Interprofessional Education: Using an Interdisciplinary Team to Teach Graduate Students to Manage Low Income Clients with Metabolic Syndrome

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The IOM/AACN recently recommended increasing the emphasis on interprofessional education.

Graduate students in health have limited opportunities to participate in interprofessional teams.

Since 2008, students in nursing and nutrition have functioned as collaborative team members with medicine to deliver nonpharmacologic therapy to low income clients with Metabolic Syndrome (MS).
Metabolic Syndrome

- Abdominal obesity measured by increased waist circumference
- Atherogenic dyslipidemia manifests in routine lipoprotein analysis by raised triglycerides and low concentrations of HDL cholesterol
- Elevated blood pressure strongly associates with obesity and commonly occurs in insulin-resistant persons
- Insulin resistance is present in the majority of people with the metabolic syndrome
Methods

- The *team* included UF physicians, UNF faculty, and students in nursing and nutrition.
Methods

- The *clinic* is housed within a family medicine center, is open 9am-3pm on Fridays and is staffed by an RD student coordinator, FNP students and undergraduate students.
Methods

- The clinic’s electronic medical records were used to identify clients with risk factors for MS.

- Clients meeting criteria were called to determine if they were interested in participating in the MS clinic.
Methods- Intervention and Control

- **Intervention:** Six sessions of personalized care related to nutrition and physical activity delivered by nursing and nutrition graduate students

- **The six sessions included:**
  - four 1 hour individualized nutrition sessions
  - two 1 hour individualized fitness sessions

- **Control group:** usual care
Methods - RD Students

- RD sessions - completed a nutrition assessment, 24 hour dietary recall and BMI/waist circumference, and administered the online self-efficacy instrument

- Expected outcomes - increased nutrition knowledge, literacy and self-efficacy, improved food shopping and label reading skills, portion control, and improved food choices based on 24-hour food recall data
Methods – NP Students

- NP sessions - obtain and record history and physical exam, vital signs/labs, and complete exercise prescription
- Expected outcomes - increased physical activity, improved labs related to metabolic syndrome, increased nutrition and physical activity self efficacy related to diet and exercise
- Reduced risk factors
Results

To date, the team has screened over 1000 clients and referred 150 clients to the clinic for evaluation.
Results

- *Clinical outcomes* indicated that pre/post differences (BMI, waist circumference, triglycerides, HDL, cholesterol, BP, fasting glucose) improved with a few of the clients achieving goals (weight loss, improved nutrition, and normalized lab values)
Results

- Although the service was complimentary, there was a 70% combined drop out/no show rate primarily related to transportation, health literacy or work issues.
Student Outcomes

Outcomes for interprofessional education include improved skills in:

- performing histories/physicals
- interpreting lab values
- determining fitness parameters
- using outpatient electronic medical records to identify clients with MS (usually not listed as a diagnosis)
Student Outcomes

- Exit interviews indicated that students report satisfaction with the experience and an increased awareness of each profession’s role.

- Nutrition students reported greater understanding of medications (name, uses, and interactions).

- NP students reported greater knowledge related to nutrition and improved skill in writing exercise prescriptions.

- Both expressed greater comfort working with interprofessional team members
Exercise Prescription

- Aerobic exercise (walking prescription)
- Increase movement (hourly activity)
- Tai Chi (Allen, J. & Meires, J., 2011, JTCN)

Name: James Doe

Address: 111 Peace Steps Way

Tai chi 2-3 times per week for 12 weeks

Refill 3 times

Jennifer Practitioner ARNP
(signature)

Date: May 1, 2009
Clinic Outcomes

The clinic’s medical staff continue to refer clients to the RD and NP students for nutrition and fitness counseling as well as a variety of other diseases and conditions including:

- renal disease, depression, osteoarthritis, stress, osteopenia/osteoporosis and education related to diagnoses and treatments
Issues of Literacy & the Interprofessional Team

Team Members working together to determine and address:

- Literacy/Health Literacy
- Nutrition choices
- Outcomes
- Evidence
Literacy versus Health Literacy

Literacy
- read
- write
- speak
- compute and solve problems

Health Literacy
- mathematical concepts
- numeracy skills
- knowledge of health topics
- knowledge of the body
Health Literacy and Health Outcomes

More likely to report health as poor
More likely to lack health insurance
Less use of preventive services
Less knowledge about medical conditions and treatment
Increased health care costs
Increased rates of hospitalization
Current Food Patterns

- Working or single parents, increased stress, long working or commuting hours, little time for food planning or exercise
- Reliance on processed foods, take-out foods, restaurant prepared foods
- >50% of food dollars are spent away from home
- Largest increase in grocery items are prepared foods and packaged foods
- Grocery shopping is now a learned skill
  - Requires calculation, algebra, fractions, percentages
Understanding Food Labels

Nutrition Label Survey asked 200 primary care patients to interpret food labels.

Most reported using food labels often and that they were easy to understand.

Focused on low or reduced carbohydrate foods.

Asked which of 2 foods had the most of a nutrient.

Understanding Food Labels

- 68% had some college education
- 77% had at least 9th grade level literacy skills
- 40% had a chronic illness for which dietary intervention was needed
- 23% reported being on a specific dietary plan

Calculation Question

- If a large soda has 2.5 servings (20 ounces) and one serving has 26 grams of carbohydrate, how many grams of carbohydrate does the large soda have?
Understanding Food Labels

- 32% of patients could calculate the amount of carbohydrate in a 20 oz soda that had 2.5 servings in a bottle.
- 60% could calculate the amount of carbohydrates consumed if they ate half a bagel when the whole bagel was the serving size.

Label Reading Errors

Common reasons for mistakes included:

- Misapplication of the serving size
- Confusion by extra information on the label
- Incorrect calculations
Factors influencing Nutrition Education in Low Literacy Patients

- Nutrition is a fundamental health education topic
- Hindered by insufficient provider time
- Patients with low literacy turned first to family and friends for health information
- Effective nutrition interventions must:
  - Build on patient’s social networks
  - Appear in a visually based, interactive format
  - Be culturally appropriate
Nutrition Prescription

Family Medicine Center at Lem Turner
1225 Lila Avenue
Jacksonville, Fl  23308

Nutrition Prescription

Patient Name_________________________ Date________________
Patient Signature__________________________________________

Nutritionist______________________________________________
Exercise Prescription

Family Medicine Center at Lem Turner
1225 Lila Avenue
Jacksonville, Fl  23308

Exercise Prescription

Patient Name________________________Date________________
Patient Signature________________________________________

NP ________________________________
Questions