The Effects of 5K Distance Running on the Recovery of Female Breast Cancer Patients Post-Chemotherapy Aged 18-65

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Abstract

Purpose: The purpose of this study was to investigate the effects that an aerobic form of exercise, such as a 5K distance run, had on the recovery of breast cancer patients after they had gone through chemotherapy.

Methods: Hospitals were contacted and told to provide information regarding this study to their patients who were completing their last round of chemotherapy and being discharged. Out of all who were informed, 300 volunteered for participation. This group of 300 was split in half with 150 participants participating in the aerobic exercise and the other 150 continuing life without exercise intervention. Both groups filled out the CDC's "Health Related Quality of Life" (CDC HRQOL) survey to track the improvement of their condition. The responses recorded within the surveys were used to track the recovery time and the decrease in side effects.

Conclusion: Limitations to this study included the health and quality of life of the participant, the distance the patient needed to travel if part of the exercise group, and the reliability on the patient to not only complete, but to honestly complete the HRQOL survey.

Introduction and Review of Literature

- 1.6 million people are diagnosed with cancer in the United States every year.
- 16% of these cases are patients diagnosed with breast cancer (CDC, 2022).
- Chemotherapy is a treatment method that utilizes strong chemicals to kill rapidly growing cells within the body. Common side effects of chemotherapy include fatigue, nausea, pain, loss of appetite, and most infamously, hair loss (Mayo Clinic, 2022).
- A negative correlation between the length of recovery and the activity level of an individual can be observed often amongst breast cancer patients (Lee et al., 2017).
- Patients who led active lifestyles before diagnosis were shown to have a shorter recovery period and those who continued to stay active during treatment were able to combat the symptoms of chemotherapy (Lee et al., 2017).
- Positive correlations between increased aerobic exercise and personal well-being was found in patients who chose to stay aerobically active (An et al., 2020).
- Exercise is shown to shift a person's focus from their pain once they begin physical activity (Andersen et al., 2014).

Methods

Participants: 300 voluntary breast cancer patients, ages 18-65.
(150 exercise participants and 150 control participants).
Personnel: 100 volunteers, 15 athletic trainers, 10 physicians, and 5 physical therapists.
Research Design: Quantitative survey for both groups (Likert Scale CDC-HRQOL).
Independent Variable(s): Patient health, quality of life, physical fitness, and availability.
Dependent Variable: Decreased prevalence in the side effects of chemotherapy.
Data Analysis: Non-parametric data and Spearman's rank-order correlation.

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- Hospitals were contacted and asked to provide patients who had recently completed chemotherapy with information about this study.
- 300 patients, who passed the exclusion criteria (listed below), volunteered
  - >250 lbs
  - No cardiovascular disease
  - No musculoskeletal disease
  - Not pregnant or planning to be

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- The participants were split in half randomly for the course of 16 weeks.
  - 150 patients placed into the exercise group.
  - 150 patients placed into the control group.
- The participants filled out an HRQOL survey prior to beginning the exercise intervention.

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- The 150 exercise participants would attend two sessions per week where they would run/jog a 5K at their own pace.
  - RPE (6-20 on Borg Scale) would be recorded throughout the session.
  - Blood pressure and heart rate were taken 3 times total, before, during, and after the running session.

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- Every two weeks the participants would fill out the HRQOL.
  - A total of 8 surveys were completed throughout the course of the study.
  - Both groups would complete the surveys to track differences between the exercise and control populations.
  - In addition of the surveys, dietary recommendations were given to the participants

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- The data collected from the surveys were used to analyze correlations between 5K distance running and the following…
  - Decreased fatigue and weakness.
  - Decreased nausea and pain.
  - Decrease confusion, stress, anxiety, and depression.
- Length of recovery, post chemotherapy, was also analyzed.

Operational Definitions

- **Aerobic Exercise**: A type of physical activity that requires the use/presence of oxygen that leads to an increase in heart rate and physical fitness (The National Cancer Institute, 2022).
- **Breast Cancer**: A form of uncontrollable cell growth that occurs in the breast tissues of both males and females, however male breast cancer is rare (American Cancer Society, 2022).
- **Chemotherapy**: Anti-cancer drugs that are given intravenously or by mouth that travel via the blood stream to reach cancer cells and kill them (American Cancer Society, 2022).

Limitations

- Distance a participant would need to travel to the site of the exercise intervention.
- Participants previous lifestyle in terms of exercise and diet.
- Ongoing side effects of chemotherapy.
- Participant quality of life and the state of their mental health

Each of the above limitations could lead to patients removing themselves from the study or deciding not to volunteer at all

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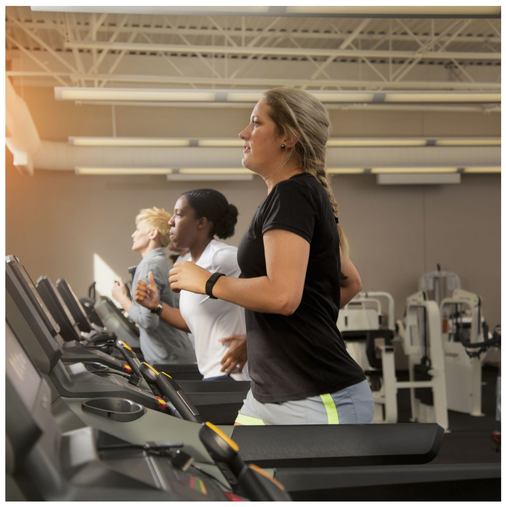

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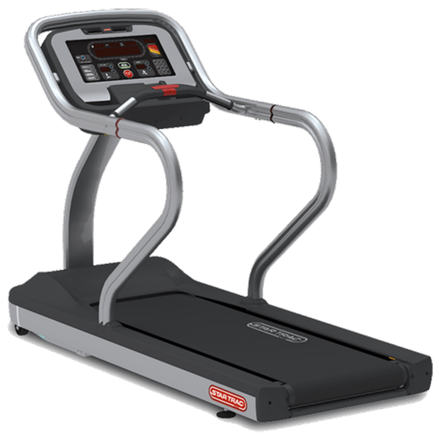

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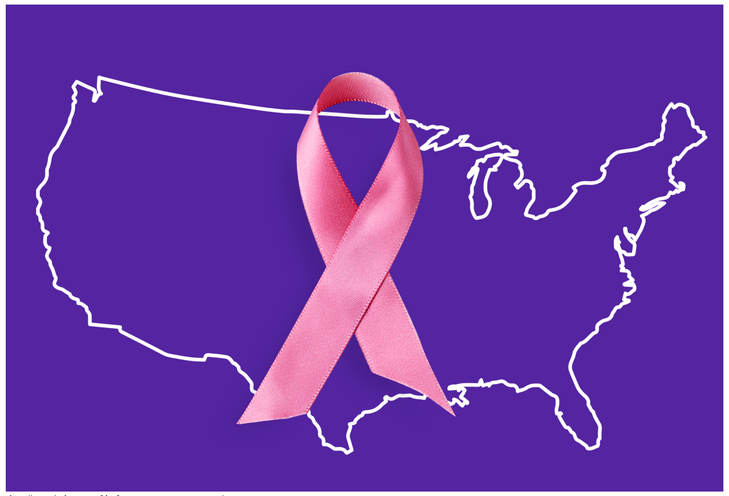

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