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Introduction

Type 2 DM is a global health burden, with 425 million adults living with diabetes in 2015
24% to 62% of these people living with diabetes worldwide are undiagnosed and untreated (WHO, 2016)

❑ People's attitudes and behaviors tend to shape their utilization of healthcare and preventive services
❑ The key to Type 2 DM prevention is willingness of at-risk individuals to adopt healthy lifestyle choices
❑ Better utilization of primary care services will improve early detection of prediabetes leading to type 2 DM prevention (Owei, et al, 2019).

American Diabetes Association. Connected for Life

The Staggering Costs of Diabetes

2.3x greater health care costs for Americans with diabetes

$327B annual cost of diagnosed diabetes in America

34M More than 34 million Americans have diabetes

By county
less than average: 0-6%
national average: 7-10%
above average: 11% or higher

88M More than 88 million Americans have prediabetes

Today in America
Diagnosed with diabetes — 4,110
Undergo an amputation — 356
End-stage kidney disease — 159

$1 in $7 Health care dollars is spent treating diabetes and its complications

Learn how to fight this costly disease at diabetes.org/advocacy

Learn more at diabetes.org 1-800-DIABETES (1-800-342-2383)

Background and significance

In the United States of America, diabetes causes 83,564 deaths or 25.7 per 100,000 deaths per year

❑ The 7th leading cause of death in USA
❑ 7.8 million hospital discharges and 16million ER visits in 2016 (CDC, 2020)
❑ More than 88million Americans have prediabetes; 90% of these do not know they are prediabetic

❑ The national cost of diabetes in 2017 was greater than $327b, up from $245b in 2012 (ADA, 2020)
❑ In New Jersey, Age-adjusted prevalence of diagnosed DM was 9.9%. Blacks accounted for 13.7%. Second to Hispanics with 15.1%

Methodology

❑ **Study Design:** Quasi experimental using single group pre and posttest
❑ **Setting:** The study was conducted in a small immigrant black church in Northern New Jersey.

❑ **Participants:** Male and female adults from Africa and the Caribbean, aged ≥ 35 years
❑ **Sample:** 15 participants with no diagnosis of prediabetes or T2DM met inclusion criteria and signed informed consent and completed the study.

Aims and objectives

Aims: Determine the impact of the Diabetes prevention program (DPP) on type 2 DM prevention
❑ Improve primary care utilization and adoption of healthy lifestyle

Objectives
-Educate participants on type 2 DM prevention
-Promote lifestyle change using a tracking tool and evaluate change in diabetes attitude, weight, BMI, and HgA1C

Intervention
❑ **Phase 1**

Recruitment: Baseline weight, BMI, and HbA1C were taken. The CDC's prediabetes risk test was administered to determine scores. A score ≥ 3 was significant.

Questionnaire
• A pre and post - intervention survey comprising of questions from the Diabetes Attitude Survey (DAS) and the Food & Physical Activity survey (FPA) was used to assess the effectiveness of the DPP in promoting lifestyle modification
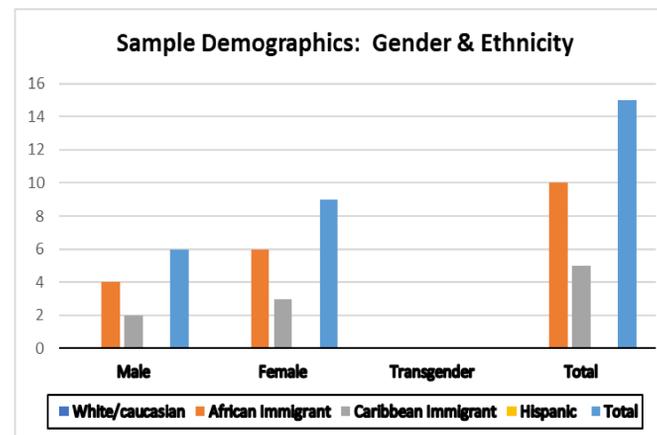
Tracking tool:
Progress of subjects was monitored with the AHA's daily food and physical activity tracking tool.

Prediabetes Risk Test

NATIONAL DIABETES PREVENTION PROGRAM

1. How old are you?
Younger than 40 years (0 points)
40-49 years (1 point)
50-59 years (2 points)
60 years or older (3 points)

2. Are you a man or a woman?
Man (1 point)   Woman (0 points)

3. If you are a woman, have you ever been diagnosed with gestational diabetes?
Yes (1 point)   No (0 points)

4. Do you have a mother, father, sister, or brother with diabetes?
Yes (1 point)   No (0 points)

5. Have you ever been diagnosed with high blood pressure?
Yes (1 point)   No (0 points)

6. Are you physically active?
Yes (0 points)   No (1 point)

7. What is your weight category?
(See chart at right)

Total score:

If you scored 5 or higher

You can reduce your risk for type 2 diabetes

American Diabetes Association. / CDC

Intervention

Phase 2: Diabetes prevention Program (DPP) implemented for 90 days with T2DM education given on day1. DPP modules and lifestyle change followed weekly.
Phase 3: Post 90 days survey and reassessment done, and results compared

Sample Demographics: Gender & Ethnicity
(White/caucasian, African Immigrant, Caribbean Immigrant, Hispanic, Total)

❑ Data Analysis

• **Descriptive statistics** was used to describe the sample in terms of frequencies and percentages.

• **The non-parametric** Wilcoxon signed rank sum test was performed to obtain differences between pre-and postintervention variables weight, BMI, HbA1C, Diabetes Attitude score (DAS) and Food & Physical Activity (FPA) score.

Results

Comparing Pre & Posttest Variables

Body measurement item	mean pre-score	mean post-score	mean change	std dev (change)	signed rank test S	pr >= |S|
BMI (kg/m2)	29.87	29.39	-0.48	1.08	-37.50	0.031
HbA1C (%)	6.33	5.72	-0.61	0.70	-44.00	0.001
Body weight (lbs)	186.35	183.25	-3.10	5.01	-38.50	0.027

Note: N=15, p=0.05, BMI=body mass index, HbA1C=glycosylated hemoglobin, mean pre score=mean score at baseline, mean post score=mean score post 90 days intervention

DAS scores:
Only one DAS item on the questionnaire showed statistical significance
- All other DAS items not statistically significant because baseline scores were already high

Discussion

❑ Although the sample size was small, the results show that the project's aims and objectives were met.
❑ There was an observed improvement in the attitude and knowledge of T2DM among Black American adults.

❑ Lifestyle modification was shown to have resulted in reduced posttest mean HgA1C, weight, and BMI readings of the subjects

Implications

Clinical Practice
❑ This project highlighted the value of community support to foster lifestyle and behavior modification.
❑ Patient education is key to improving knowledge, attitude, and behaviors toward disease prevention.

Healthcare Policy
❑ More policy actions needed to expand the reach of the DPP across the US.
❑ A team-based approach and community-wide reach will drive diabetes prevention to the grassroots.

Economics
❑ Reduction in healthcare expenses.
❑ Reduction in number of ER visits and hospital admissions related to DM nationwide
❑ Improved outcomes for other chronic conditions like hypertension, renal failure, and other CVD risk markers
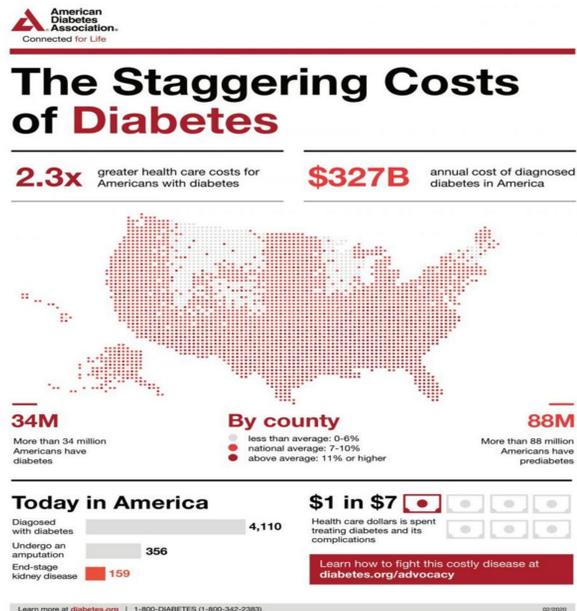
References
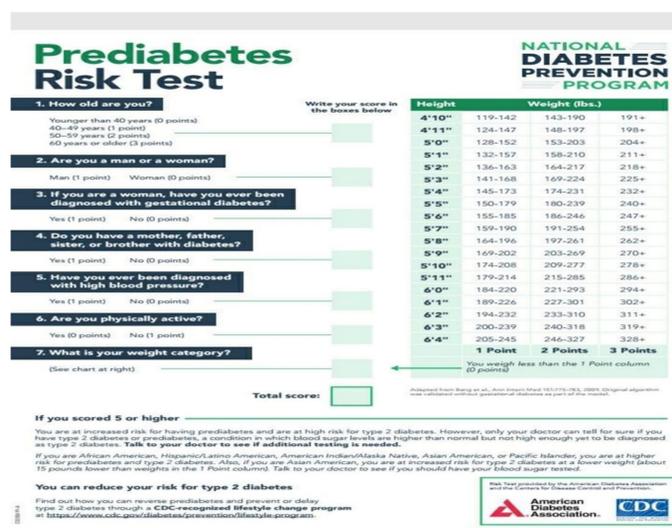Please scan the QR code below

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