



Associated with Psychotropic Medications

Raymond J. Kotwicki, MD¹ Philip D. Harvey, PhD² Alexandra M. Balzer, MPH¹
¹Skyland Trail, ²University of Miami Miller School of Medicine



Abstract

Background: Individuals with mental illnesses face particular risk for developing heart, pulmonary, and energy problems, collectively called *cardiometabolic syndrome*. High Body Mass Index (BMI), hypercholesterolemia, hypertriglyceridemia, hypertension, and hyperglycemia are the components of this syndrome. Two classes of medications used to treat individuals with schizophrenia, bipolar disorder, and depression – atypical antipsychotics and mood stabilizers – are known to exacerbate the problem, as are a number of the correlates of severe mental illness including a sedentary lifestyle and social isolation.

Methods: Twenty-six patients being treated with atypical antipsychotics and or mood stabilizers were enrolled in a structured wellness program at Skyland Trail, a private psychiatric rehabilitation facility. The patients were given access to a personal trainer for weight control and to promote lean muscle mass. A low-carbohydrate, high-lean-protein meal plan provided six meals daily. Psycho-education about the link between physical and mental health, including a tobacco cessation component and nutritional education were provided. Meditation and relaxation classes, including yoga, were offered. Regular monitoring of physiologic indices was conducted. Medication treatment of insulin resistance and/or hyperglycemia was provided as indicated.

Results: For the 13 patients who completed the program to date, there were several changes in their physical functioning. Body mass index (BMI) manifested a statistically significant decrease of two points for 8 of the 13 clients, $p=.040$. Further, when compared to clients enrolled in healthy challenge, other clients at the rehabilitation facility manifested a statistically significant two point increase in their BMI during the course of treatment. Seven participants also manifested a decrease in their total cholesterol during treatment (mean =42 points), $p=.002$ and also in triglycerides (mean=45 points), $p=.019$. HgA1c scores were available for 10 patients, 6 of which experienced a decrease (mean=.234% points), $p=.022$. Finally of the 13 cases, 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.

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 4 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 40 points on average. These findings suggest that a healthy living intervention is feasible in the context of a day treatment for severe mental illness. More clients will have completed the intervention by the time of this presentation.

General Background

Cardiometabolic syndrome is a major risk factor for morbidity and early mortality

Cardiometabolic syndrome is associated with atypical antipsychotics, mood stabilizing medications and aberrations in following domains:

- Body Mass Index (BMI)
- cholesterol (hypercholesterolemia)
- triglycerides (hypertriglyceridemia)
- fasting glucose levels (hyperglycemia)

Treatment Site

Skyland Trail is a residential and outpatient psychiatric rehabilitation facility in Atlanta.

It is an independent free-standing organization that treats individuals aged 18-65 with major mental illnesses.

Patients receive pharmacological, rehabilitation, and psychotherapeutic services in a recovery model.

Methods

Recruited eligible patients with 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
- Structured monitoring of indices with continuous feedback

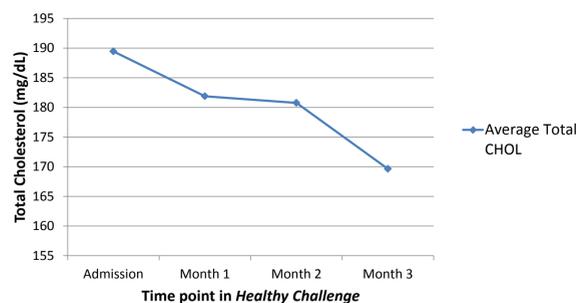
Outcomes

13 of the 26 patients completed 12 weeks of the Healthy Challenge Program

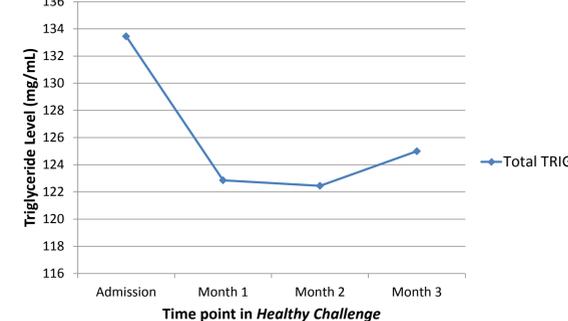
6 patients are currently enrolled, but have not yet reached 12 weeks of participation

Analyzed changes in BMI, Total Cholesterol, Triglycerides, HgA1c and Knowledge, attitudes and sense of self-efficacy

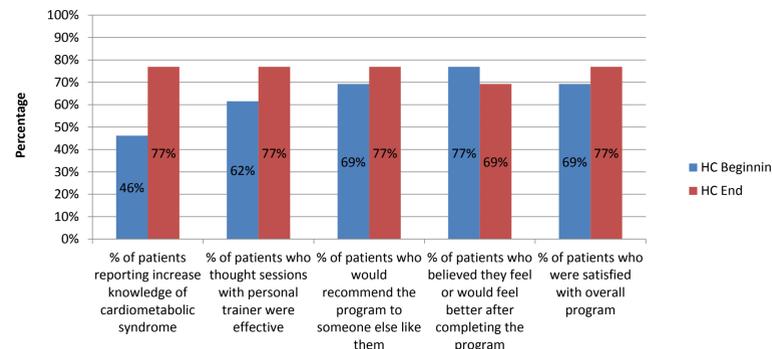
Average Monthly Total Cholesterol Level for Patients enrolled in Healthy Challenge



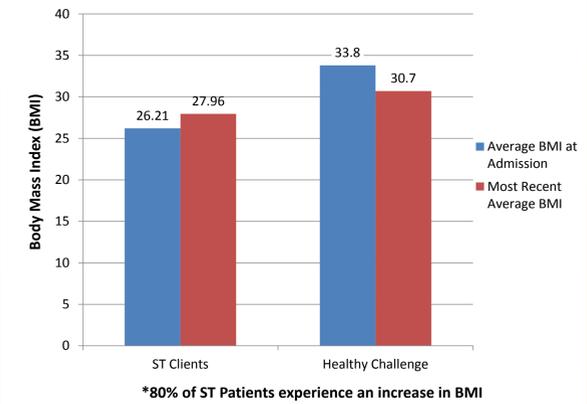
Average Monthly Measure of Triglycerides for patients enrolled in Healthy Challenge



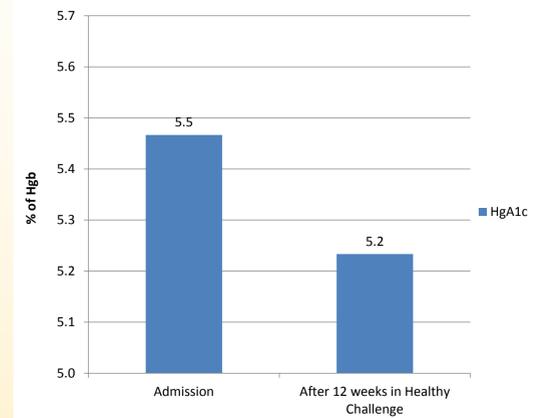
Self-Reported Attitudes and Self-Efficacy Associated with Participating in Healthy Challenge



Comparison of Average BMI between Skyland Trail Population and Healthy Challenge Participants



Average HgA1c for patients in Healthy Challenge



Results

Body mass index (BMI) manifested a statistically significant decrease of two points for 8 of the 13 clients, $p=.040$.

Non-Healthy Challenge clients at the rehabilitation facility manifested a statistically significant two point increase in their BMI during the course of treatment.

Seven participants also manifested a decrease in their total cholesterol during treatment (mean =42 points), $p=.002$ and also in triglycerides (mean=45 points), $p=.019$.

HgA1c scores were available for 10 patients, 6 of which experienced a decrease (mean=.234% points), $p=.022$. One client experienced a 0.5% point decrease in HgA1c, which moved him from the pre-diabetic range to normal range.

Implications

The Healthy Challenge intervention leads to decreased BMI, cholesterol and triglycerides 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 4 BMI points

Clients who participate for less than 12 weeks can experience clinical improvements; but may not be in services long enough to determine statistical significance

These findings suggest that a healthy living intervention is feasible in the context of a community mental health setting

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