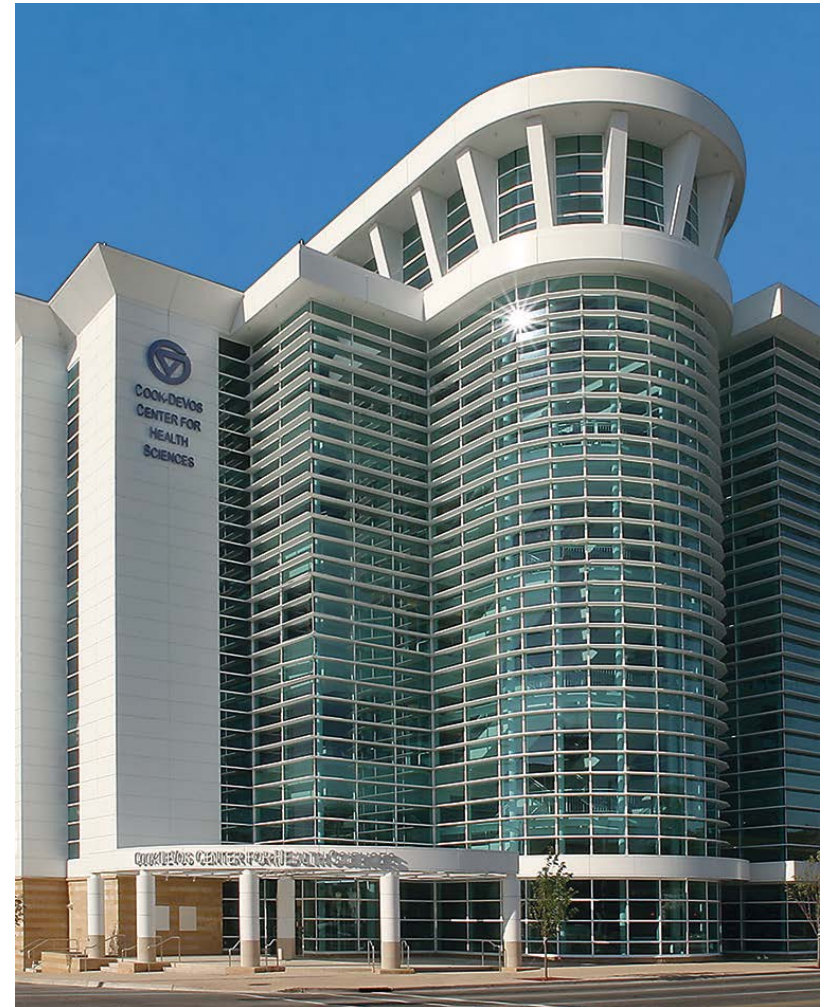


A Need for a Culturally Congruent Obesity Intervention at a Community Safety-Net Clinic

Claudia D. Rivera Salas
DNP Project Final Defense
April 12, 2019



Acknowledgements

Advisory Team:

- Dianne Slager, DNP, FNP.BC
- Ken Van Beek, LMSW
- Meridell Gracias, DNP, MSN, M.Ed

Objectives for Presentation

- Review the Clinical Problem
- Review Organizational Assessments
- Identify Evidence-Based Solutions
- Present Project Plan
- Review Results
- Discuss Next Steps

Background

- Obesity is an Epidemic in the United States
 - About 39% of adults over 20yo are considered obese in the United States
- High Association with Chronic Conditions
- Disproportionately Impacts Underserved Populations
 - Highest in ethnic minorities, low education, under or uninsured, or other markers of low SES
- High Healthcare Costs (Hales et al., 2017; Trivedi et al., 2015)

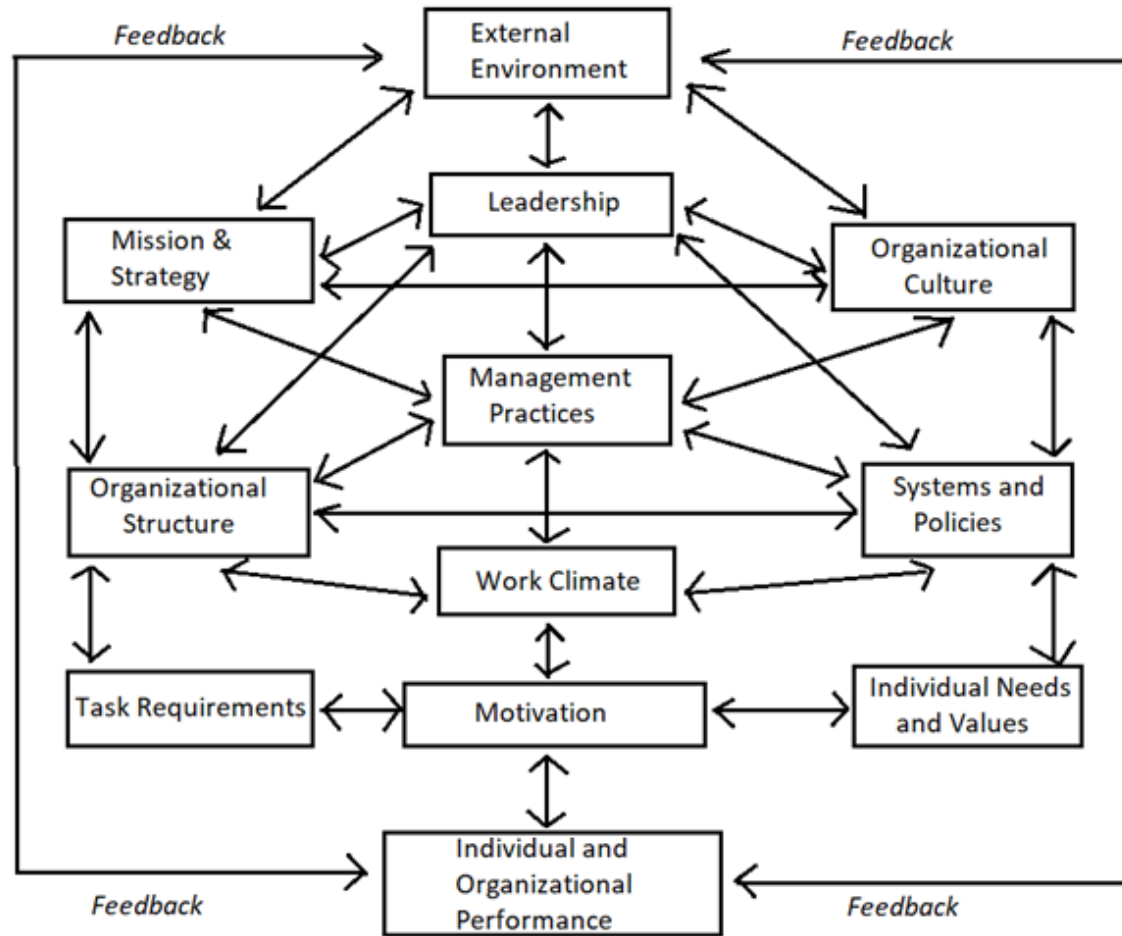


Background

- **Weight Loss of 5-10% Improves Health**
 - Improved blood pressure, glycemic control, lipid levels, reduction of disease and disease progression risk (World Health Organization, 2018; Wing et al., 2011)
- **Nutrition Education and Physical Activity Improve Health**
 - Decreased consumption of trans fats, sugary drinks, increase in fruits and vegetables
 - Improved glycemic control, decreased risk of heart and metabolic diseases (Avery, Flynn, Van Wersch, Sniehotta, & Trenell, 2012; Sattelmair et al., 2011).
- **Barriers**
 - Low education, difficulty accessing preventative care, lack of transportation, low disposable income, language barriers, fear of deportation (Betancourt, Green, Carrillo, & Owusu Ananeh-Firempong, 2016)

Analysis of Organization

Burke and Litwin Model





Burke and Litwin Model

- External Environment
 - Patient Population
 - Underinsured, ethnic minorities, low income
 - Higher county obesity rate than national average
- Internal Environment
 - Finances
 - Resources
 - Lack of internal resources, time management, volunteers
- Many Concepts are Facilitators
 - Mission and Strategies
 - Culture

SWOT Analysis

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • Increased accessibility to underserved patients • Low-cost appointments • Quality care and positive culture based on Christ-centered care • Bilingual interpreters and some staff • Some specialty providers available • Counseling and spiritual care provided 	<ul style="list-style-type: none"> • Income based on donations – low disposable money • Risk of patients not having consistent provider • Limit of subspecialties • Lack of chronic disease interventions • Lack of chronic disease prevention interventions
OPPORTUNITIES	THREATS/CHALLENGES
<ul style="list-style-type: none"> • Collaboration with community organizations and resources could increase promotion of clinic and decrease cost of interventions • Close-knit community that provides social support and safety 	<ul style="list-style-type: none"> • Highly variable revenue based on donations • Patient population includes those with a low socioeconomic status, non-English-speakers, and under or uninsured

Clinical Question

Does the implementation of free and culturally-congruent physical activity and nutrition program decrease obesity rates, improve dietary habits, and increase physical activity in underserved patients from a safety-net clinic?

Stakeholders

- Licensed Social Worker/Site Advisor
- Health Educator
- Project and Quality Improvement Manager/Registered Nurse
- Medical Director/Physician
- Primary Care Physician
- Care Coordinator/ Registered Nurse
- Medical Assistant
=Chronic Care Disease Management Team
- Patients

Review of Evidence

Review Method

Does a physical activity class promote weight loss and physical activity in disadvantaged adult populations?

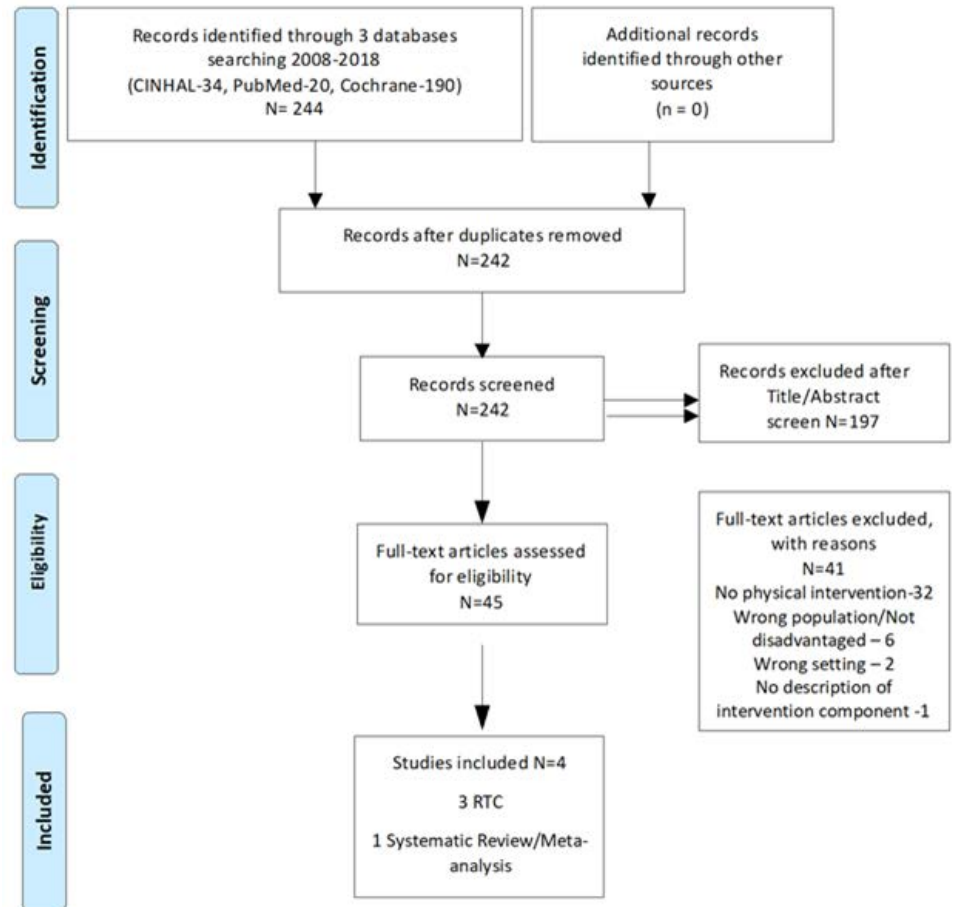
Systematic Literature Review

- PRISMA
- CINAHL, PubMed, Cochrane Review

PRISMA Figure

Keywords used: obesity AND adults AND intervention AND (exercise or fitness or physical activity) AND (underserved or low income or uninsured or underinsured) AND (systematic review OR meta analysis OR randomized controlled trial)

Adapted from “Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement,” by D. Moher, A. Liberati, J. Tetzlaff, D. Altman, and PRISMA Group. Copyright 2009 by PLoS Medicine.



Author/Year	Type of Study	Number of studies/ participants	Intervention Components	Population	Measures	Results	Conclusion
Dressel et al., 2018	RCT	n=26	12 weeks long. 10 weekly group bike rides with bilingual instructor	Latino and African American adults with BMI over 25	Baseline, after 12 weeks, and after 20 wks. Biking attitude survey, International Physical Activity Questionnaire, 6-minute Step Test, weight, blood pressure, waist circumference	Decreased perceived barriers to biking, increased self-recorded bicycling. No change in biometrics.	No change in BMI or physical health
Berry et al., 2011	RCT	n=56	9 months long. Moms could bring children. <u>12-week</u> program, weekly (for 1st 3 months) monthly (for 3 months), on own (3 months) 60 min long with exercise intervention, nutrition education, coping skills class. Bilingual staff. Given pedometers and healthy snacks.	Mexican immigrant mothers (with BMI over/equal to 25) and their children (age 2-4).	BMI, waist circumference, skinfolds, Health Promoting Lifestyle Profile II, The Eating Self-Efficacy Scale, Exercise Self-Efficacy Scale, fasting glucose, insulin, lipid panel measured baseline and 9 months.	Decreased BMI, <u>tricep</u> and subscapular skinfolds, waist circumference, total cholesterol, triglycerides, HDL, LDL, fasting blood glucose, fasting insulin, hemoglobin A1c. Increased health responsibility, nutrition, exercise knowledge, stress management, eating and exercise self-efficacy in moms.	Intervention was effective in increasing exercise and nutrition knowledge, self-reported dietary improvement preintervention goal attainment, and weight management improvement.
Hovell et al., 2008	RCT	n=151	Control: 18 sessions of 90 minutes over 6 months. Low-literacy education on home safety and disease prevention topics unrelated to exercise, diet, or CVD done by bilingual staff. Intervention Aerobic exercise intervention of three 90-min group sessions weekly for 6 months. After exercise, 30 min of diet/activity education given: nutrition, exercise, safety. Bilingual staff	Low income, mostly Spanish speaking, Latinas with sedentary lifestyles (exercise less than 3x/week for less than 30 min)	Height, weight, blood pressure, health history, physical activity assessment, fasting glucose. Exclusion: BMI over 40, BP over 160mmHG systolic, diastolic over 94mmHg, T2DM, fasting glucose over 140mg/dl, LDL >260 mg/dL, pregnant. Measured at Baseline, 6 <u>mts.</u> 12 <u>mts.</u>	Increased vigorous activity, <u>walking</u> , <u>improved</u> HDL, no change in BMI glucose, triglycerides, LDL or blood pressure	Intervention showed improved physical activity and HDL cholesterol
Cleland et al., 2013	Systematic Review and Meta-Analysis	19 Controlled trials	Phone counseling of physical activity, pedometers given -Education sessions with healthy snacks and aerobic <u>activity</u> . -Books on physical activity. -Nutrition education -Aerobic exercise groups -Computer messages and phone calls -Phone texts of behavioral and cognitive strategies for lifestyle change -Walking in neighborhood	Socio-economically disadvantaged women older than 19 years old	Main: Physical Activity change	Group interventions were more effective than individual. Face-to-face interventions were more effective than telephone/mass media. Community and organization interventions were more effective than home interventions. Physical activity promotion is effective.	Physical activity promotion is effective. The biggest factor to decreasing weight was being in a group-based intervention

Results: Literature Review

- All studies: Increased physical activity
- Interventions that have physical activity classes and nutrition education are more effective than interventions with one activity.
- Face-to-face interventions are most effective
- Group interventions are more effective
- Interventions that are culturally congruent are more effective

Leininger's Culture Care Diversity and Universality Theory





Leininger's Culture Care Diversity and Universality Theory

Cultural preservation or maintenance

- Supportive actions that help culture maintain a state of health
 - Bilingual instructors, consideration of family

Cultural accommodation or negotiation

- Supportive actions that help culture adapt to a health status
 - Reduction of safety risks

Cultural care restructuring or repatterning

- Supportive actions that help culture change lifestyle into different patterns that support healthy life patterns
 - Education on nutritious cultural ingredients, dancing/Zumba, use of common songs

IRB Approval



11/5/2018

DATE: November 05, 2018

TO: Dianne Slager
FROM: HRRC
STUDY TITLE: The Need for an Obesity Intervention at a Community Safety-Net Clinic
REFERENCE #: 19-133-H
SUBMISSION TYPE: HRRC Research Determination Submission

ACTION: Not Research
EFFECTIVE DATE: November 05, 2018
REVIEW TYPE: Administrative Review

Thank you for your submission of materials for your planned scholarly activity. It has been determined that this project does not meet the definition of research* according to current federal regulations. The project, therefore, does not require further review and approval by the Human Research Review Committee (HRRC).

A summary of the reviewed project and determination is as follows:

The purpose of this quality improvement project is to develop a sustainable exercise and nutrition program for [REDACTED] clients at risk for obesity by collaborating with two community agencies. This program is meant to improve the care being provided to patients at a single clinic; it is not designed to contribute to generalizable knowledge. Therefore, this project does not meet the federal definition of research and IRB oversight is not required.

An archived record of this determination form can be found in IRBManager from the Dashboard by clicking the "_ xForms" link under the "My Documents & Forms" menu.

If you have any questions, please contact the Office of Research Compliance and Integrity at (616) 331-3197 or rci@gvsu.edu. Please include your study title and study number in all correspondence with our office.

Sincerely,
Office of Research Compliance and Integrity

*Research is a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge (45 CFR 46.102 (d)).

Human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains: data through intervention or interaction with the individual, or identifiable private information (45 CFR 46.102 (f)).

Scholarly activities that are not covered under the Code of Federal Regulations should not be described or referred to as research in materials to participants, sponsors or in dissemination of findings.

Office of Research Compliance and Integrity | 1 Campus Drive | 049 James H Zumberge Hall | Allendale, MI 49401
Ph 616.331.3197 | rci@gvsu.edu | www.gvsu.edu/rci

Project Plan

Project Purpose & Objectives

Purpose: To collaborate with trusted existing community organizations in order to provide culturally congruent nutrition education and physical activity classes that are accessible, affordable, and safe for underserved patients from a Midwestern safety-net clinic for the purpose of obesity reduction.

Objectives:

1. Reduction of weight
2. Improved dietary habits and knowledge
3. Increased physical activity
4. Development of a sustainable program
5. Increased collaboration between the clinic and community organizations
6. Increased awareness of clinic services to the public

Settings & Participants

Where: Midwestern Safety-Net Clinic

Nutrition classes: Large room located within the clinic

Physical activity classes: Nearby elementary school gym

Who: Patients (20-65yo) of the clinic that have a diagnosis of hypertension, or type 2 diabetes mellitus, or body mass index over 30

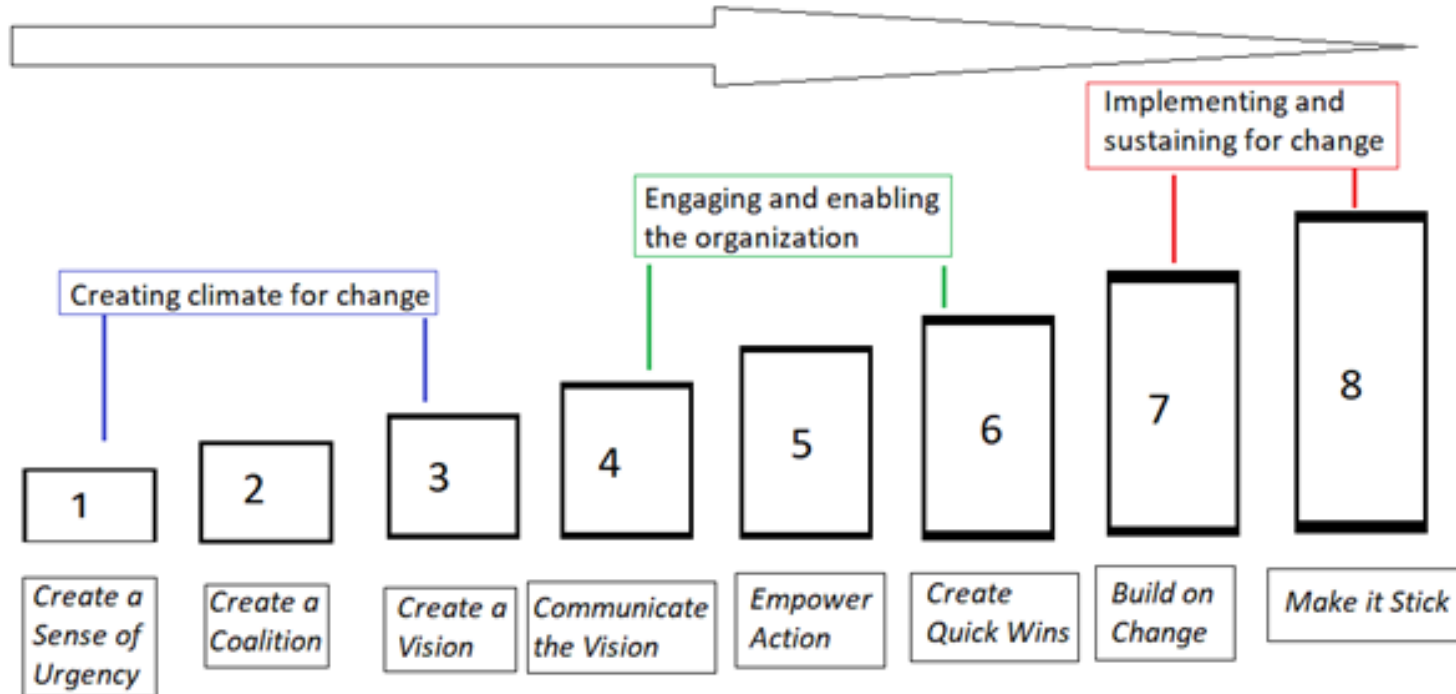
- Express interest and readiness to change
- Speak English or Spanish
- Individually approved by provider



Design

- Nutrition Program
 - A one and a half hours long class that met once per week for six weeks
 - Focus on nutrition label reading, MyPlate, nutritious foods, healthy eating on a budget, food safety, and small techniques to increase exercise during the day
 - Every class included a healthy and affordable food demonstration
- Physical Activity Classes
 - Located in nearby elementary school and open to the public
 - One hour of Zumba and dance once per week
 - Open all year, flyers hung
 - Many questions about clinic services from public
 - Unable to have sign-in sheet due to patient confidentiality

Kotter's Eight Step Change Model



Adapted from Kotter, J. P. (2012). *Leading Change: With a New Preface by the Author*. Harvard Business Review Press: Boston, Mass.

Implementation Strategy and Design

1. Create a Sense of Urgency
 - Already a concern
2. Create a Coalition
 - Chronic Disease Management Team
3. Create a Vision
 - Vision of seeing patients decrease BMI and improve glucose control
 - Information of organizations that provide classes
 - Development of programs with organizations
4. Communicate the Vision
 - Communication during meetings, flyers

Implementation Strategy and Design

5. Empower Action

- Decision making, attending classes

6. Create Quick Wins

- Celebrating all small successes

7. Building on Change

- Report on outcomes, evaluate barriers

8. Make it Stick

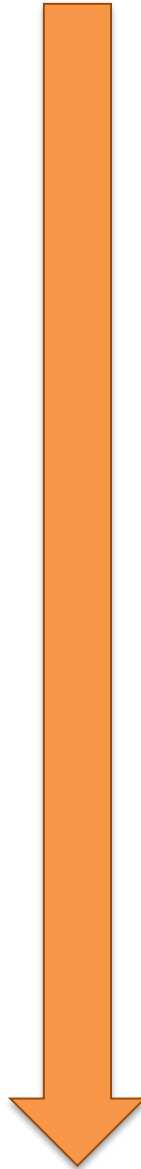
- Incorporate into site culture

Measures & Evaluation

- Pre/Post-Intervention Measures
 - Average Weight of Cohort
 - Surveys
 - Food and Physical Activity Questionnaire
 - 24-hour Food Recall
 - Self-Rated Nutrition Knowledge Question
- Post-Intervention Measure
 - Satisfaction Evaluation

Timeline

January 2018 –
April 2019



January 2018

- Establish rapport with staff, volunteers, and administrative teams

July 2018 – September 2018

- Spent time at clinic and met with different disciplines and stakeholders to gather information on organization and determine needs
- Finished organizational assessment of the clinic and presented findings to staff (Step 1: Create Urgency)
- Finished literature review and presented findings to staff
- Established Chronic Disease Management team for biweekly meetings (Step 2: Form a Coalition)
- Composed list of potential collaborating organizations and discuss objectives (Step 3: Create a Vision)

September 2018 – October 2018

- Finalized organizations for nutrition and physical activity classes and received approval from team (Step 4: Communicate the Vision)
- Meet with nutrition organizations to develop curriculum
- Make and hang flyers for patient self-referral
- Gather and register patients for classes

November 2018

- Present proposal defense
- Begin nutrition classes November 12th (Step 5: Empower Action)
- Begin physical activity classes November 14th (Step 5: Empower Action)

December 2018

- End of intervention - have meeting regarding thoughts of intervention (Step 6: Create Quick Wins)

January 2019- March 2019

- Collect and analyze data
- Provide report of analysis and discuss limitations (Step 7: Building on the Change)
- Meet with team and discuss what changes need to be made for the future in order to continue with the interventions (Step 8: Make it Stick)
- Meet regularly with Health Educator to teach program process to maintain sustainability
- Help Health Educator register patients for next set of classes beginning March 25th

April 2019

- Present final project defense
- Submit manuscript to ScholarWorks for Publication

Budget & Cost Analysis

Initial Cost: The Need for an Obesity Intervention at a Community Safety-Net Clinic	
Revenue	
DNP Student/Project Director (in-kind donation)	\$2,800.00
Statistician (in-kind donation)	\$100.00
Nutritionist (in-kind donation)	\$150.00
Group exercise instructor (in-kind donation)	\$102.00
Cost mitigation (3 office visits in one year for obesity related illnesses like diabetes and hypertension for 15 patients)	\$7,875.00
TOTAL INCOME	\$11,027.00
Expenses	
DNP Student/Project Director (in-kind donation)	\$2,800.00
Statistician (in-kind donation)	\$100.00
Nutritionist (in-kind donation)	\$150.00
Group exercise instructor (in-kind donation)	\$102.00
Printing 15 flyers	\$2.00
Team Member Time	
Meetings and updates with Americorps-based health educator	\$440.00
Meetings and updates with social worker	\$345.00
Biweekly meetings and updates with 2 physicians	\$1,456.00
Biweekly meeting and updates with 2 registered nurses	\$432.00
Biweekly meetings and updates with medical assistant	\$88.00
TOTAL EXPENSES	\$5,915.00
CHANGE IN NET ASSETS	\$5,112.00

Results

Results: Participant Characteristics

Participant Data

- 13 participants registered, 7 “graduated” nutrition class
- Six participants completed both pre and post-evaluations in nutrition class
- No participants attended both the nutrition class and physical activity class
- All identified as Hispanic/Latino
- All had a primary language of Spanish
- All between age 30-59 years old

Results: Physical Activity

Analysis from Food and Physical Activity Questionnaire

- 50% of participants showed improvement in one or more physical activity behaviors
 - 50% made small daily changes to be more physically active
 - 33% reported exercising more days per week

Results: Dietary Habits

Analysis from Food and Physical Activity Questionnaire and 24-hour Food Recall

- 100% of participants showed improvement in one or more diet quality indicators
 - 83% reported increase in daily fruit consumption
 - 50% reported increase in daily vegetable intake
 - 100% met recommendations for dark green vegetable consumption
 - Mean sodium intake decreased by 64 milligrams
 - Mean fiber intake increased by 3.8 grams
 - 17% reduced their sugary-sweetened beverage intake

Results: Dietary Habits

Analysis from Self-Assessed Nutrition Knowledge Question

- There was a 1.5 point increase in nutrition knowledge



Results: Weight

Analysis from Chart Review of Weight

- Average weight from pre-intervention participants (n=13) to available post-intervention participant data (n=9) resulted in an increase of 2.9 lbs
- Results reflect all available data, including participants that only attended one class

	Pre-Intervention (n=13)	Post-Intervention (n=9)
Average Weight	208.7 lbs	211.6 lbs

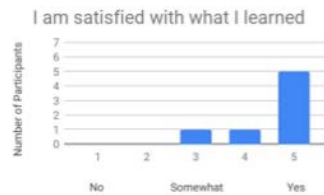
Results: Satisfaction

- 100% answered ‘Somewhat’ or ‘Yes’ to being satisfied with what they learned
- 100% answered ‘Yes’ to the class giving tips to improve their health
- 100% answered ‘Yes’ to using the class to improve their health
- 100% answered ‘Yes’ to wanting to attend another nutrition program in the future
- 100% answered ‘Yes’ to recommending this class to somebody else

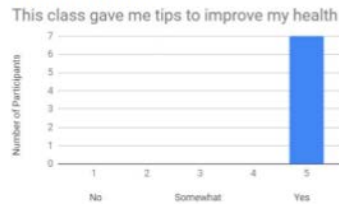
Results: Satisfaction

Nutrition Class Evaluation 2018
n=7

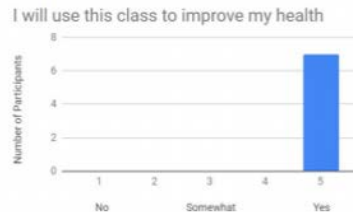
1. I am satisfied with what I learned



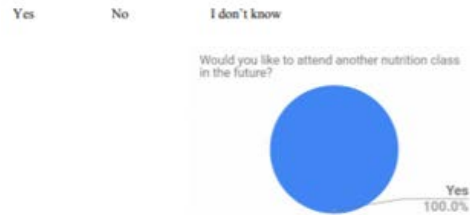
2. This class gave me tips to improve my health



3. I will use this class to improve my health



4. Would you like to attend another nutrition class in the future?



5. Would you recommend this class to somebody else?



6. What did you like about the class?

1. Everything they explained.
2. I thought everything was very interesting.
3. Everything.
4. I liked everything, very good information.
5. How to read labels and know how much sugar is in each beverage. Also the food demonstrations that the teacher did for us.
6. Everything. How to check labels. How many vegetables to eat.
7. Everything

7. Did anything prevent you from attending the class?

1. Snow and ice.
2. --
3. Weather.
4. --
5. Weather.
6. Driving in the snow.
7. Nothing

Results: Systemic Objectives

- Development of a sustainable program to improve the health of underserved population
- Increased collaboration between the clinic and community resources
- Increased exposure and awareness of the clinic and its services to the public



Discussion

- Practice change was considered a success
 - Majority of participants attended over half the classes
 - Positive results and satisfaction
 - Difficulty attending two different classes within the same week
 - Community health programming experience
- Cultural Aspects
 - Improved effectiveness
 - Bicultural and bilingual instructors
 - Family support and impact



Limitations

- Small sample size
- Short implementation timeframe (six weeks)
- Instructor survey bias
- Winter weather
- Holiday gatherings

Conclusions

- Increased accessibility to free health improvement education and classes for underserved populations
- Increased physical activity
- Improved dietary habits
- Increased clinic collaborations and awareness

Implications for Practice

- Nutrition program will continue at the clinic three times per year
- Physical Activity classes will continue all-year
- Project can serve as a template for other health clinics with similar populations
- Future studies should consider weather, long-term data collection, other objective measurements

Sustainability Plan

- High staff interest to continue program
- Trained health educator and excited to continue
- New education sheet for providers on how to order program referral for registration
- Second set of nutrition classes began March 25th
- Exercise class is open all year
- Leave copy of scholarly project at site

Dissemination

- Meeting with Chronic Care Management Team
- E-mail Updates
- Juried Poster Presentation at MICNP State Conference
- Final Project Defense
- Submission to Scholar Works

Reflection on DNP Essentials

DNP Essentials Reflection

- Essential I: Scientific Underpinnings
 - Organizational Assessment
 - Systematic Literature Review
- Essential II: Organizational and Systems Leadership
 - Leader in Medical Team meetings
 - Connections with stakeholders
 - Assessment of barriers and facilitators
- Essential III: Clinical Scholarship and Analytical Methods for EBP
 - Systematic literature review
 - Analysis of data
 - Evaluation of program and changes needed

DNP Essentials Reflection

- Essential IV: Information Technology
 - Development of education sheets for providers
 - Analysis of data
 - EHR use to review and organize data
- Essential V: Healthcare Advocacy
 - Advocate for populations with inequalities
 - Increase access of health-related programs
 - Advocacy Day
- Essential VI: Interprofessional Collaboration
 - Community outreach leaders, social worker, medical assistant, physicians, nurses, health educator

DNP Essentials Reflection

- Essential VII: Clinical Prevention and Population Health
 - Project dedicated to improve population health
 - Analysis of populations in need of services
 - Project based on cultural congruence to increase effectiveness
 - Volunteering for various community locations
- Essential VIII: Advanced Nursing Practice
 - Therapeutic relationship building between staff, volunteers, and patients
 - Education sheets for providers
 - Mentoring of nursing students
 - Training of health educator
 - Design and implementation for improved patient outcomes

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