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The Association Between Type-2 Diabetes Pathophysiology & Exercise Adherence

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The Association Between Type-2 Diabetes Pathophysiology & Exercise Adherence

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Background

- The American Diabetes Association estimates that one in three Americans will develop diabetes in their lifetime.
 - Currently, ~28 million Americans have Type-2 diabetes
- Exercise is associated with the prevention and management of Type-2 diabetes and related comorbidities
 - Increased physical activity is often prescribed as part of the first course of treatment
 - Only ~50% of those diagnosed with Type-2 diabetes exercise regularly
- The current exercise prescription guidelines for individuals with Type-2 diabetes are similar to those recommended for healthy adults
 - Additional considerations include monitoring of blood glucose and monitoring for complications that could result from diabetes related comorbidities
- This may not be the best approach to exercise prescription for this cohort as Type-2 diabetes can cause physiological changes that could drastically influence a person's exercise experience.

Purpose

The purpose of the current study was to explore biopsychosocial barriers to exercise in persons with Type 2 diabetes mellitus. This valuable information can be used to better develop intervention and outreach programs geared towards increasing exercise adherence in individuals with Type-2 diabetes.

Methods

- Individuals 18 years and older diagnosed with Type-2 diabetes were eligible for participation
- Qualitative and quantitative data was collected using three following:
 - In-person focus group
 - ~90-minute group lead by trained interviewer
 - Individual phone interviews
 - ~20 minutes with a trained interviewer
 - Electronically distributed self-report survey
- Questions in all formats addressed Type-2 diabetes management, exercise history, and the barriers to exercise, as well as demographics, health history, and COVID-19 pandemic related questions.

Results

Format	Participants	Sex and Age Range
Focus Group	3	F 100%: 61 – 68years
Individual Interviews	5	F 100%: 57 – 64 years
Self-Report Survey	9	M 67%, F 33%: 52 – 75 years

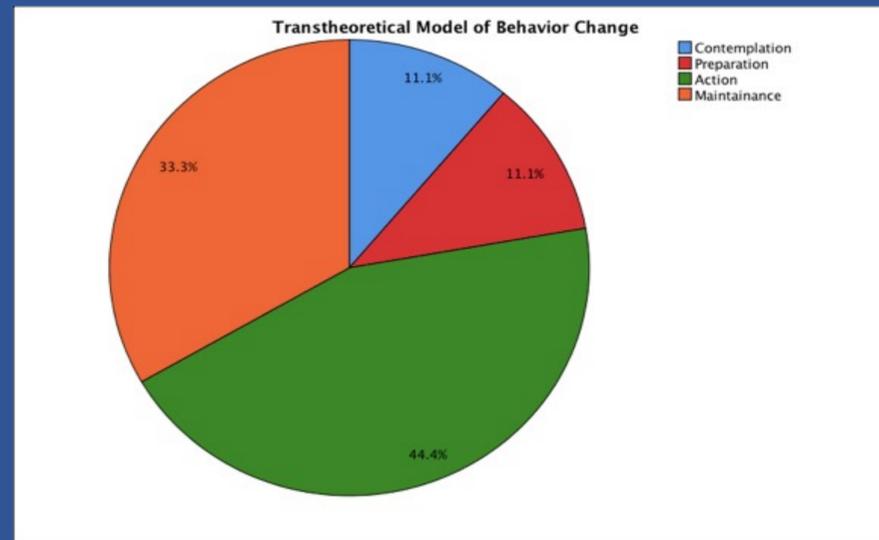


Figure 1. Self-Report Survey participant's readiness to engage in regular exercise [any planned physical activity (e.g., brisk walking, aerobics, jogging, bicycling, swimming, rowing, etc.)] in accordance to the five stages of the Transtheoretical Model of Behavior Change

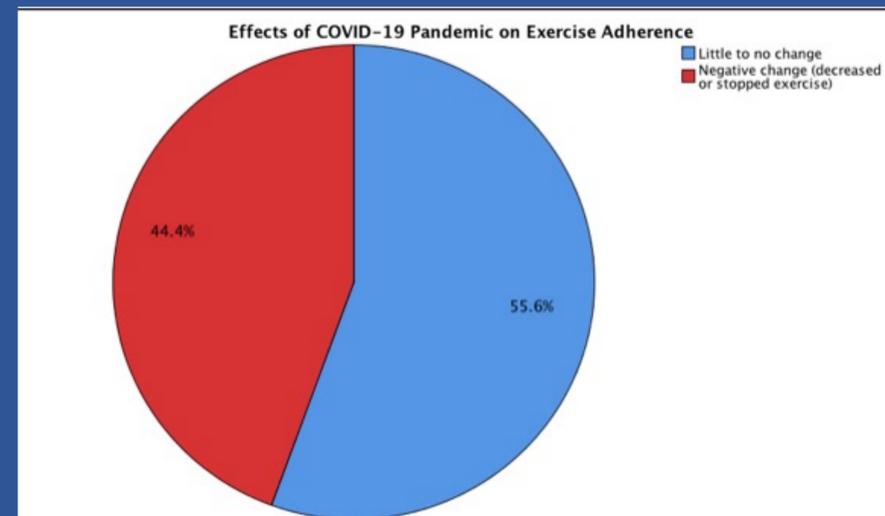


Figure 2. Self-Report Survey participant's responses when asked if the COVID-19 pandemic has effected their exercise routines

Results

- Participants identified the following strategies for managing their Type-2 diabetes
 - medication
 - dietary modifications
 - exercise
- In those who exercise regularly, the most common reasons for continuing to be active included:
 - genuine enjoyment of their chosen physical activity
 - increased feelings of energy
 - weight loss
- The most common reasons cited for poor exercise adherence were
 - Diabetes "burnout"
 - bodily pain related to Type-2 diabetes neuropathy
 - feelings of fatigue
 - lack of motivation
- Participants also noted that having a tailored exercise experience would help to increase exercise adherence



Figure 3. Collection of commonly used words in open ended questions answered by respondents in the focus group, phone interviews, and self-report survey

Discussion and Conclusion

- There is a wide variability in people's feelings about exercise ranging from extreme dislike to enjoyment
- The results of the present study will be utilized to:
 - Determine a more optimal design of exercise programs for people with Type-2 diabetes
 - Establishing interdisciplinary partnerships within the University of Rhode Island and collaboration with regional diabetes and local health centers.