

Physical Activity Maintenance and Secondary Condition Prevalence

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November 6th, 2007

Exercise Programs and Health Promotion for Unserved and Underserved People with Mobility Impairments

Sponsored by the Missouri Foundation for Health

MFFH fund # 40779



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“Regular participation in exercise has been proven to significantly reduce the risk for several chronic diseases; yet the majority of the population [with a disability] does not exercise or maintain healthy lifestyles”

Froelich-Grobe & White, 2004, p640

Introduction: Benefits of Exercise

- Reduces the risk of
 - dying prematurely
 - dying from heart disease
 - developing diabetes
 - developing high blood pressure
- Reduces feelings of depression and anxiety
- Helps control weight
- Helps build and maintain healthy bones, muscles, and joints
- Promotes psychological well-being

Introduction: Prevalence

- US Census Reports 51.2 million Americans have some level of disability (U.S. Census Bureau, 2002)
- 63.1% reported Fair/Poor Health Status (U.S. Census Bureau, 2002)
- 53% of individuals with disabilities lack in physical activity compared to 34% of individuals without disabilities (<http://www.cdc.gov>-*At a Glance: Disability and Health: Promoting Health and Well-being of People with Disabilities 2005*)
- 25 million people with ambulatory disability (U.S. Census Bureau, 2002)

Introduction: Healthy People 2010

Chapter 6 Disability and Secondary Conditions

- **Goal:** Promote the health of people with disabilities, prevent secondary conditions, and eliminate disparities between people with and without disabilities in the U.S. population.
 - 6-4: Increase the proportion of adults with disabilities who participate in social activities
 - 6-10: Increase the proportion of health and wellness and treatment programs and facilities that provide full access for people with disabilities

Background: Health Belief Change Models

- Health Belief Change Theories
 - Trans-theoretical Model
 - Health Belief Model
 - Social Cognitive Theory
- “Exercise behaviors is a complex of different behaviors” (Adams & White, 2005, p. 240)
- Gaps in the literature
 - Do not adequately consider a person’s functioning within environment
 - Lack of integration among environmental factors, motivational factors, and personal health indicators

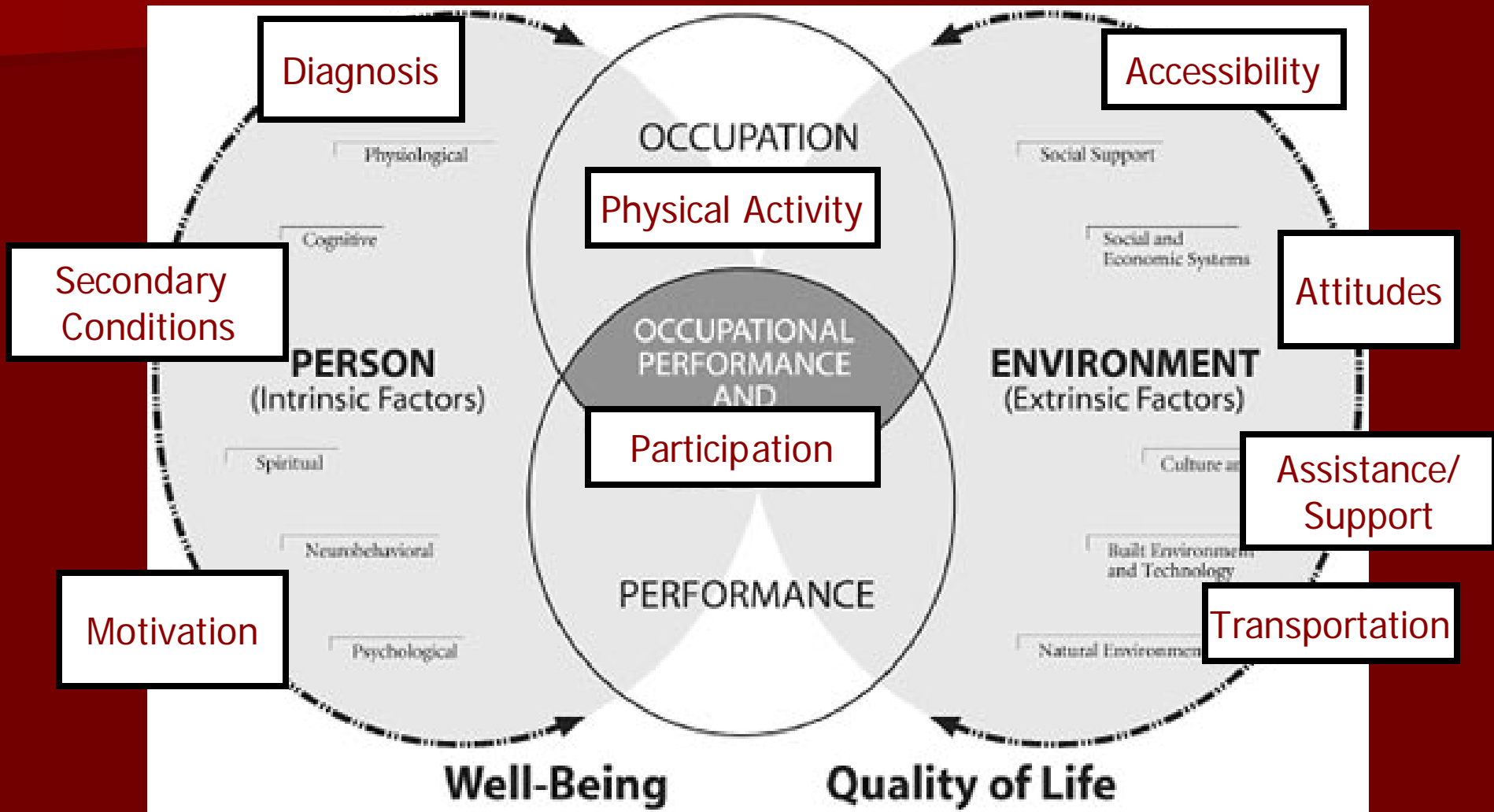
Nieuwenhuijsen, ER., Zemper, E., Miner, KR., & Epstein, M., (2006); Kosma, Cardinal, & Rintala, 2002; Adams & White, 2005.; Kosma, M, Cardinal, BJ., & Rintala, P. , 2002

Background: Health, Exercise & Participation

- 97% of adults experienced limitations in daily activities
- An average of 13 secondary conditions/year
- Psychological benefits include
 - Decreased anxiety and depression
 - Positive improvements in emotions, self-esteem, and self-confidence
- Gaps in the literature
 - Exercise and the impact on participation/occupations
 - Understanding all the factors that enable physical activity for individuals with disabilities
 - Maintenance of exercise after intervention

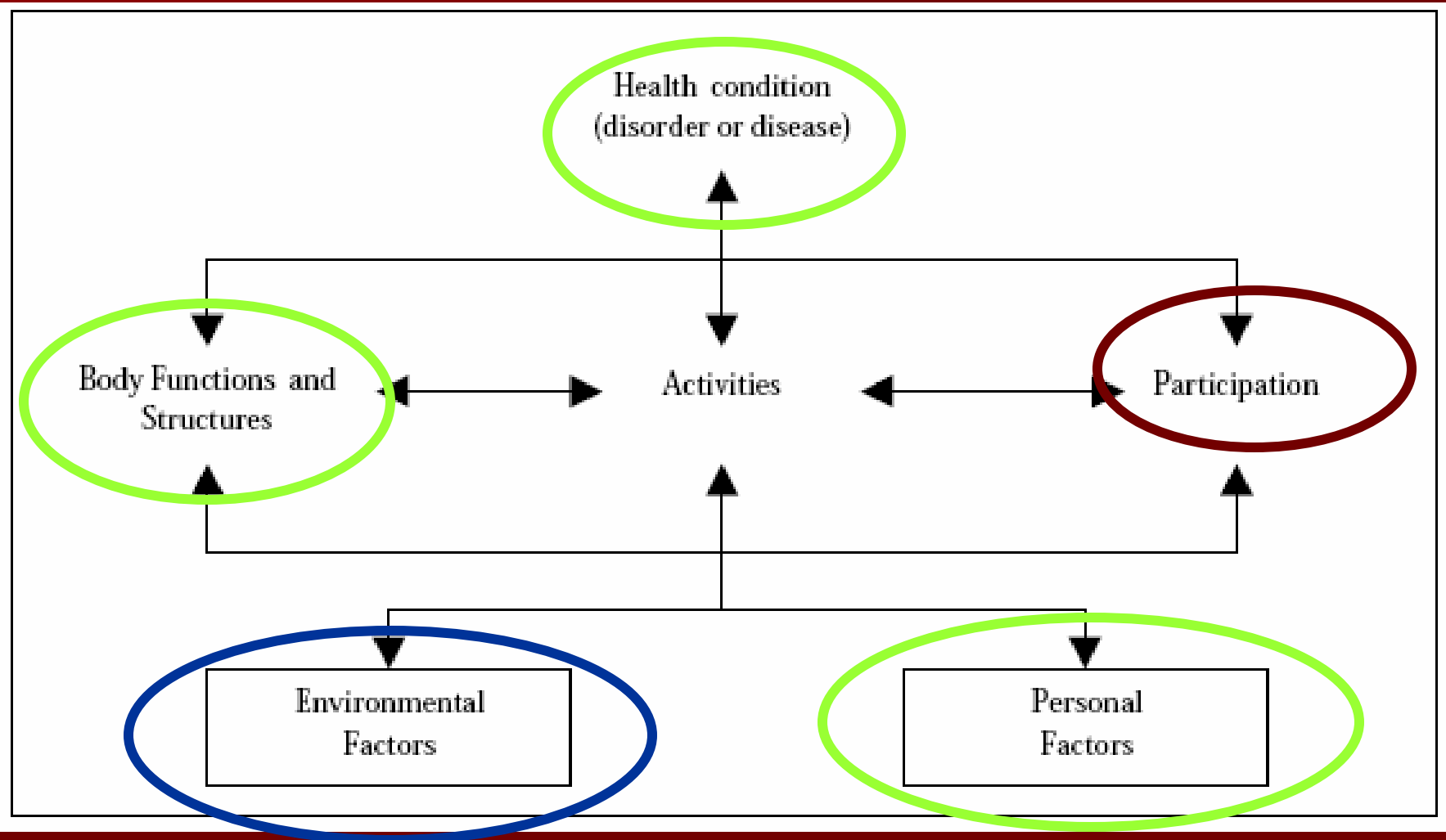
Cardinal et al., 2003; Coyle et al., 2000; Froelich-Grobe & White, 2004; Rimmer et al., 2004; Charlifue et al., 1999; Maher, et al., 1999; Kinne, et al., 1999

PEOP Model



Baum & Christiansen, 2005

International Classification of Functioning, Disability and Health (ICF)



World Health Organization, 2001

Study: Purpose and Aims

- To identify key barriers and facilitators that influence exercise maintenance after participation in a 12 week exercise program and to understand the long term effects of exercise for individuals with a disability.
- **Aims:**
 - To determine the common barriers and facilitators to exercise maintenance
 - To evaluate the long term effects of exercise on secondary conditions
 - To evaluate the long term effects of exercise on participation

Study: Operational Definitions

- Exercise Maintenance—Self Report
 - Have you exercised in the last 3 months?
 - Yes or No
- Secondary Conditions—Self Report
 - 17 conditions
 - Report
- Participation—Self Report
 - PARTS/M
 - 6 domains
 - Choice, satisfaction, and importance

Research Question 1: Barriers to Exercise

- What are the main reasons for not maintaining participation in an exercise program?

Hypotheses 1: Exercise and Secondary Conditions

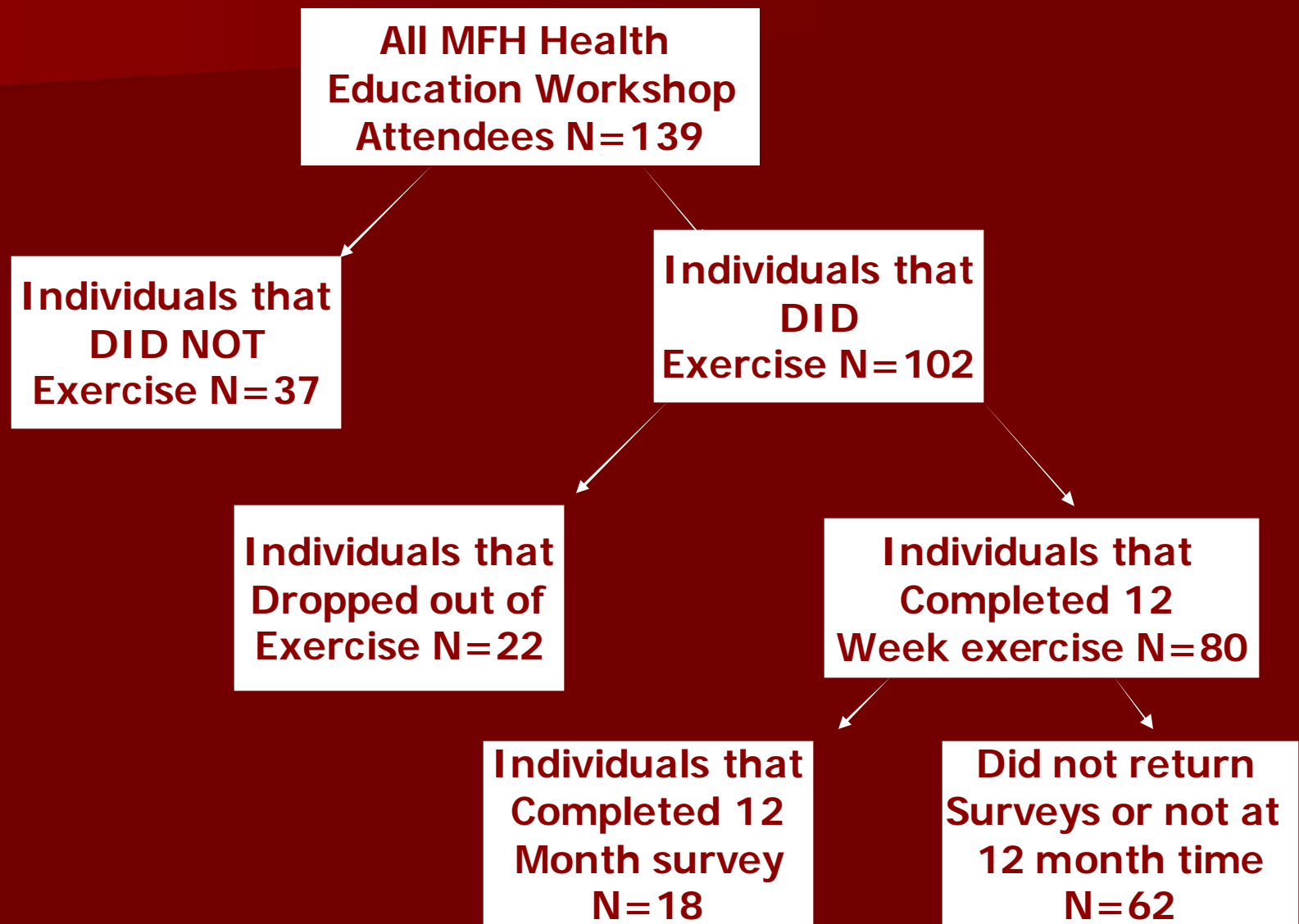
- Participants who maintain exercise will continue to show positive changes with the prevalence of secondary conditions

Hypotheses 2: Exercise and Participation

- Participants who maintain exercise will continue to show positive changes in participation (EQOP score)



Study Participants: Inclusion Criteria



Study Materials: Health Information

- Health Handbook 5 parts:
 - Part 1: Healthcare Provider Forms
 - Part 2: Health History
 - Part 3: Secondary Conditions
 - Part 4: Screenings & Vaccinations
 - Part 5: Other Important Papers

Study Materials: Exercise Equipment

■ Strengthening

- Uppertone
- Equalizer

■ Endurance

- Arm/Leg Ergometer
- APT
- Vitaglide
- MotoMed



Study Measures

- CORE questionnaire
 - Demographic Questions (age, race, education, income)
 - Secondary Condition Questionnaire
- PARTS/M
 - 6 domains of participation
 - Self-Care
 - Mobility
 - Domestic Life
 - Interpersonal interaction & relationships
 - Major Life Areas
 - Community, Social and Civic Life
 - EQOP: choice, satisfaction, and importance

Study Design

- Study is a quasi-experimental, repeated measures design to evaluate the factors that predict exercise maintenance of people with mobility impairments.

T1 - Baseline measure

T2 - 4 month measure

T3 - 8 month measure

T4 - 12 month measure

Study Interventions

- T1: MFH Health Education Workshop
 - Received Health Handbook
 - Completed initial survey (T1)
 - Exercise (Yes or No)

- T2: After 12 Week Exercise Intervention
 - Minimum of 1x/week
 - Maximum of 3x/week
 - Complete 4 month survey (T2)

- T3 & T4: Since Exercise Intervention
 - Exercise at EMC, home, or community facility
 - Complete the survey at
 - 8 month (T3)
 - 12 month (T4)

Results: Demographics

N= 18	Population %
Gender Female	61.1
Age 18-44 45-64 65 and over	38.9 44.4 16.7
Race/Ethnicity African Americans Caucasian Hispanic	38.9 55.6 5.5
Primary Disability SCI CP Arthritis/RA Other	17.6 29.4 11.8 41.2
Primary Mobility Device Power Wheelchair Manual Wheelchair Scooter Cane , Crutch, Walker	38.9 22.2 5.6 33.3

Results: Exercise Demographics

N=18	Population %
Exercise past 3 months Yes No	66.7 33.3
Number of time per week None 1-2 times/week 3-4 times/week	33.3 50.0 16.7
Description of exercise Light exercise Moderate exercise Vigorous exercise No exercise	8.4 33.3 25.0 33.3

Results: Research Question 1

Barriers to Exercise

- Thirteen of 18 maintained exercise (23.5%)
- Reasons for not exercising:
 - Transportation
 - Membership Costs
 - Medical Condition
- 3 PW users and 2 CCW

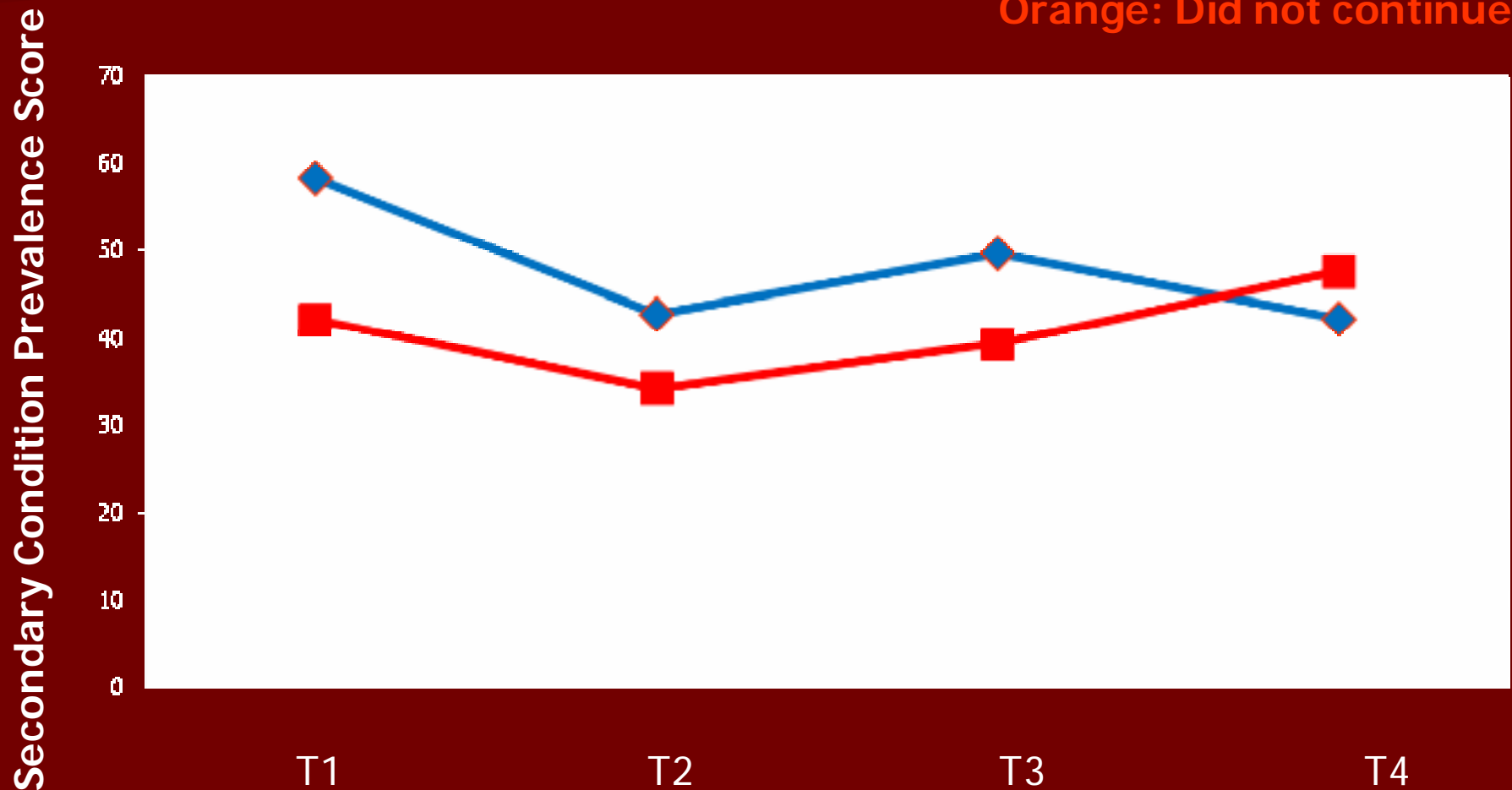
Results: Research Question 1

Barriers to Exercise (N=5)

- 0% Don't have time
- 0% Facility not accessible
- **20% Can't afford membership**
- 0% Facility does not have accessible equipment
- 0% Can't get assistance needed
- **20% Medical condition**
- **20% No transportation to facility**
- **20% Can't afford transportation**
- 0% Other reasons

Results: Hypothesis 1 – Exercise & Secondary Conditions

Blue: Continued exercising
Orange: Did not continue



Results: Hypothesis 2 – Exercise & Participation

■ Trends

- Participation scores improved after 12 week exercise program for both groups
- Individuals that continued to exercise maintained participation scores
- Individuals that did not continue in the exercise program also maintained their participation scores

Limitations

- Small 'N'
- Low return rate of surveys
- Study Measures
- Participant Sample

Recommendations

- Assess the client
 - Determine Person-Environment factors
 - Barriers and facilitators
- Assess the community
 - Accessible sites
 - Affordable sites
- Develop a client specific physical activity intervention based upon assessment

Study: Discussion

- Discussion
 - Still unsure of what factors predict exercise maintenance
 - Continuation in exercise does show maintenance in
 - Levels of secondary conditions prevalence
 - We do need to address both intrinsic and extrinsic factors

Future Directions

- Include a measurement of motivation or exercise readiness
- Larger sample size
- Define exercise maintenance more specifically
- Add more qualitative data

Thank You!

- Dr. Gray
- Dr. Holly Hollingsworth
- Kerri Morgan
- Denise Curl
- EMC staff!
- Jackie, Molly, & Keri fellow OTD students
- Gray Lab Research Assistants

