

Cardiac Risk Reduction Intervention for At Risk Young Black Women

Emerging Science in Cardiovascular Nursing

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HeartHealth in Rural Appalachia - PI Dr. Debra Moser

AHA Impact Goal for 2020

“...TO IMPROVE THE CARDIOVASCULAR HEALTH OF ALL AMERICANS BY 20% WHILE REDUCING DEATHS FROM CARDIOVASCULAR DISEASES AND STROKE BY 20%.”

American Heart Association: Clinical Research Grant # 12CRP11910021

Involving the Community Cultural Sensitivity

- Theory of Planned Behavior – theoretical framework
- Motivation to lose weight, become more physically active differs by cultural group based on differing views of body size and shape (Kumanykia,1993)
- Recent AHA Scientific Statement highlights need for more evidence for intervention trials aimed at physical activity and dietary changes in all populations (Artinian et al., 2010)
- Higher incidence of DM2 , HTN, Heart disease, stroke , Hypercholesteremia in Black women (CDC, 2007: World Health Organization, 2006)

Involving the Community Cultural Sensitivity

- Evidence supports churches are conducive environments for behavioral treatment programs for Black women (Kennedy 2005, Ramirez 2007, Sbrocco 2012)
 - Church provides an inviting social environment
 - Familiarity and the program is church sanctioned
 - Social support plays a vital role in behavior change (Dallow & Anderson, 2003)

Community Advisory Board – from inception of the idea, support with grant, aiding and guiding every aspect of the study...PRICELESS!

Significance

- Women ages 25-45 increases in morbidity and mortality-Significantly higher in Black women
- Higher prevalence of risk factors than white women elevates the risk for:
 - Early onset of CVD
 - Premature death due to heart disease or stroke
- Gender –based interventions limited
 - Participation in studies by young black women (YBW) underrepresented or non-existent
- Little evidence of targeted behavior change interventions in this population

Design and Methods

- Community – based RCT comparing the effectiveness of a self-management risk reduction program combined with wireless coaching to usual care.
- Sample: N= 90 young black women ages 25-45 yrs. (45 Intervention & 45 Usual Care) having 2 or more CVD risk factors
- Community-Based Advisory Board from 2 churches in L A area. Participants randomized by church.

CVD Risk Factors

- Family history of CVD
- History of hypertension or taking medications for hypertension
- Abnormal lipids or taking medications for abnormal lipids
- Diabetes
- Gestational diabetes
- Current smoker or tobacco user
- Overweight or obese
 - Body mass index of ≥ 25 kg/m²
- Sedentary lifestyle
 - Do not engage in at least 30 minutes of moderate activity at least 4 days per week
- Diet high in saturated fat ($\geq 10\%$ kcal per day) or total fat ($\geq 30\%$ kcal) or low in fruit and vegetable intake (< 5 servings per day)

Measurements		Baseline	3 months	6 months
Clinical Measures	Waist, BMI, BP, CRP-inflammation, Lipids	X	X	X
Food Frequency Questionnaire (Computer)	Diet Patterns/ Nutrition	X	X	X
Newest Vital Sign	Literacy	X		
Demographics- Health History	Family & Medical	X		
Brief Symptom Inventory	Anxiety	X	X	X
Patient Health Questionnaire	Depressive Symptoms	X	X	X
Medical Outcomes Study -SAS	Adherence	X	X	X
Stanford Brief Activity Survey	Perceived	X	X	X
MOS-SF-12	Quality of Life	X	X	X
Protection Motivation Theory	Health threat of heart disease, self efficacy	X	X	X
INTERHEART STRESS	Stress	X	X	X
Perceived Social Support Scale	Social Support	X	X	X
Rosenberg Self-esteem	Self-esteem	X	X	X

Intervention

- Heart Health Package
 - Whole health approach
 - One-on-one
 - Small groups at the church
- Promotion of self-management
- Skill-based
- Individualized goals
 - Feedback
 - Unique barriers addressed
- Culturally sensitive

Heart Health Education

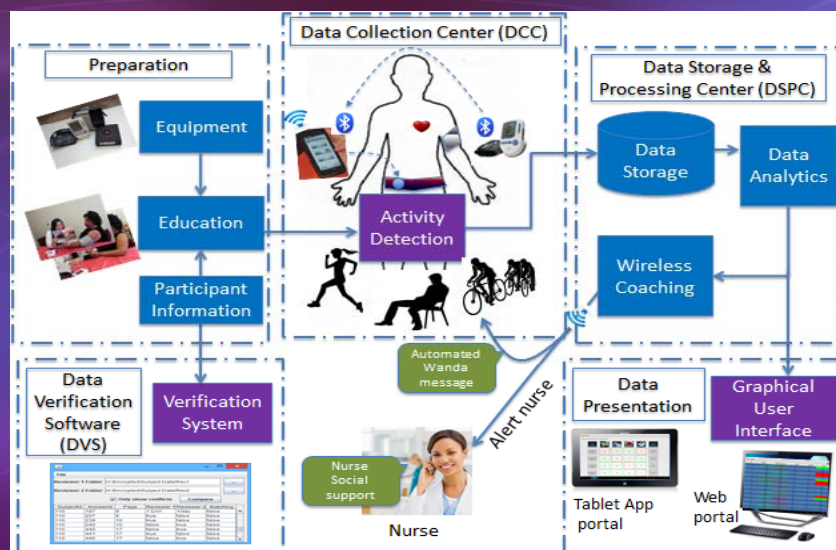
- Self-management
- Heart healthy eating
 - Reading food labels; portion control (first regardless of other choices)
 - The facts about fats revealed
 - How to eat enough fruits and vegetables
 - Whole grains, high fiber
 - Meats, poultry, fish - -how much, how often
 - Low fat dairy
- Physical activity for heart health
- Medication adherence
- Stress management
- Smoking cessation and avoiding second-hand smoke
- Healthy salt intake for life

Intervention: Wanda-CVD

- Self-management risk reduction program
 - Wireless Coaching
 - Automated transmission of messages
 - Examine activity level using wearable smartphone
 - Daily/Weekly questionnaires
 - Blood pressure measurement
 - Wireless transmission to database with data analytics
 - Easy to use Graphical User Interface (GUI) for clinicians
 - Tablet and Web-based portal
- Goal of 6 month study
 - Study usefulness of education and technology in reducing CVD risk
 - 90 women (45 intervention, 45 control)
 - Examine effectiveness of risk factor reduction
 - Blood pressure, weight, BMI, lipid profile, hsCRP
 - Examine activity level and food consumption
 - Test acceptability and feasibility (i.e. adherence)



Wanda-CVD System Design



Wanda-CVD App: User Settings



Wanda-CVD App: Daily Questionnaire

Monday	Tuesday
<p>WANDA</p> <p>Question 2 Question 3 Question 4</p> <p>How many fruits did you eat today?</p> <p>0 1</p> <p>2 3</p> <p>4 5+</p> <p>Cancel</p>	<p>WANDA</p> <p>Question 10 Question 11 Question 12</p> <p>Did you eat low fat or fat free dairy products?</p> <p>Yes No</p> <p>Cancel</p>
	<p>WANDA</p> <p>Question 7 Question 8 Question 9</p> <p>Did you try to reduce the amount of stress in your life?</p> <p>Yes No</p> <p>Cancel</p>

Wanda-CVD App: Weekly Questionnaire

WANDA

Welcome to WANDA

Hello, Nabil

Answer a few quick questions

Take your Blood Pressure Measurement

Answer your weekly questions

Question 1 Question 2

Got at least 30 minutes of moderate activity at least 4 days of the week

None of the time

Some of the time

Most of the time

All of the time

Cancel

Question 5 Question 6 Question 7

Ate 5 or more servings of fruits and vegetables each day?

None of the time

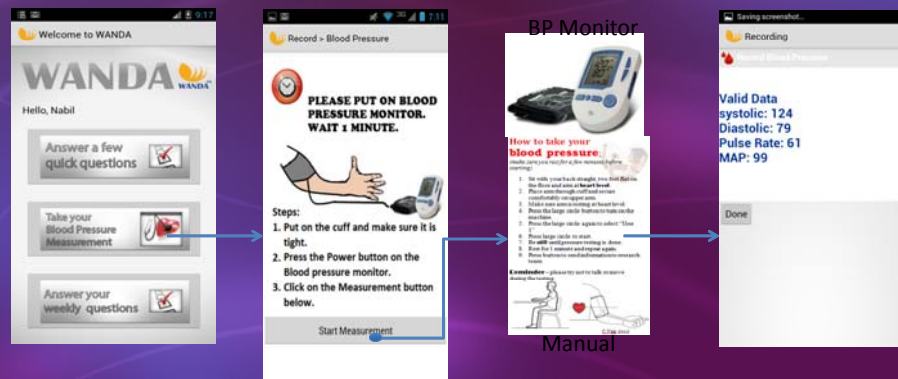
Some of the time

Most of the time

All of the time

Cancel

WANDA App: Blood Pressure Monitor



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WANDA App: Activity Monitoring

- Activity Monitoring
 - Continuous
 - Seamless
 - Wireless
 - Activity Intensity
 - METs



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Wanda-CVD: Wireless Coaching

Motivational Message

“People who take care of themselves are better equipped to take care of others”

What we hope to achieve is.....

To test a self-management intervention to determine whether it is efficacious in at risk young black women in preventing or halting the progression of heart disease. By giving them the tools and social support and delivering information in a manner that is familiar and salient to them over a 6 month period we are hoping for sustainability and a better quality of life for Black women as they age.

Thank you for your time and attention.....

Women's Heart Health Team

- **Community Advisory Board**
 - Reverend Jackie Russell
 - Pastor Kasey Whitney
 - Lady Myesha Chaney
 - Michelle Starr Grover
- **UCLA School of Nursing**
 - Lynn Brecht -Statistician
 - Dana Ryan PhD
 - Connie L. Van – RN, BSN
 - Sofia Husser – UCLA Nursing student
 - Angelina Pham - Nursing student
 - Dr. Deborah Koniak-Griffin - Consultant
- **Ronald Reagan UCLA Medical Center**
 - Dr. Karol Watson (Co-I)
- **Wireless Health Institute**
 - Dr. Majid Sarrafzadeh (Co-I)
 - Nabil Alshurafa PhD_(c)
 - Suneil Nyamathi MS CS
- **University of Kentucky School of Nursing**
 - Dr. Debra Moser –Mentor-(Co-I)