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Health Solutions**

Preventing Cardio-Metabolic Syndrome:

Lessons Learned from the Skyland Trail *Healthy Challenge* Pilot

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SUBSTANCE USE AND MENTAL HEALTH SERVICES ADMINISTRATION
DEPARTMENT OF HEALTH & HUMAN SERVICES

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Background

Cardiometabolic syndrome

- Major risk factor for morbidity and early mortality
- Associated with atypical antipsychotics, mood stabilizing medications
- Aberrations in following domains
 - Body Mass Index (BMI)
 - cholesterol (hypercholesterolemia)
 - triglycerides (hypertriglyceridemia)
 - blood pressure (hypertension)
 - fasting glucose levels (hyperglycemia)

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Healthy Challenge Pilot

Program Purpose and Goals:

- *Healthy Challenge* program is an **evidence-based intervention program** that is designed to delay, stabilize, or reverse the indicators of cardiometabolic syndrome
- Based on “Best Practices” from exhaustive literature review
- The program is designed to provide another layer of treatment and program offerings in addition to those already in place
- *Healthy Challenge* emphasizes self-directed behavior as client moves through continuum of care
- Springboard for scholarship in health promotion, disease prevention

Determining Eligibility for Participation

Qualifying Factors

- Clients taking a mood stabilizer and/or atypical antipsychotic
- Clients must commit to the following for 3 months or their entire length of stay:
 - participating in weekly individual and/or group psychoeducational activity
 - wearing an activity monitor that tracks daily movement
 - working with a personal trainer to complete at least 2 exercise sessions per week and complete at least one other independent exercise session for a total of 2 hours total weekly exercise
 - eating a restricted carbohydrate, high lean protein diet
 - participating in additional mindfulness and compassion meditation therapies
 - Structured monitoring of indices with continuous feedback

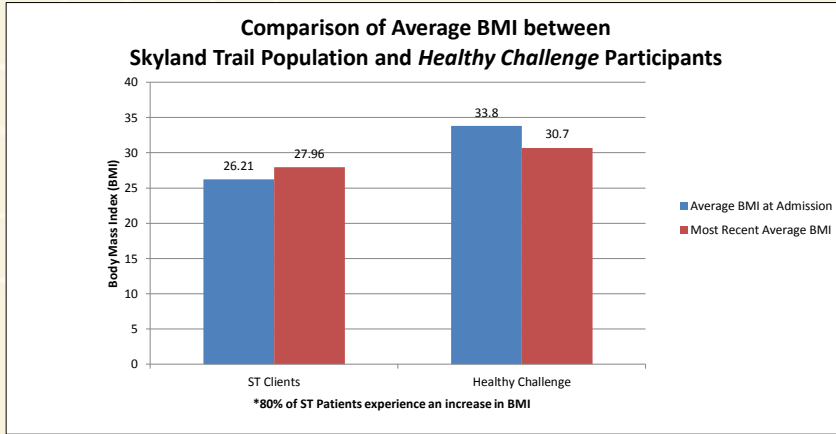
Disqualifying Factors

- Not taking and/or discontinuing use of a mood stabilizer/atypical antipsychotic
- Having an active eating disorder (BMI < 18)
- Not medically cleared for moderate to strenuous physical activity
- Severe dietary restrictions that would not allow client to comply with dietary restrictions
- Recent use of drugs that may impact cardiovascular functioning; i.e. cocaine

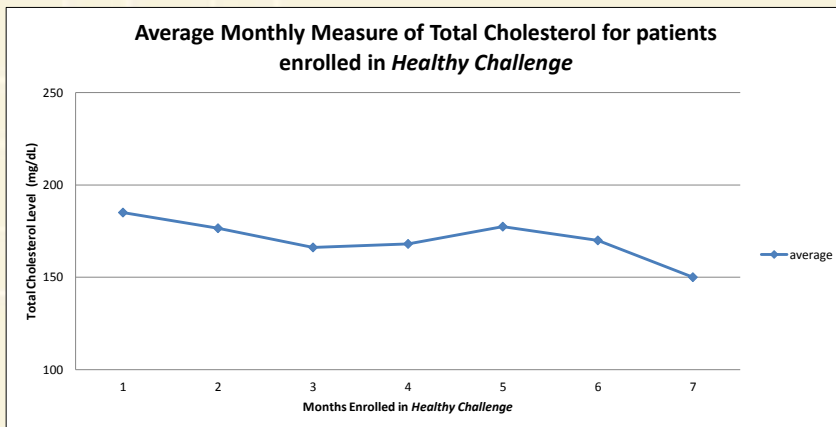
2014 *Healthy Challenge* Pilot Began

- Recruited eligible patients to attend *Healthy Challenge* Orientation
- Created strategies for engagement including
 - Drawing for a iPad for all current participants
 - Drawing for a gift cards for all current participants
 - Socialization opportunities
 - Fee incentive (paper submitted for publication)
- Collected data from 11 participants
- Analyzed results
 - BMI
 - Total Cholesterol
 - Triglycerides
 - Knowledge, attitudes and sense of self-efficacy

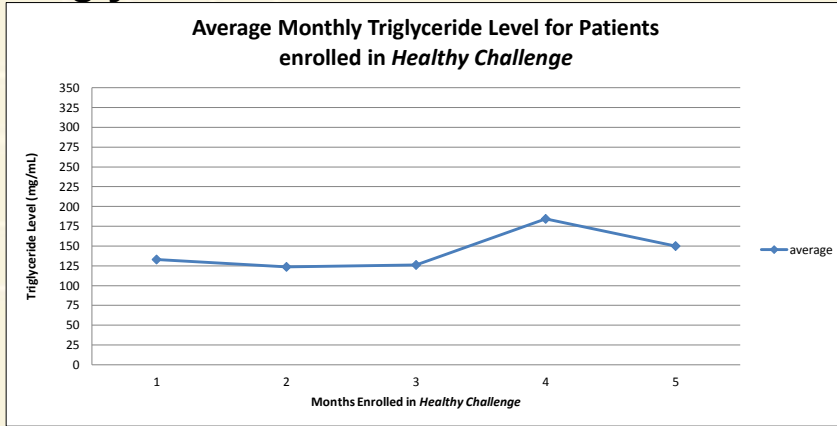
BMI



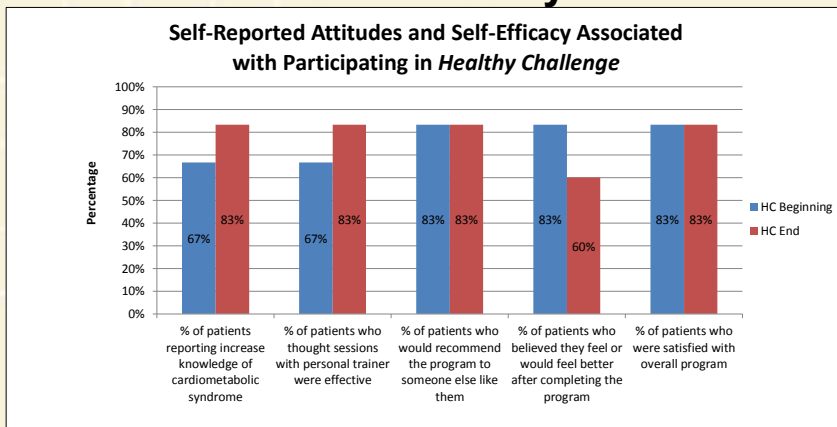
Total Cholesterol



Triglyceride Levels



Attitudes and Self -Efficacy



Results

- Body Mass Index (BMI) manifested a statistically significant decrease of three points for 7 of the 11 healthy challenge clients, $p < .008$
- Non-*Healthy Challenge* clients at the rehabilitation facility manifested a statistically significant 2-point increase in their BMI during the course of treatment
- *Healthy Challenge* clients also manifested a decrease in their total cholesterol during treatment (mean =22 points), $p = .07$
- Out of 11 participants, 5 had more than one day where they walked more than 10,000 steps, 7 had 2 or more days with more than 8,000 steps, and 9 clients did not have a day without 6,000 or more steps, thus showing that the intervention is associated with excellent levels of physical activity
- Ironic increase in triglyceride levels roughly a month into the program (ongoing research)

Implications

- The *Healthy Challenge* intervention leads to decreased BMI and high levels of physical activity
- This BMI decrease is more substantial when considering the fact that the typical client manifested a treatment related weight gain of 2 BMI points, reflecting a net loss of 5 BMI points
- Activity levels were high for most patients and cholesterol levels manifested a marginally significant decrease for the sample as a whole, with the decrease being over 20 points on average
- These findings suggest that a healthy living intervention is feasible in the context of a community mental health setting

The Next Phase of *Healthy Challenge*

Lessons Learned

- *Healthy Challenge* has saved 10 years of life across the 11 participants
- Clients who participate for less than 12 weeks can experience clinical improvements; but may not be in services long enough to determine statistical significance
- Find a way to continue wellness tracking for clients after discharge from treatment services
 - THRIVE Wellness Clinic
 - Post-discharge assessments with “booster” as needed
- Clients find value in the idea of personalized services, specifically personal trainer

- Meditation component was not used, valued by participants
- Motivation that is intrinsic much more powerful than extrinsic
 - Integrate into “recovery plan”
 - Key is sense of self efficacy
- Education and support are keys to success in maintaining healthy dietary and activity choices
 - Menu planning
 - Creating grocery shopping lists
 - Scheduling exercise
 - Personalizing goals and plans

Going Forward

Scholarship

- Assess predictive qualities of physical health indices and mental health indices
- "Drill down" by specific medication
- Organization-wide culture shift

Program

- Will become an opt-out program
- Staff involvement
- Maintain individual attention, goal planning
- Necessitate smoking cessation

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