Managing metabolic syndrome in a partial hospitalization program: a feasibility study

Renee Latimer, APRN-BC, MS, MPH
Rose Clute, APRN-BC, RN, MS
Life Enhancement Program
The Queen's Medical Center
Honolulu, HI

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Day Treatment Services

- Began in 1994
- 5 programs serve @ 4,525 patients per year
  - 2 focus on mental illness
  - 3 focus on dual diagnosis
- Feasibility study focused on 5 day acute mental illness (Life Enhancement program)

Life Enhancement program

- Primary dx chronic or new onset serious mental illness
- 2 tracks depending on level of function
- Focus is on safety, symptom management, illness education, bridging to family and social support
- Average LOS is 150 days

The Queen's Medical Center

- Founded in 1859 by Queen Emma and King Kamehameha IV
- Private, non-profit hospital
- Licensed for 505 beds, with over 1100 nurses
- Granted Magnet designation in April, 2009
- Mission: provide in perpetuity quality health care services to improve the well-being of Native Hawaiians and all the people of Hawai'i

The Queen's Medical Center

- Team: 3 SWs, 2-3 BHAs, 1 APRN, ½ MD, [art therapist, OTR- supplemental]
- APRN role
  - Admission health hx, medication dispensing, education and management
  - Focus on illness self-management
  - Previous wellness ed focused on general health topics with no set curriculum
**Background - literature**

- Persons with serious mental illness are up to 2 times more likely to develop diabetes
- Cardiovascular disease is the leading cause of death in persons with SMI
- 6 years after the ADA-APA consensus statement, glucose and lipid testing for SGA-treated adults was infrequent.
- “More effort is needed to improve diabetes and dyslipidemia screening in these at-risk patients” [Morrato et al, Diabetes Care 2009 Jun;32(6)]

**American Diabetes Association (ADA) and the American Psychiatric Association (APA) [2005]**

**CONSENSUS GUIDELINES**

1. consideration of metabolic risks when starting medications
2. patient, family, and caregiver education
3. baseline screening
4. regular monitoring
5. referral to specialized programs for weight management.

**Metabolic Syndrome**

- Elevated waist circumference: 40 inches in men, 35 inches in women;
- Elevated triglycerides: 150 mg/dL (or on drug treatment for elevated triglycerides);
- Reduced HDL-C: 40 mg/dL in men, 50 mg/dL in women;
- Elevated blood pressure (BP): 130 mm Hg systolic BP or 85 mm Hg diastolic BP;
- Elevated fasting glucose: 100 mg/dL.

**Measures**

- participant attendance and satisfaction with sessions
- pre and post test scores of knowledge
- Perceived level of physical activity
- Perceived nutritional intake.
- assessment of trends in participants’ weight, BP, waist circumference, FBG, HbA1c, lipid profiles over 3 months

**Research Question & Design**

- to test the feasibility of implementing "HealthWatch", a program for the management of metabolic syndrome, adapted for a partial hospitalization program serving the seriously mentally ill.
- quasi-experimental one group, pre-/post-test design
- Feasibility study (n=20)

**Proposed Intervention**

1. *SugarWatch*, a locally developed curriculum shown to be successful in improving risk factors for metabolic syndrome in a study targeting Asian Americans and Pacific Islanders
2. structured physical activity to meet recommendations
3. Create-a-plate lunch 1 day/week
Curriculum

Session 1: Create-a-Plate
Session 2: Stepping Out
Session 3: Be a Buddy
Session 4: Check your Health
Session 5: Talk to Your Doc
Session 6: Planning for the Road Ahead

Results: Demographics

- Male 60%
- Mean age 43 yo; 80% < 50 yo
- Mean years of education = 13.2 (range 11-20)
- 65% AA/PI; 25% more than 1 ethnicity
- Family hx of diabetes (45%) and hypertension (60%)
- 35% were smokers

Physical activity

- Increase in-program walking to 150 minutes per week (five 30-minute sessions).
- LE Program schedule of classes was shifted to accommodate daily walking
- LE Program staff assisted with the walking sessions.

Baseline results

- BMI
- SBP
- DBP
- Waist circumference
- FBG
- HbA1c
- TC
- LDL
- HDL
- TG
- 29.4
- 128.5
- 75
- 39.2
- 107
- 6.67
- 194.8
- 118.3
- 46
- 173

Feasibility measures

- 37 consented; 20 participants completed 3 months
- Participation in HealthWatch education
  - 85% attended 4 or more sessions
  - 40% attended all 6 sessions
- During the study period (24 weeks); 4 or more walking sessions/week for 83% of the weeks
Results

- End of study lab values n=13
- No significant differences for the following measures:
  - Weight, BMI, Waist circumference
  - Lipids, FBG, HbA1c
  - # of MD visits in last 6 months
  - Perceived health status

Decrease in SBP was significant!
- A recent meta-analysis showed pre-hypertensive BP was linked with an increased risk for stroke. (Lee, 2011)
- Pre-hypertensive: SBP 121-139; DBP 80-89
- Why does this make sense?
  - Numerous studies show that physical activity (walking) can lower BP in various groups

Other results

- One person stopped smoking
- Knowledge increased slightly, but not significantly
- Satisfaction measured qualitatively
  - Activities and curriculum well liked
  - Long presentations and discussions less liked
  - The daily walks generated mixed feelings

Limitations

- No money, honey
- Feasibility study
- Weak design
- Small sample size (n=20)
- No control for extraneous variables (changes in medication, etc)
- Post-intervention lab results incomplete

Practice Change and Sustainability

- Baseline lab screening has been instituted at intake: lipids, FBG, HbA1c
- Health & Wellness curriculum is standard part of weekly LE program
- Daily walking or other activity has been incorporated into the LE program
- Awareness of healthier lunch options is increasing

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References