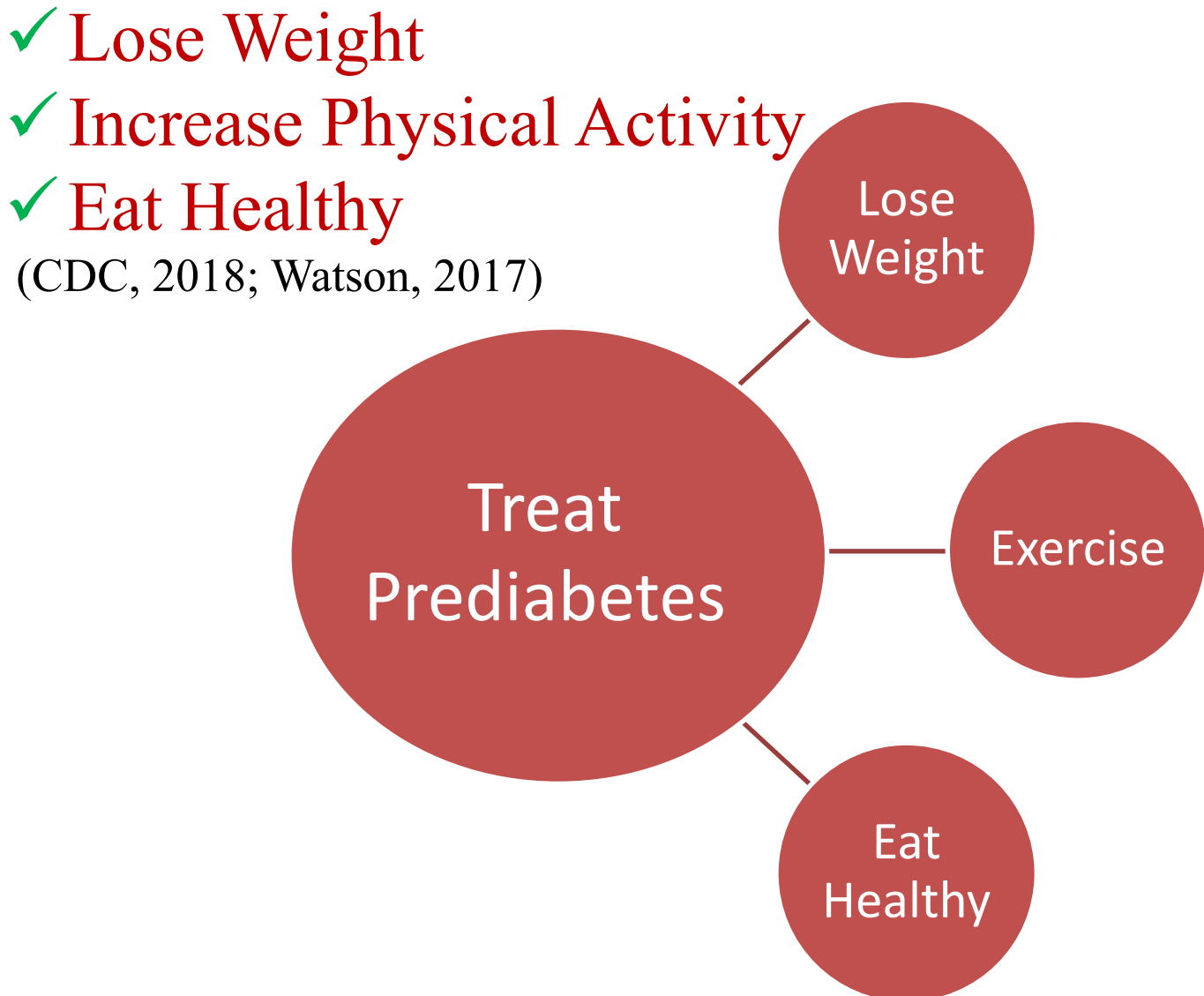


Introduction

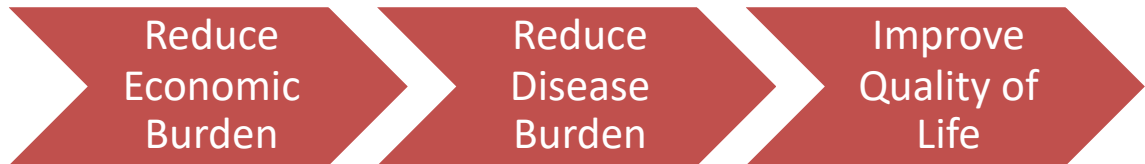
- ❖ Approximately 84 Million Americans have Prediabetes (Centers for Disease Control and Prevention [CDC], 2018)
- ❖ If you have Prediabetes you are more likely to get:
 - Type 2 Diabetes Mellitus
 - Heart Disease
 - Stroke
 - Hypertension
 - Hyperlipidemia
 - Blindness
 - Kidney failure
 - Loss of toes, feet, or legs
- ❖ Treatment of Prediabetes
- Most effective way to reverse Prediabetes and Prevent Type 2 Diabetes is with Lifestyle Modification



Background and Significance

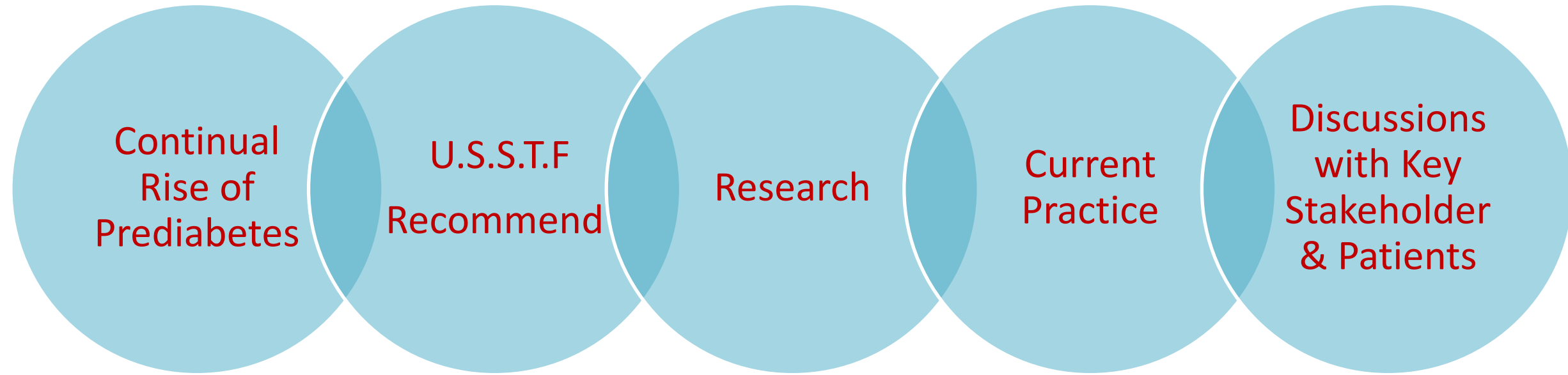
- ❖ More than 1 in 3 American Adults has Prediabetes
- ❖ 9 out of 10 people with Prediabetes are unaware they have it (CDC, 2018)
- ❖ In New Jersey, 2,483,000 people or 37.1% of the adult population has Prediabetes (CDC, 2018)
- ❖ Risk Factors
 - Overweight or obese
 - 45 years of age or older
 - Parent or sibling has type 2 diabetes
 - Physically active fewer than 3 times per week
 - Gave birth to a baby that weighed more than 9 pounds
 - Gestational diabetes
 - Polycystic Ovary Syndrome
 - Race and Ethnicity such as: African Americans, Hispanic/Latino Americans, American Indians, Pacific Islanders, Asian American (CDC, 2018)
- ❖ Economic Impact
 - Diabetes has a massive economic impact on millions of individuals, families, and health care system in the United States.
 - In 2017: Cost of Diabetes cost the U.S. a total of **\$327 Billion**
 - **\$90 Billion** Reduced Productivity
 - **\$237 Billion** Indirect Medical Costs (CDC, 2018; Petersen, 2018)

- ❖ National Health Policy
- Healthy People 2020 Objectives (USDHHS, 2014)



- ❖ Global Epidemic
- 285 million people have Prediabetes around the World (Bergman et al., 2012; Zimmet, 2017).

Needs Assessment



Gap In Care

Problem Statement

The purpose of this quality improvement project is to determine whether a multimedia-based diabetes prevention program reverses or reduces the progression of prediabetes and prevents type 2 diabetes mellitus.

Clinical Question

In a mixed group of English-speaking male and female patients above the age of 18 years old diagnosed with prediabetes, how does the implementation of a Multimedia-Based Diabetes Prevention Program compared to usual care affect the progression of prediabetes and the prevention of Type 2 Diabetes Mellitus within a 90-day time period?

Methodology

| | |
|---------------------------|--|
| Design | Quasi-Experimental Quantitative Study |
| Setting | Solo Internal Medicine Practice in Central New Jersey |
| Study Population | Purposeful Sample of Adults diagnosed with Prediabetes |
| Recruitment | Recruitment Flyers, In-Person Recruitment, Telephone Conversation |
| Consent | Participants were asked to sign Consent |
| Risks and Harm | Minimal Risk, No anticipated Discomfort |
| Cost/ Compensation | No Cost |
| Intervention | Questionnaire, PowerPoint, Educational Handouts, Food Diary Journal, MyFitnessPal App for smartphones (optional) |

Results

| Paired Samples Test | | | | | | | | |
|---------------------|--|--------------------|----------------|-----------------|--|--------|----|-----------------|
| | | Paired Differences | | | | t | df | Sig. (2-tailed) |
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference Lower Upper | | | |
| Pair 1 | Participant Post Intervention Weight - Participant Pre Intervention Weight | 4.00000 | 2.94392 | 1.47196 | -8.68443 .68443 | -2.717 | 3 | .073 |
| Pair 2 | Participant Post Intervention BMI - Participant Pre Intervention BMI | .70000 | .48305 | .24152 | -1.46863 .06863 | -2.898 | 3 | .063 |
| Pair 3 | Participant Post Intervention HbA1c - Participant Pre Intervention HbA1c | .15000 | .12910 | .06455 | -.35543 .05543 | -2.324 | 3 | .103 |
| Pair 4 | Participant Post Intervention Questionnaire Score - Participant Pre Intervention Questionnaire Score | 7.50000 | 5.00000 | 2.50000 | -4.5612 15.45612 | 3.000 | 3 | .058 |

| | |
|--------------------|----------------------|
| Sample Size | 3 Females ♀ 1 Male ♂ |
| Mean Age | 63 Years Old |
| Mean Weight | 4 Lbs. Decrease |
| Mean BMI | 0.7 kg/m2 Decrease |
| Mean HbA1c | 0.15% Decrease |
| Post Questionnaire | 7.5 Point Increase |

Discussion

- ❖ Overall, the participant weight, BMI, and HbA1c all decreased at the completion of the project. The decrease in the patients HbA1c levels at the diagnosis of prediabetes and 90 days post intervention fulfilling the measurable outcome.
- ❖ The results showed that there was an increase in participant knowledge about prediabetes and type 2 diabetes mellitus prevention after the completion of the multimedia-based diabetes prevention educational intervention.
- ❖ The educational PowerPoint helped the participants further understand how to eat healthier and incorporate exercise in their daily routine reducing the progression of prediabetes.
- ❖ The results corroborated that the implementation of the multi media-based Diabetes Prevention Program delayed the progression of prediabetes and prevented type 2 diabetes mellitus

The objective of this project was to educate patients on lifestyle modifications to delay or stop the progression of prediabetes and prevent type 2 diabetes mellitus.

✔ Objective Met

- ✔ Increase in Post Questionnaire Scores
- ✔ Decrease in Participant's HbA1c
- ✔ Decrease in Participant's BMI and Weight

Unfortunately, the results of this Project were not statistically significant due to the small sample size

Implications

- ❖ Minimize Gap in Care
- Implement the Multi-Media Based Diabetes Prevention Program educating Patient's about lifestyle modification such as eating healthy and exercising to lose weight and reverse Prediabetes.
- ❖ Cost Effective
- No Financial Cost to Participant or Practitioner
- ❖ Reduces Participant Burden
- ❖ Improved Quality of Care
- The practitioner can simply play the PowerPoint which ensures the patient has received the proper education about their condition and how to treat prediabetes which also saves the Practitioner time.
- ❖ Improve Access to Care
- Provide Educational PowerPoint with Audio to Health Centers, YMCA's, and other Primary Care Offices to promote the prevention of Type 2 Diabetes Mellitus.

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