Partnering with a Community Clinic to Provide Diabetes Self-Management Services Utilizing a Telehealth Approach

AVÉ MARIA RENARD, PSYD, DEPARTMENT OF PSYCHOLOGY AND CENTER FOR HEALTH DISPARITIES RESEARCH

AMARIS R TIPPEY, BA, DEPARTMENT OF PSYCHOLOGY, EAST CAROLINA UNIVERSITY

LAURA M DANIELS, MA, DEPARTMENT OF PSYCHOLOGY, EAST CAROLINA UNIVERSITY

LISA C CAMPBELL, PHD, DEPARTMENT OF PSYCHOLOGY AND CENTER FOR HEALTH DISPARITIES RESEARCH

Objectives

- Discuss disparities in diabetes affecting ENC
- Describe the challenges experienced by people with diabetes who also have elevated symptoms of depression
- Discuss the cultivation of a partnership with Kinston Community Health Clinic
- Describe the development of the Diabetes Self-Management Study and components of the Diabetes Self-Management Intervention
- Discuss various program components of the diabetes self-management research study

Diabetes

A group of diseases that have in common, the condition of too much blood glucose or blood sugar.

The excess sugar in the blood occurs because of a problem with the hormone, insulin, which the body requires to metabolize, or break down the glucose into units of energy needed by the body.

Glucose or sugar builds up in the blood because the pancreas does not produce insulin, produces insufficient amounts of insulin, or the body's cells are resistant to insulin.

Diabetes- Common Types

- **Type 1 diabetes**: results from the body's failure to produce insulin, and presently requires the person to inject insulin. (Also referred to as *insulin-dependent* diabetes mellitus.

- **Type 2 diabetes**: results from **insulin resistance**, a condition in which cells fail to use insulin properly, sometimes combined with an absolute insulin deficiency. (Formerly referred to as *non-insulin-dependent* diabetes mellitus, *NIDDM* for short, and *adult-onset* diabetes.)

- **Gestational diabetes**: is when pregnant women, who have never had diabetes before, have a high blood glucose level during pregnancy. It may precede development of type 2 DM.

Monitoring Blood Glucose

- **Home Self- monitoring:**
  - **Blood glucose test using a diabetes monitor- at morning fasting, other times of day**
  - **Diabetes Log- record results in along with any diabetes medication**
  - **Diet and Activity may also be recorded**

- **Health Clinic**
  - **Laboratory testing- A1c (hemoglobin A1c)- blood test that reflect average blood glucose level for *past 3 months***
  - **Comparison of last 2 A1c tests to determine trend, need for treatment plan change, other evaluation**
  - **Assessment of any symptoms**
  - **Assessment of eyes and feet (annual) skin signs of poor healing, sensation in hand, feet**
  - **Special testing and referral as indicated**

Centers for Disease Control and Prevention: National Diabetes Surveillance System. Available online at: http://apps.nccd.cdc.gov/DDTSTRS/default.aspx. National Diabetes FactSheet,2011.Retrieved 1/19/2012

Diabetes Complications

Heart disease and stroke	**Kidney disease**	**Dental disease**
Hypertension	**Nervous system disease**	**Increased susceptibility to other illnesses**
Blindness and eye problems	**Amputations**	**Depression**

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Diabetes and Depression

- People with diabetes are twice as likely to have depression, which can complicate diabetes self-management
- Depression is associated with a 60% increased risk of developing Type 2 diabetes
- Depression can not only undermine diabetes self management, but it is associated with stress which in turn, increases blood glucose levels

Depression

Depression is a common mental disorder affecting mood, thoughts, body

Symptoms

- Loss of interest or pleasure
- Feelings of guilt or low self-worth
- Disturbed sleep
- Disturbed appetite
- Low energy
- Poor concentration

Behaviors

- Withdrawal, isolation
- Irritability
- Crying
- Suicide

Reducing Complications of Diabetes

Receive regular preventive care

Participate in diabetes education/training- knowledge, problem solving and coping skills

Monitor blood glucose

Manage hypertension (high blood pressure)

Control cholesterol

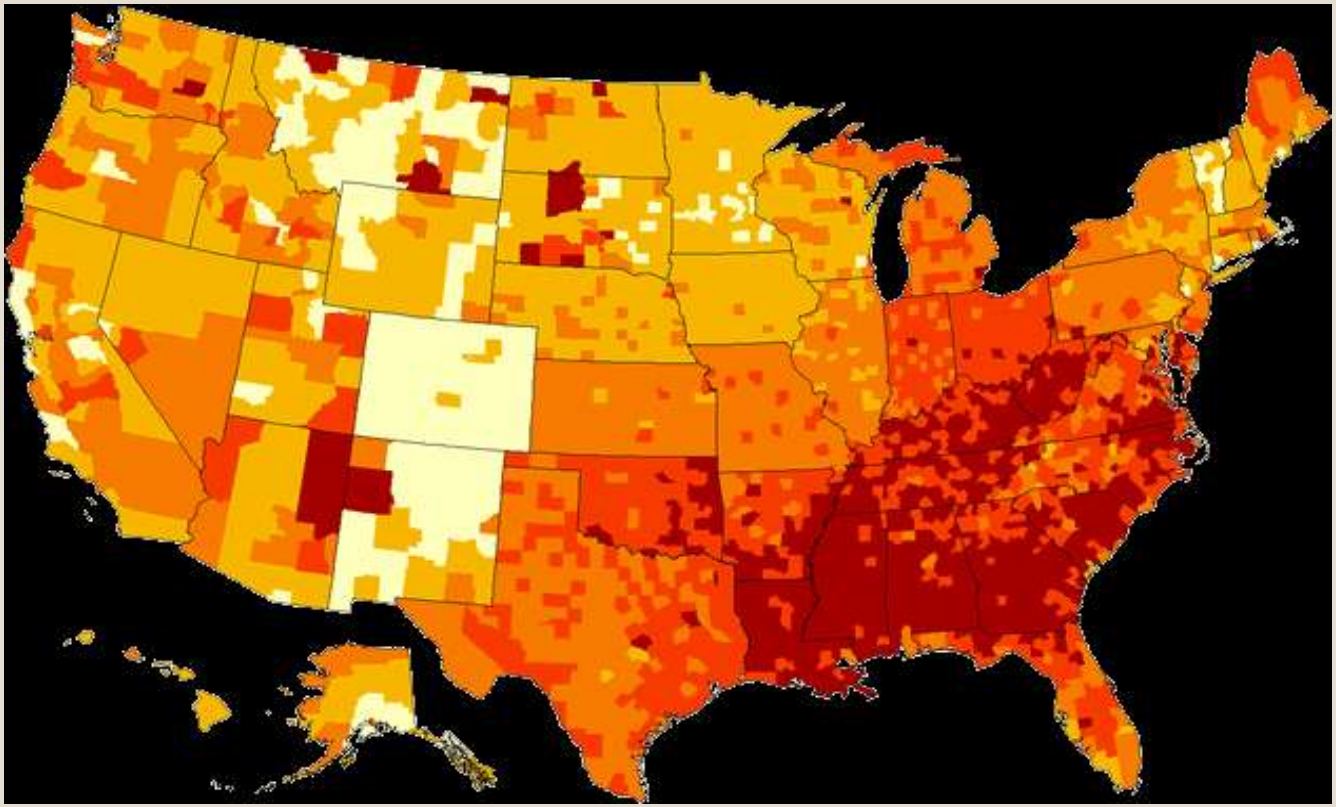
Take medications as prescribed

Eat a healthy diet

Be physically active- exercise, dance, move

Lose excess weight

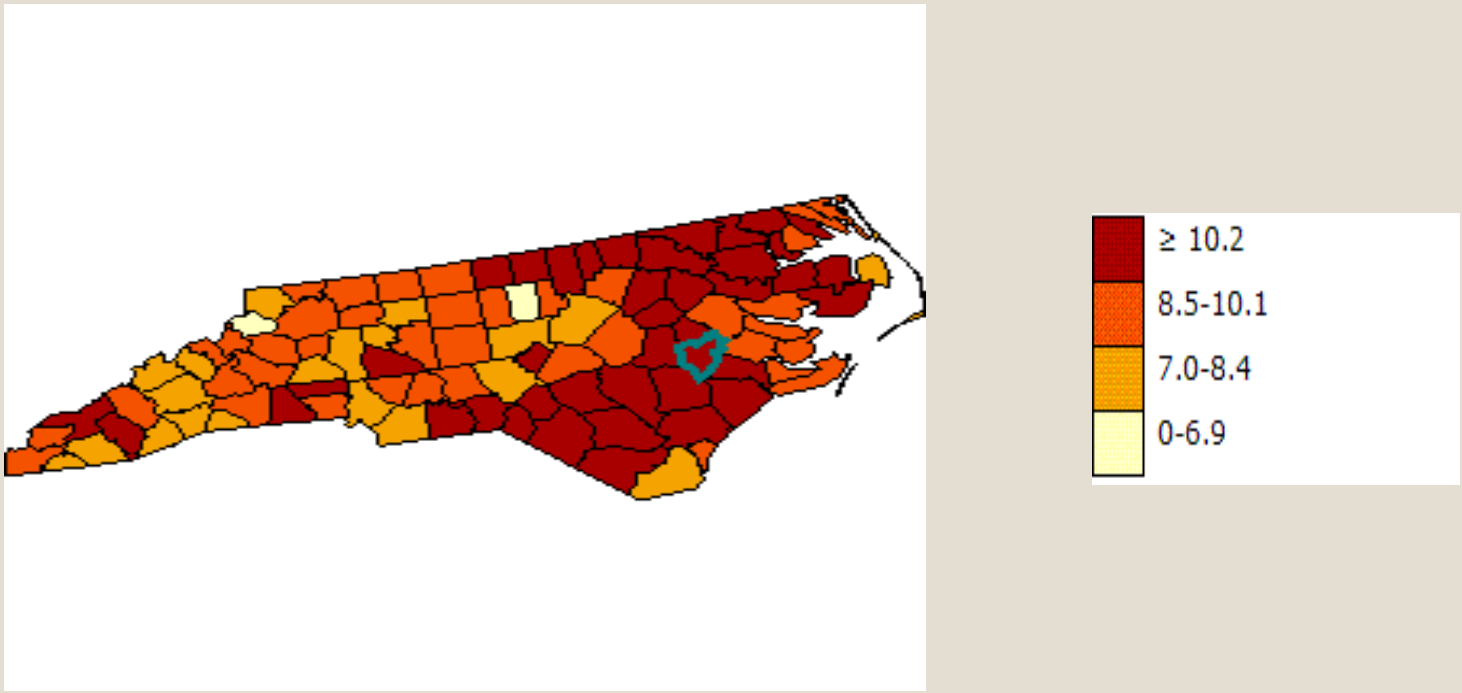
Adults† with Diagnosed Diabetes



2008 Age-Adjusted Estimates of Percentage

Centers for Disease Control and Prevention: National Diabetes Surveillance System. Available online at: http://apps.nccd.cdc.gov/DDTSTRS/default.aspx. Retrieved 1/24/2012.

Adults† with Diagnosed Diabetes in North Carolina



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NC Diabetes Report Card

Diabetes deaths per 100,000 population	1999 – 2003	Ratio		2004 - 2008	Ratio	Grade
All	97.5			93.7		
White	82.4	1.0		80.2	1.0	
African American or Black	173.5	2.1	D	163.8	2.0	D
American Indian	158.0	1.9	C	138.0	1.7	C
Asian/Pacific Islander	41.4	0.5	A	36.3	0.5	A
Hispanic or Latino	47.3	0.6	A	45.9	0.6	A

Kinston Community Health Center (KCHC)

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- Federally Qualified health Center (FQHC)-Funded by federal government to provide healthcare regardless of ability to pay or of citizenship status
- Provides comprehensive primary care family medicine, obstetrics/gynecology and dental services
- Infrastructure with telecommunication networks
- Community Outreach programs geared toward special populations: farm seasonal workers, elderly, homeless and persons living with HIV/AIDs

ECU Partnership

- 9/2009 ECU Department of Psychiatric Medicine supports its inaugural Clinical Psychology Internship Training Program to launch an Integrated Behavioral Medicine service at KCHC
- 3/2010 Psychology Interns (BSOM) provide integrated behavioral health. All new patients screened for depressive symptoms (PHQ-9)as part of KCHC enrollment process
- 10/2010 ECU CHDR/Psychology Department develops a project to train doctoral students and pilot a diabetes self-management intervention at KCHC

KCHC→←ECU Partnership

A sustainable partnership between **KCHC** and **ECU**

Increase capacity building for KCHC- with interventional research and referral loop to clinical providers

Provide ECU an environment with a well developed infrastructure in which to offer mental health services and a training venue for future providers

Telehealth

- APA defined "telehealth" as health services in which health-care professionals and their clients use interactive, real-time communication media to connect across distances.

- An emerging area in which generally recognized standards for professional training and practice are not yet in place

American Psychological Association, Monitor Aril 2000, 31, No.4

Telehealth

- Use with rural and underserved to increase access
- Provides ease of use, no “wait time” for appointment
- Hands- free speaker phone to facilitate various instructions
- Augments periodic clinic visit or, as alternative to frequent visits
- Reduces travel time and costs

Telehealth and the 4 “C”s

- **Contracting**
- **Competence**
- **Confidentiality**
- **Control**

Diabetes Self- Management Study

Purpose

To examine efficacy and feasibility of a telephone-based program to promote diabetes self-management in patients with diabetes and who are also experiencing elevated depressive symptoms

Objective

To improve diabetes management and outcome through delivery of behavioral and psychological interventions aimed at increasing motivation for diabetes self-management to reduce disease progression and improve physical and psychological functioning

Study Methods

Patient identification/enrollment

Adult patients with diabetes and PHQ-9 scores >6 (and/or who endorse depression question #2).

Face to face enrollment/assessment

- Informed Consent
- Pre treatment Measures
- Training in diabetes monitor
- Training in speaker telephone use
- Diabetes self-management kit

Diabetes Self-Management Kit

ECU TOTE BAG

Diabetes meter

Diabetes meter strips

Diabetes meter lancets

Participant Diabetes Resource Manual

Speaker Telephone

Study Methods (cont)

Treatment Protocol

- 6 telephone based, manualized education sessions
- Ongoing assessment of mood and referral back to PCP if needed for increasing depressive symptoms

Exit

- Post treatment measures
- Referral back to PCP if indicated for f/up of depressive symptoms
- Gas cards

Outcome Measures

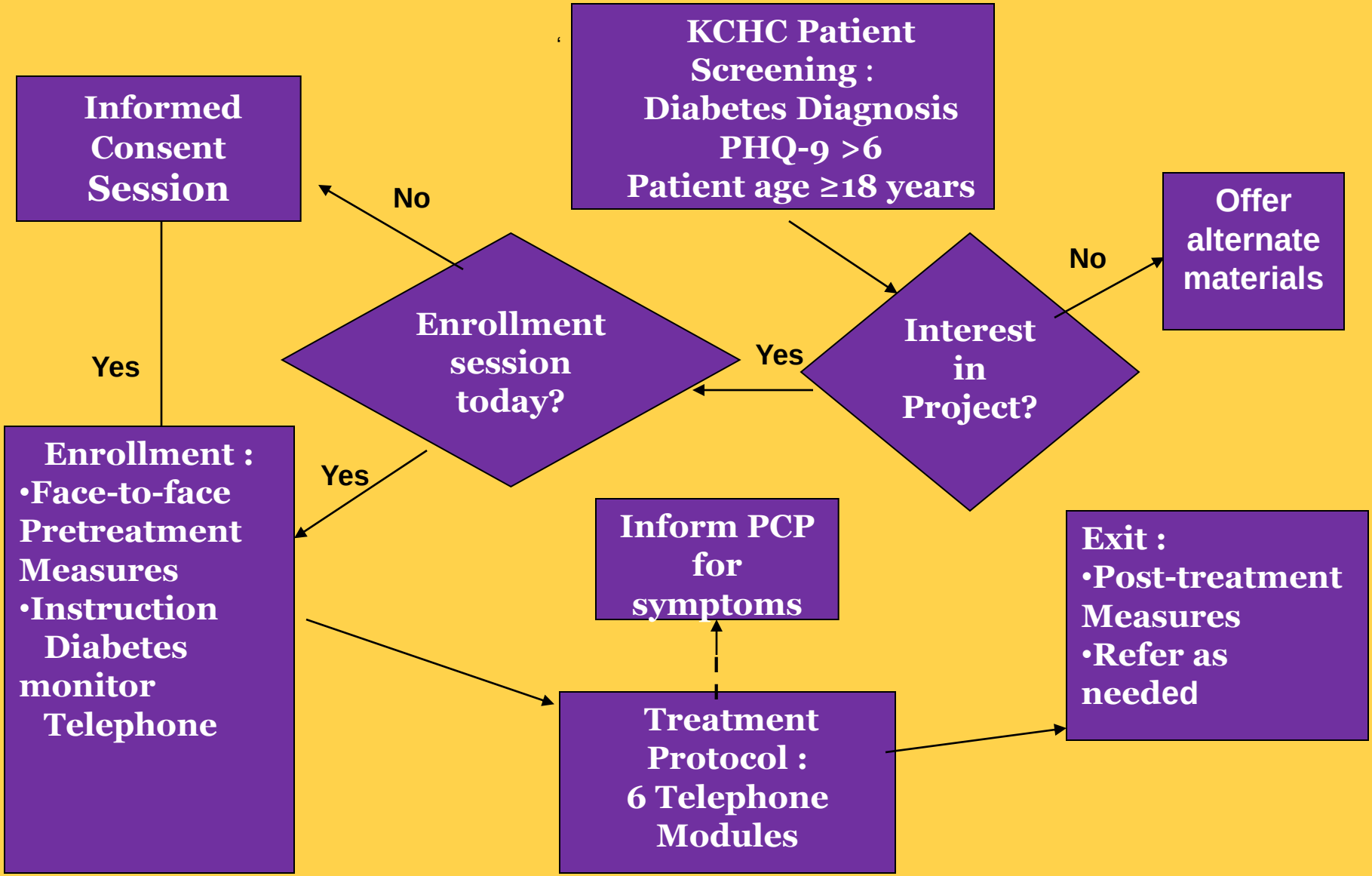
- PHQ-9 Depression Screen
- Biological markers- eg. A1c
- SF-12 Health Related Quality of Life (QOL)
- Diabetes Self- Efficacy
- Medical Adherence Scale
- DM Knowledge Test
- Diabetes Distress Scale

Intervention Overview

1. Program Overview-diabetes and depression
2. Diabetes Self-Management
3. Food as Fuel
4. Healthy Active Lifestyle
5. Diabetes Complications
6. Lifelong Success

- Resource reference guide

ECU Diabetes Self-Management and Support Project



Program Feasibility

- **Partnership**
  - Positive Professional Provider/Staff Relationships
  - Study Referrals
  - Feedback to PCP
- **Telehealth**
  - Ease of Equipment Use
  - Land line availability
  - Good cell phone reception/Clarity of Sound
  - Consistent Telephone Appointments

Study Outcomes

Patient Outcomes

- **Diabetes self- management**
  - **improved self-efficacy and medication adherence at 3 months after treatment ends**
- **Diabetes Outcomes**
  - **improvement in A1c, blood pressure, and lipid parameters at 3 months after treatment ends**
- **Psychosocial functioning**
  - **improvement in depressive symptomology and quality of life at 3 months after treatment ends**
- **Health care utilization**
  - **fewer clinic visits and hospitalization related to diabetic exacerbations at end of 12 months**

Patient Demographics

***N* = 17**

Gender:

88% female (*n* = 15)

	Age	A1C Normal Baseline	A1C Patient Baseline	PHQ-9 Normal Baseline	PHQ-9 Patient Baseline
Average	56	≤6%	9.2	<6 Q#2 =0	13
Range	38- 73	Less than 7%	5.8- 14.3		2- 23

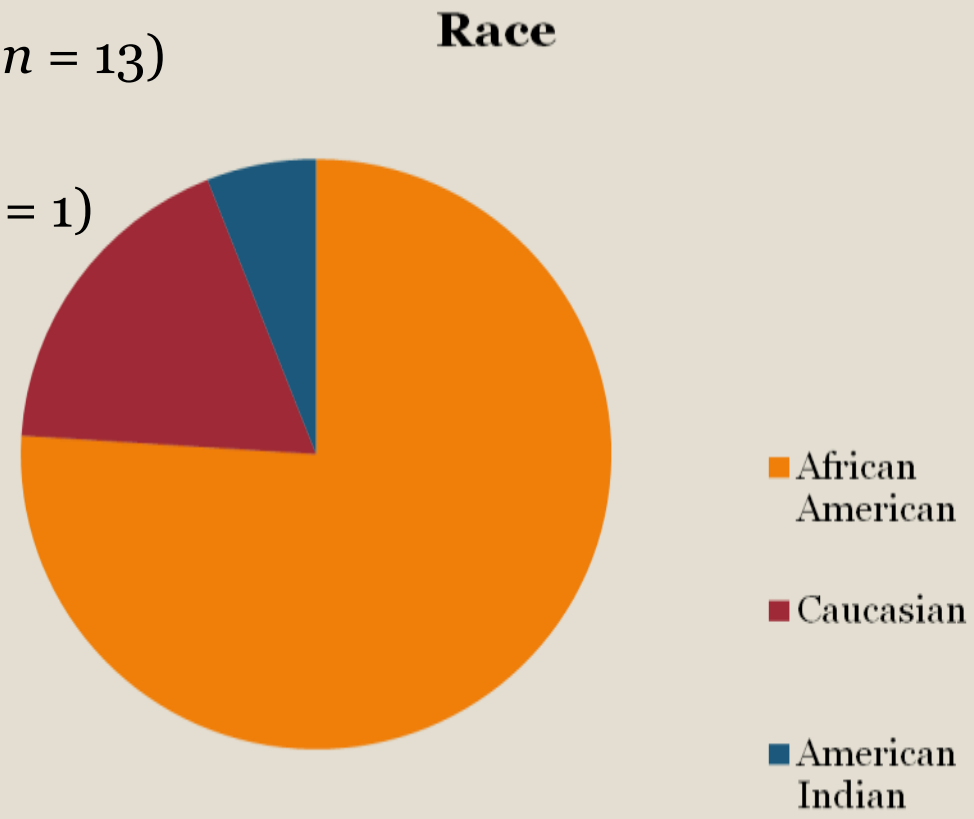
Patient Demographics (cont)

Race:

76% African American (*n* = 13)

18% Caucasian (*n* = 3)

6% American Indian (*n* = 1)



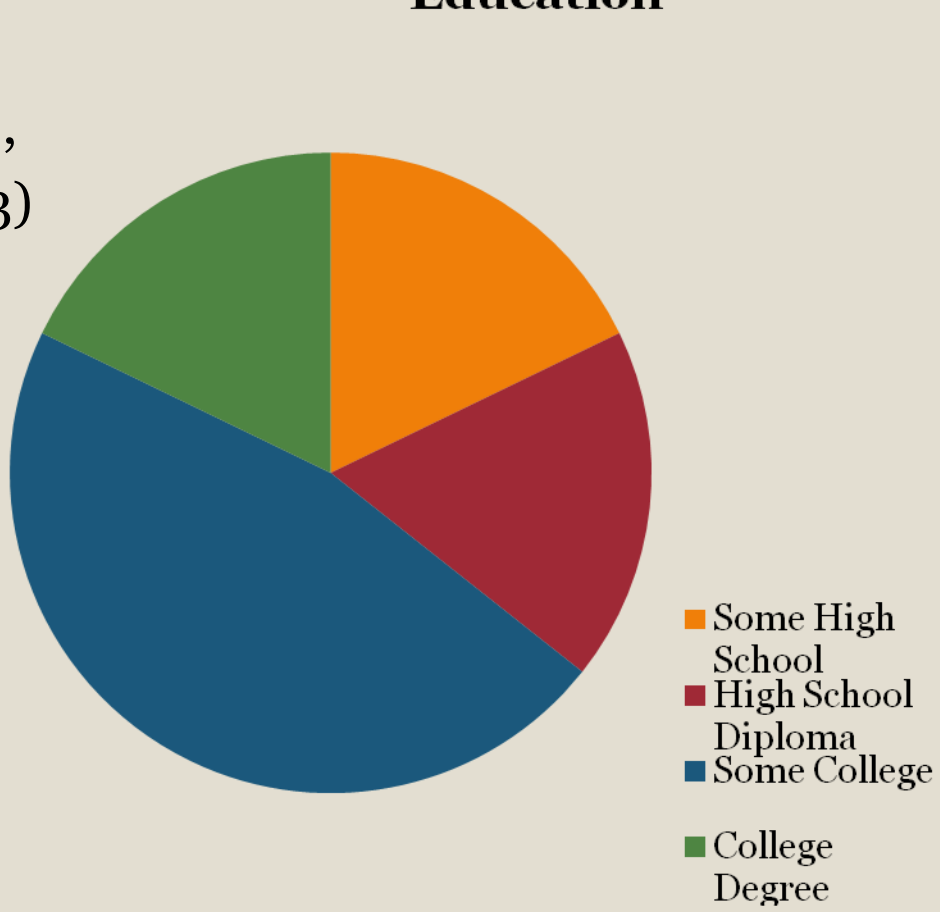
Patient Demographics (cont.)

Education:

18% High School (n = 3),

47% Some College (n = 8),

18% College Degree (n = 3)



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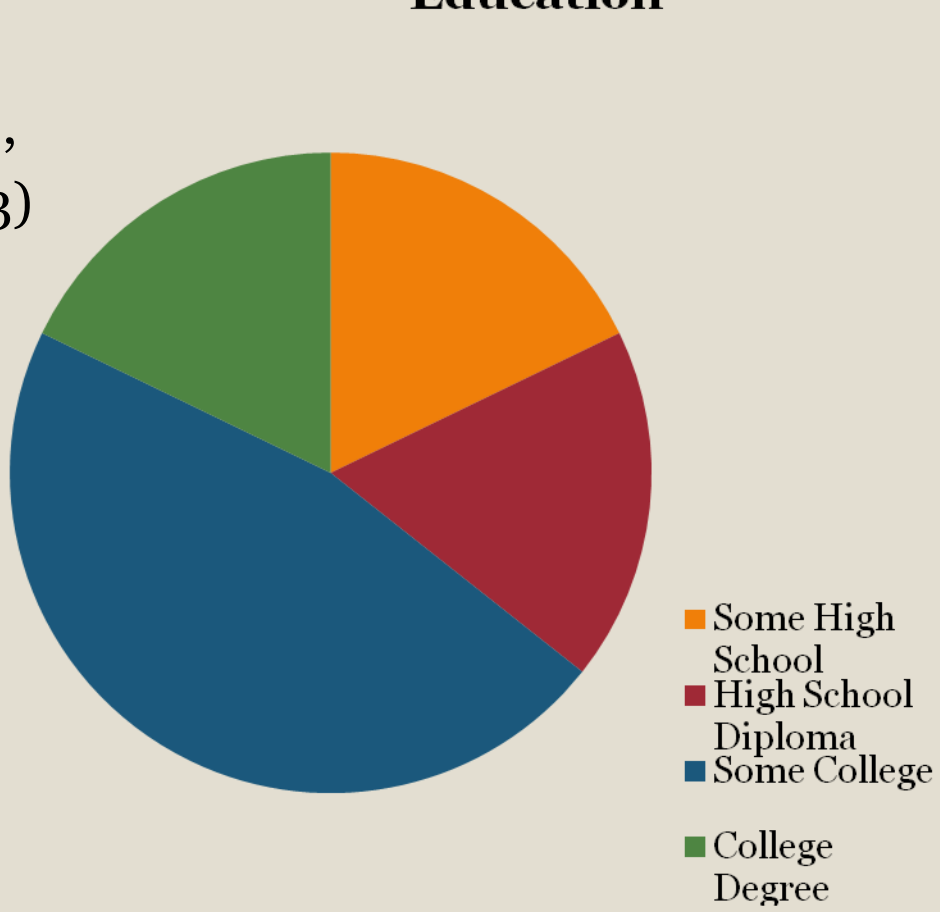

Patient Demographics (cont.)

Patient Living Distance from KCHC:

76% 0.2 – 10 miles ($n = 13$)

24% 10.1 – 21 miles ($n = 4$)

Average Distance 6.8 miles

Range Distance .2- 20.2 miles

Observations from Interventionists

Acknowledgements

- Sy Atezaz Saeed, MD, MS
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