

Yoga as a Complementary Therapy to Reduce Cancer Related Fatigue (CRF) among Adults Impacted by Anti-Cancer Treatment: A Literature Review

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Purpose

The purpose of this literature review is to evaluate the effectiveness of yoga in decreasing cancer-related fatigue (CRF) among adults impacted by treatment for a cancer diagnosis.

Background

Cancer-related fatigue (CRF)

- Occurs in up to 80-90% of patients receiving chemotherapy and radiation.⁴
- Defined as a “distressing, persistent, subjective sense of physical, emotional, and/or cognitive tiredness or exhaustion related to cancer or cancer treatment that’s not proportional to recent activity and interferes with usual functioning” -National Cancer Institute.⁹
- New cases of cancer are estimated to reach 21.4 million per annum globally by the year 2030. ¹⁴

Yoga

- According to Oncology Nursing Society (ONS), many cancer centers across the United States offer yoga as an adjunct to conventional cancer treatment. ⁷
- There is a growing body of evidence supporting that yoga can mitigate fatigue.³

Methods

Electronic Database Searches:

- PubMed and CINAHL were searched in June 2019.
- Search terms: **yoga, cancer, fatigue, cancer fatigue, & neoplasm.**
- Search limits: published in English, full text available, published within 10 years.
- Yielded approximately 150 articles of relevance.
- Three systematic reviews and nine randomized control trials were selected.

Results

Study	Location	Design	Key Findings
Ben-Joseph et al. ¹	University of Pennsylvania, U.S.A.	Randomized Phase II Study	Prostate cancer patients who completed yoga reported less fatigue ($p < .0001$)
Bower et al. ²	University of California Los Angeles, U.S.A.	Randomized Control Trial (RCT)	Fatigue declined from baseline to post-yoga ($p = .032$)
Chaoul et al. ⁴	University of Texas, MD Anderson Cancer Center, U.S.A.	Randomized Control Trial (RCT)	Participating in Tibetan yoga program (TYP) during chemotherapy: modest short-term benefits with sleep quality and long-term benefits noted over time (who practiced TYP $\geq 2x/\text{week}$)
Cramer et al. ⁵	U.S.A.	Cochrane Library Systematic Review	Positive effect on the yoga intervention (SMD -0.48, 95% CI -0.75 to -0.20)
Dong et al. ⁶	Soochow University, Suzhou, People's Republic of China	Meta-analysis	2,183 participants; yoga had slight, yet statistically significant effect on decreasing fatigue in breast cancer patients
Lotzke ⁸	Munich, Germany	Randomized Control Trial (RCT)	Yoga (YI) may have beneficial effects on QOL issues in women with stage I-III breast cancer during neoadjuvant cytotoxic; no significant difference in CRF
Sadja et al. ¹⁰	San Diego, U.S.A.	Systematic Review of Randomized Control Trials (RCT)	Yoga may be beneficial for reducing CRF among breast cancer patients
Sohl et al. ¹¹	Vanderbilt University Medical Center & Wake Forest School of Medicine, U.S.A.	Randomized Control Trial (RCT) Pilot Study	Yoga Skill Training (YST) is feasible among patients receiving chemotherapy for colorectal cancer
Sprod et al. ¹²	University North Carolina at Wilmington, U.S.A.	Randomized Control Trial (RCT)	Reduced CRF after 4-weeks of YOCAS® program ($p < 0.05$)
Stan et al. ¹³	U.S.A.	Randomized Control Trial (RCT) Pilot Study	Yoga and strengthening exercises can decrease CRF
Taso et al. ¹⁴	Kaohsiung City, Taiwan	Randomized Control Trial (RCT)	Yoga experimental group benefitted significantly more than control ($p < .05$)
Vadiraj et al. ¹⁶	India	Randomized Control Trial (RCT)	Yoga reduces fatigue frequency ($p < 0.001$), fatigue severity ($p < 0.001$)

Conclusions

- The range of **p values was .0001 to .05**.
- Outcomes support yoga's effectiveness on CRF among breast cancer patients and survivors.
- Results lack in agreeance of statistical significance, implications in clinical practice, and data involving participants with multiple forms of cancer.

Implications for Practice

- Evidence supports yoga is a beneficial complementary therapy for alleviation of CRF for patients impacted by breast cancer and survivors of breast cancer.
- Further research is warranted to evaluate if other cancer patient populations have similar outcomes.

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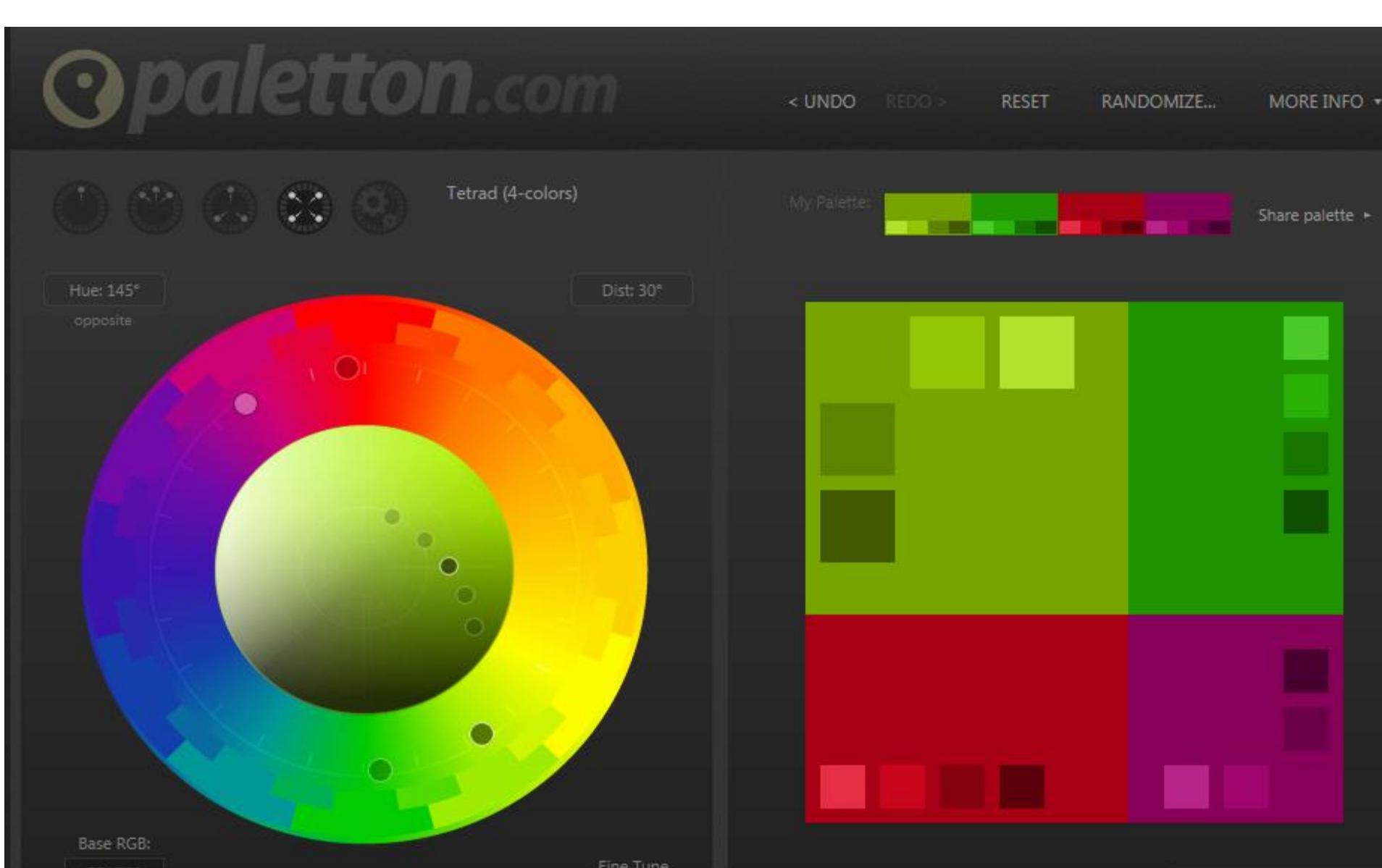
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Inserting Shapes

- “Insert” “Shape” and then “Insert” “Text Box” inside shape (make Heading and Body in different Text Boxes) for more stylistic design
- Right click within shape to “Format Shape” to change color of background/fill
- Do not “fill” color of text box, only the shape

Color Schemes

Palletton.com can help to find suitably matched/complementary primary and secondary colors (outer band of circle) and color saturation/intensity (inside circle) to be used for filling shapes (**you cannot change the background color of poster**). First, pick the number of colors at the top left of the screen. Once you determine the preferred RGB color numbers (click within the right-handed square box for color info to find the Red, Blue, and Green numbers of each shade), you can select the corresponding color under “Format” and “Shape Fill-” look for “More Fill Colors” and enter color numbers from Palletton.com color box.



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Photographs

- Inserting photos: copy and paste or “Insert” “Picture” to pull in from saved file.
- Click on “Format” tab after clicking on photo to put on frames or other stylistic improvements.
- Public Domain photos- Google: “Images”- put in search- “Settings”- “Advanced Search”- change “Usage Rights” to images “free to use or share, even commercially”; click on the photo, then right click to copy or save to insert into poster. Public Domains Wikimedia Commons or Creative Commons are good options.
- Should not increase size of photo once inserted, because it will then decrease the quality of image.

Graphs

- Risk of pixilation issue/blurriness if pulled in as a picture from another program. Instead, “Insert,” “Chart” and pick type of graph. It will open an Excel spreadsheet to enter data.
- Under “Design” tab, you can change the appearance of the graph
- Click on one of the bars of the graph and then right click- format series and change the solid fill to another color to adjust to color style of poster
- Click on legend or x/y axis headings and then increase font size from “Home” tab as needed
- Click on graph lines and press “delete” key to remove lines in the back of the graph as needed
- In “Layout” tab after clicking on graph- can create a chart title (change font size same as legend), change title of x/y axis, move location of legend, and put data numbers inside of each data set
- Try not to duplicate date (so if you have the data numbers within the bars, you do not need it on the axis as well)
- Do not include all data results but just the most important ones