results suggest that Yoga Nidra may be a beneficial complementary therapy for managing anxiety in cancer patients.
A study on the therapeutic effects of Yoga Nidra revealed its efficacy in alleviating various mental health issues, including stress, anxiety, insomnia, post-traumatic stress syndrome, and psychosomatic disorders. Additionally, Yoga Nidra was found to be beneficial for managing physical conditions such as hormonal imbalances, pain related to diseases, migraines, and noncommunicable diseases like diabetes mellitus, hypertension, and cardiovascular conditions. The practice of Yoga Nidra not only enhances physical, mental, and social well-being but also serves as a preventive, promotive, and curative technique.[17]Yoga Nidra and pranayama reduces chemotherapy and Radiotherapy treatment related anxiety and depression in cervical cancer patients.[18]Yogasana, Pranayama, and Yoga Nidra may aid in cancer prevention for high-risk individuals by reducing oncogenic mutations. This can be achieved through the cessation of alcohol, tobacco, and opioids, as well as by addressing obesity.[19]Yoga Nidra is a proven method for enhancing sleep quality in cancer patients.[20]
Yoga Nidra has been shown to be effective in alleviating stress in women receiving curative radiotherapy for cervical cancer.[17] Additionally, Yoga Nidra offers preventive, promotive, and therapeutic benefits for managing stress and related issues such as worry, anxiety, and fear.[21] Yoga, as a whole, proves advantageous for cancer patients in addressing mood disturbances, fatigue, insomnia, stress, and enhancing overall quality of life.[22] Furthermore, interventions involving Yoga Nidra and Pranayama have significantly reduced anxiety and depression levels in patients with cervical cancer.[23]
While Yoga Nidra has demonstrated beneficial effects on symptom management, insomnia, stress, anxiety, worry, quality of life, pain management, and coping resilience, it is important to consider that the subjects in these studies were at different stages of treatment and had various diagnoses. This diversity in the study populations may influence the generalizability of the findings.
The findings highlight Yoga Nidra's potential as an effective intervention for reducing anxiety, which is crucial for improving the overall well-being of cancer patients. The significant decrease in anxiety levels in the experimental group underscores the therapeutic value of incorporating relaxation techniques into cancer care tailoring interventions based on individual needs and preferences.
Future research could explore the long-term effects of Yoga Nidra and its impact on other aspects of psychological and physical health in cancer patients. Additionally, examining the mechanisms through which Yoga Nidra influences anxiety could provide deeper insights into its benefits and help in optimizing therapeutic practices.Further research could build on these findings to explore the long-term benefits and effectiveness of Yoga Nidra in diverse cancer populations and treatment contexts.

Conclusion

The study assessing the effectiveness of Yoga Nidra on anxiety levels among cancer patients at the selected hospital demonstrated that Yoga Nidra significantly reduces anxiety. The intervention led to a notable decrease in anxiety levels among the participants, highlighting Yoga Nidra's potential as a

beneficial complementary therapy for managing anxiety in cancer patients. This suggests that integrating Yoga Nidra into cancer care may enhance patients' psychological well-being and support their overall treatment regimen.

Acknowledgements

I thank the participating patients, the hospital staff and trainer of Yoga Nidra for their invaluable support in this study.

References

1. Top 10 cancer states in India/2023 Cancer statistics in India by Prof.(Dr.) Arvind Kumar. Jan 11,2024
2. drarvindkumar.comhttps://drarvindkumar.com/blog/top-10-cancer-states-in-india-2023-cancer-statistics-in-india.php
3. Prager GW, Braga S, Bystricky B, Qvortrup C, Criscitiello C, Esin E, Sonke GS, Martínez GA, Frenel JS, Karamouzis M, Strijbos M, Yazici O, Bossi P, Banerjee S, Troiani T, Eniu A, Ciardiello F, Tabernero J, Zielinski CC, Casali PG, Cardoso F, Douillard JY, Jezdic S, McGregor K, Bricalli G, Vyas M, Ilbawi A. Global cancer control: responding to the growing burden, rising costs and inequalities in access. ESMO Open. 2018 Feb 2;3(2):e000285. doi: 10.1136/esmoopen-2017-000285. PMID: 29464109; PMCID: PMC5812392.
4. www.who.com
5. Debela DT, Muzazu SG, Heraro KD, Ndalama MT, Mesele BW, Haile DC, Kitui SK, Manyazewal T. New approaches and procedures for cancer treatment: Current perspectives. SAGE Open Med. 2021 Aug 12;9:20503121211034366. doi: 10.1177/20503121211034366. PMID: 34408877; PMCID: PMC8366192.
6. https://www.cdc.gov/cancer/data/index.html
7. Lewandowska A, Rudzki G, Lewandowski T, Rudzki S. The Problems and Needs of Patients Diagnosed with Cancer and Their Caregivers. Int J Environ Res Public Health. 2020 Dec 24;18(1):87. doi: 10.3390/ijerph18010087. PMID: 33374440; PMCID: PMC7795845.
8. Holland, J.C., &Alici, A. (2010). Management of distress in cancer patients. Supportive Oncology, 8, 4–12. doi:10.1016/j.euroneuro.2011.08.008
9. Stein KD, Syrjala KL, Andrykowski MA. Physical and psychological long-term and late effects of cancer. Cancer. 2008 Jun 1;112(11 Suppl):2577-92. doi: 10.1002/cncr.23448. PMID: 18428205; PMCID: PMC7047657.
10. Lewandowska A, Rudzki G, Lewandowski T, Rudzki S. The Problems and Needs of Patients Diagnosed with Cancer and Their Caregivers. Int J Environ Res Public Health. 2020 Dec 24;18(1):87. doi: 10.3390/ijerph18010087. PMID: 33374440; PMCID: PMC7795845.
11. American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.)
12. Arıkan, Fatma &Kartöz, Funda &karakuş, Zeynep &Altınışık, Müge & Ozer, Zeynep & Şahin, Aylin. (2024). Body image and social appearance anxiety in patients with cancer undergoing radiotherapy: a cross-sectional study. BMC Psychology. 12. 10.1186/s40359-024-01856-w.
13. Danhauer SC, Addington EL, Sohl SJ, Chaoul A, Cohen L. Review of yoga therapy during cancer treatment. Support Care Cancer. 2017 Apr;25(4):1357-1372. doi: 10.1007/s00520-016-3556-9. Epub 2017 Jan 7. PMID: 28064385; PMCID: PMC5777241.
14. Parker S, Bharati SV, Fernandez M. Defining yoga-nidra: traditional accounts, physiological research, and future directions. Int J Yoga Therap. 2013;23(1):11-6. PMID: 24016819.

15. D'cunha R, Pappachan B, D'souza OL, Tonse R, Elroy Saldnha E, Baliga MS. Effectiveness of yoga nidra in mitigating stress in women undergoing curative radiotherapy for cervical cancer. Middle East J Cancer.2021;12(1): 117- 27.doi:10.30476/ mejc.2020.82648. 1093.
16. Spielberger, C. D. (1983). *Manual for the State-Trait Inventory STAI (Form Y)*. Palo Alto, CA: Mind Garden.
17. Spielberger, C. D. (1983). Manual for the State-Trait Anxiety Inventory (STAI). PaloAlto, CA: Consulting Psychologists Press..
18. MGWR Kumari, HKBMS Karunaratne. Therapeutic effects of Yoga Nidra: a review. Int J Health Sci Res. 2022; 12(12):148-153. DOI: https://doi.org/10.52403/ijhsr.20221224
19. Nuzhath FJ, Patil NJ, Sheela SR, Manjunath GN. A Randomized Controlled Trial on Pranayama and Yoga Nidra for Anxiety and Depression in Patients With Cervical Cancer Undergoing Standard of Care. Cureus. 2024 Mar 9;16(3):e55871. doi: 10.7759/cureus.55871. PMID: 38595893; PMCID: PMC11002714.
20. Katru P, et al. Preventive Effect of Yogasana (Yogic poses), Pranayam (Yogic Breathing Techniques) and Yoga Nidra on High-Risk People for Cancer: A Critical Review. Jour Clin Med Res. 2021;2(2) :1-17. DOI: http://dx.doi.org/10.46889/JCMR.2021.2207
21. Anand, Divya N. Ms; George, Linu Sara Dr; and Raj, Anil Mr (2015) "Effectiveness of Yoganidra on quality of sleep among cancer patients," Manipal Journal of Nursing and Health Sciences: Vol. 1: Iss. 1, . Available at: https://impressions.manipal.edu/mjnhs/vol1/iss1/8
22. Chauhan A. (2020). Yoga Nidra: a yogic technique against stress. *International Journal of Indian Psychology*, *8*(4), 471-476. DIP:18.01.057/20200804, DOI:10.25215/0804.057
23. Lin, Kuan-Yin, Hu, Yu-Ting, Chang, King-Jen, Lin, Heui-Fen, Tsauo, Jau-Yih, Effects of Yoga on Psychological Health, Quality of Life, and Physical Health of Patients with Cancer: A Meta-Analysis, *Evidence-Based Complementary and Alternative Medicine*, 2011, 659876, 12 pages, 2011. https://doi.org/10.1155/2011/659876
24. Nuzhath, F.J. & Patil, Nj & Sheela, s & Manjunath, G.N.. (2023). Yoga for Improving the Quality of Life in Cervical Cancer During COVID-19: A Narrative Review. International Journal of Zoological Investigations. 9. 76-82. 10.33745/ijzi.2023.v09ispl1.011.
25. Swami Satyananda Saraswati, Yoga Nidra, First digital edition 2016,Yoga Publications Trust, Munger, Bihar, India, ISBN eMOBI: 978-93-84753-29-0, Website:www.biharyoga.net