USABILITY OF EXERCISE WEBSITE FOR BREAST CANCER SURVIVORS

Learning Design and Technology
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- Grab your phone or computer
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- Insert code:
  
  84 54 9

- Or scan the QR code
Exercise Changed My Life

1. Master’s degree candidate in Learning Design and Technology
2. Interested in developing cancer survivorship programs
Table of Contents

RESEARCH BACKGROUND

- Problem statements
- Literature review
- Purpose statement
1 in 8 women in US is diagnosed with breast cancer

Existing programs focus on treatments, not long-term care and quality of life

Patients are lost in transition to survivors

PROBLEM STATEMENT 2

Barriers to exercises

- 74% of survivors remains minimally active
- 4 main attributions to their inactivity
  - Fatigue, pain
  - Fears of injuries, unfamiliarity with sports
  - Limited access & time
  - Financial difficulty
**Problem Statement 3**

- All exercises cannot be beneficial
- Different medical condition from others
- Survivors are at high risk of a potential injury
- Carefully designed exercises approved by medical professionals needed
LITERATURE REVIEW

Decrease barriers
- Increase time flexibility
- Lesson accessibility
  (Watkins Davis and Oakley-Girvan, 2017)

Applicable exercises
- Balance 3 essential trainings
  (Curry et al., 2019)
- Incorporate safety guidelines with American College of Sports Medicine Roundtable
  (Schmitz et al., 2010)
- Provide familiar situation with Case-Based Learning (McLean, 2016)

Satisfy users
- Inspect design with Nielsen’s Heuristics
  (Nielsen, 1995)
- Evaluate with Krug’s Usability test (Krug, 2010)
PURPOSE OF STUDY

To evaluate the ease-of-use of the navigation and the exercise plan in the exercise guide program for breast cancer survivors to help them meet 150 minutes a week exercise requirement recommended by the World Health Organization (WHO).
METHODOLOGIES

- Research questions
- Content map
- Recruitment
- Procedures
- Study Design
RESEARCH QUESTIONS

(1) How easy is it to find suitable exercise safety guidelines once they select their exercise types?

(2) How easy is it to create their exercise weekly plan to adhere to learned exercise types?
Recruitment

- Hard to recruit qualified participants
- January to February, 2019 for 6 weeks
- Breast cancer support groups in offline AND online
  - Struggling to recruit participants with first group
  - Add second group under IRB modification approval
PARTICIPANTS

- 6 breast cancer survivors & 4 co-survivors
- 100% female
- 5 out of 6 are young survivors
- No treatment plans
- Physically able to exercise
- Capable of collecting exercise resources
- Supportive to survivorship program via online & offline
Procedures
Evaluation instruments

- 1 person per session
- 3 sessions per round
- Total 3 rounds held

One-on-one Session

- Pre-Questionnaire
- Post-Questionnaire
- Set up
- Wrap up
- Interview
  - Preliminary
    - Task questions
  - Non verbal actions observed
  - Interview questions
- Procedures
  - 1 person per session
  - 3 sessions per round
  - Total 3 rounds held

Google Forms

● 1 person per session
● 3 sessions per round
● Total 3 rounds held
Nielsen’s Heuristic Evaluation Principles
1. Minimalist
2. Matching real-life
3. Consistency
4. Service to help
5. User control
RESULTS

- Participant data
- Task data
- Observation data
- Comments
PARTICIPANTS

- 90% of them are exercising
- Mostly engage in aerobics
- Flexibility and resistance are less popular
- A balanced exercise plan needed

A List of Exercises That Participants Are Engaging
TASK DATA

- Evaluated with 6 Likert scale during 3 rounds
- Navigation and effectiveness of the website usability gradually improved throughout 3 rounds
- Difficulty of Task 3 remained same score during 3 rounds
OBSERVATION DATA

- Cosmetic problems in visual design
- Minor problems in exercise fillable form
- Major problem in exercise navigation

Nielsen’s severity scales
PARTICIPANT COMMENTS

“Information should be given right away.”

“Can I track down my records?”

“Stories are relevant to me”

“Focus on what to avoid.”

“It is a motivation Builder.”
• Research answers
• What I learned
• Further study

DISCUSSION
(1) How easy is it to find suitable exercise safety guidelines once they select their exercise types?

Safety guidelines would be easily found if its page was separately relocated from exercise types.
(2) How easy is it to create their exercise weekly plan to adhere to learned exercise types?

Users suggested that the plan form would be easier with more user control options in exercise choices.
What's your goal(s) to exercise?
I want to...

How long do you plan to exercise?
Choose your time plan

No options for you? make your own choice.

Monday Plan

SELECT A DATE

Yoga [ ]
Lymphedema Stretching [ ]
Tai-chi [ ]

Brisk Walking [ ]
Zumba [ ]
Jump rope [ ]

Band Exercise [ ]
Weight Lift [ ]

VIEW MORE
Make Technology Friendly

- Using unfamiliar technology was cumbersome
- Technology should be a service, not an obstacle
- Easy-to-access features

Simplicity & User-interaction

- Give users more power to control
- Remove unnecessary buttons to prevent confusion
New Trends

- New trends are made with younger survivors
- Customize their needs and preference
- Focus on balanced exercises

90% vs 30%
Thank you for your presence. Special thanks for Dr. Fulford and my critical friends: Yu-Chieh and Joseph. Any questions or suggestions are appreciated.
References:


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https://www.thegoodbody.com/fitness-statistics/#infographic
https://www.popsugar.com/fitness/-Home-Cardio-HIIT-Workout-41266207