Implementing a Hypertension Management Algorithm in a Community Outreach Program

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Introduction

- According to the Joint National Commission, hypertension is a chronic medical condition that arises when blood pressure exceeds 140/90 mmHg
- In the United States, 670,000 deaths have been attributed to hypertension
- People from low socioeconomic backgrounds have poorer blood pressure control because they face specific challenges that prevent them from accessing the resources they need to manage their hypertension effectively. These challenges include lack of transportation, insufficient insurance coverage, healthcare deserts, and healthcare literacy

Project Purpose

- **Overall Purpose**: Identify and treat hypertension in adults in the Tampa Bay community by identifying and addressing potential barriers that may hinder access to proper treatment
- **Overarching Aim:** Implement and assess the efficacy of a Hypertension Management Algorithm for use in a community outreach program
- **PICO-T Question**: In adult patients with hypertension ages 40-75 years, does implementing a hypertension management algorithm, compared to current practice, decrease their blood pressure below 140/90 mmHg over three months?

Model/Nursing Theory

- Nola Pender's Health Promotion Model supplied the theoretical framework for this intervention. According to the model, external factors can impede a participant's commitment to health-promoting actions. A questionnaire identified these external factors, and the providers devised effective solutions to overcome them
- The Model for Improvement and Plan, Do, Study, Act (PDSA) cycle supplied a quality improvement model to guide this intervention.
    - **Planning**: Developed the hypertension management algorithm
    - **Do**: Implemented the hypertension management algorithm over three months
    - **Study**: Analyzed the blood pressure results
    - **Act**: Modified the algorithm for future use

Methods

- **Subjects:** Adults with hypertension between the ages of 40 – 75 years participating in a community outreach program
- **Setting:** A church in a low socioeconomic area of Tampa Bay
- **Instruments/Tools**
    - Initial and final blood pressure readings
    - Treatment Adherence Questionnaire for Patients with Hypertension (TAQPH) measures healthy habits adherence.
    - Hypertension Management Algorithm
- **Intervention and Data Collection**
    - Assess initial blood pressure and TAQPH score
    - Contact participants every two weeks to provide education, review blood pressure results, discuss ways to overcome barriers and provide information on health care.
    - Assess final blood pressure and TAQPH scores after 12 weeks

RESULTS

Hypertension Management Algorithm

Average Systolic Blood Pressure
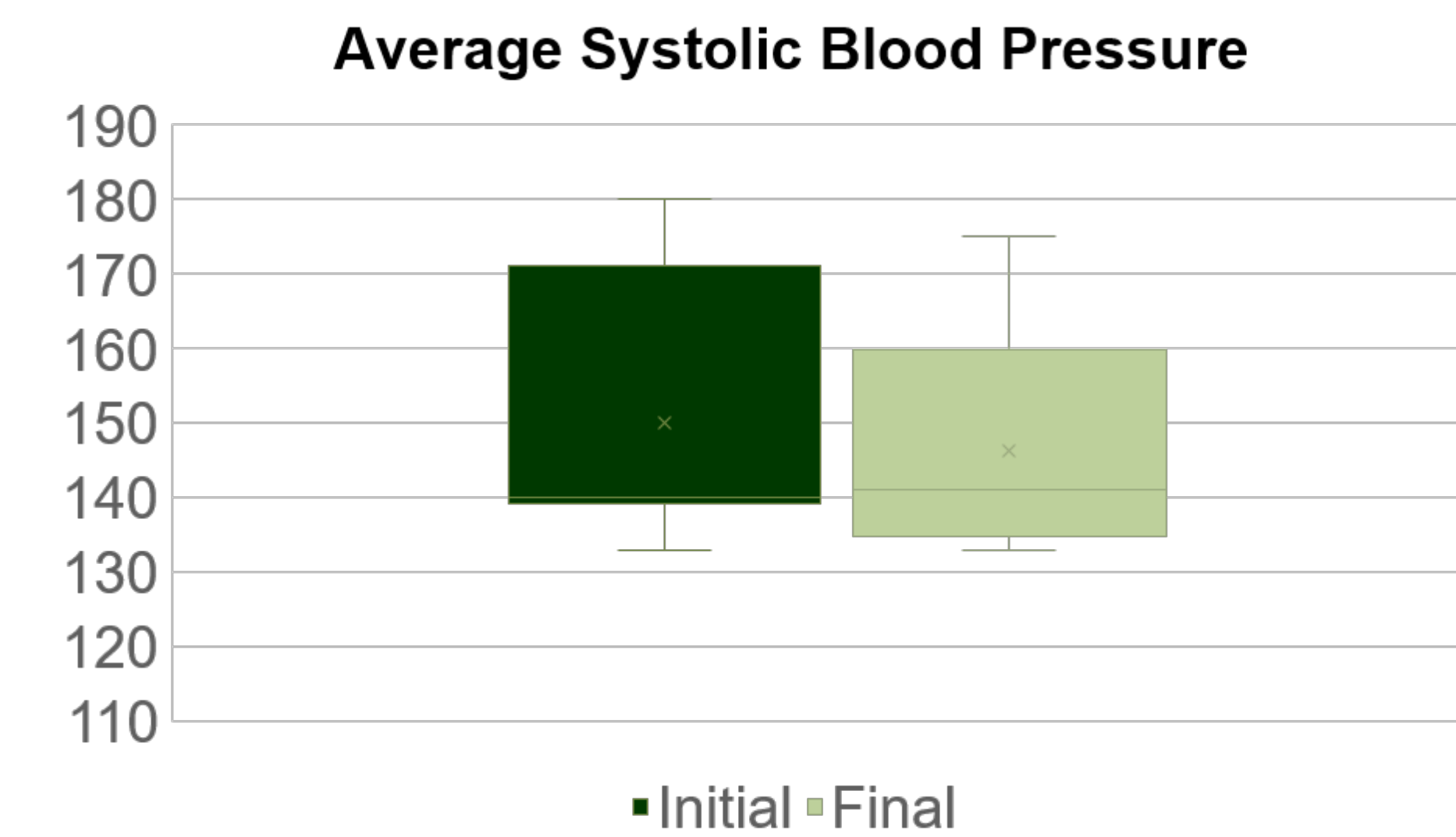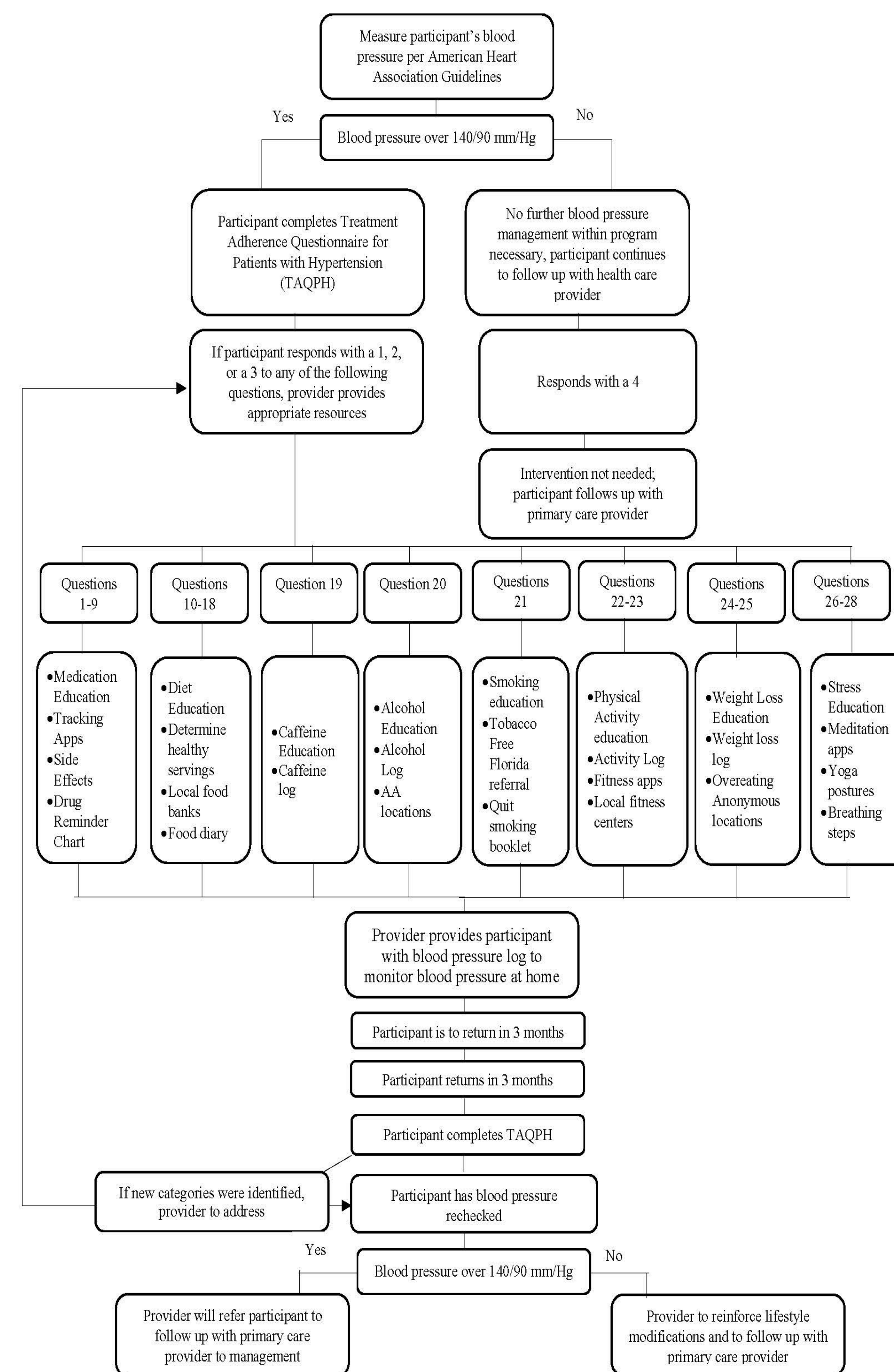
■ Initial ■ Final

Figure 1. There is a decrease in the observed systolic pressure. The final average systolic pressure (146.25) is lower than the initial average systolic pressure (150).
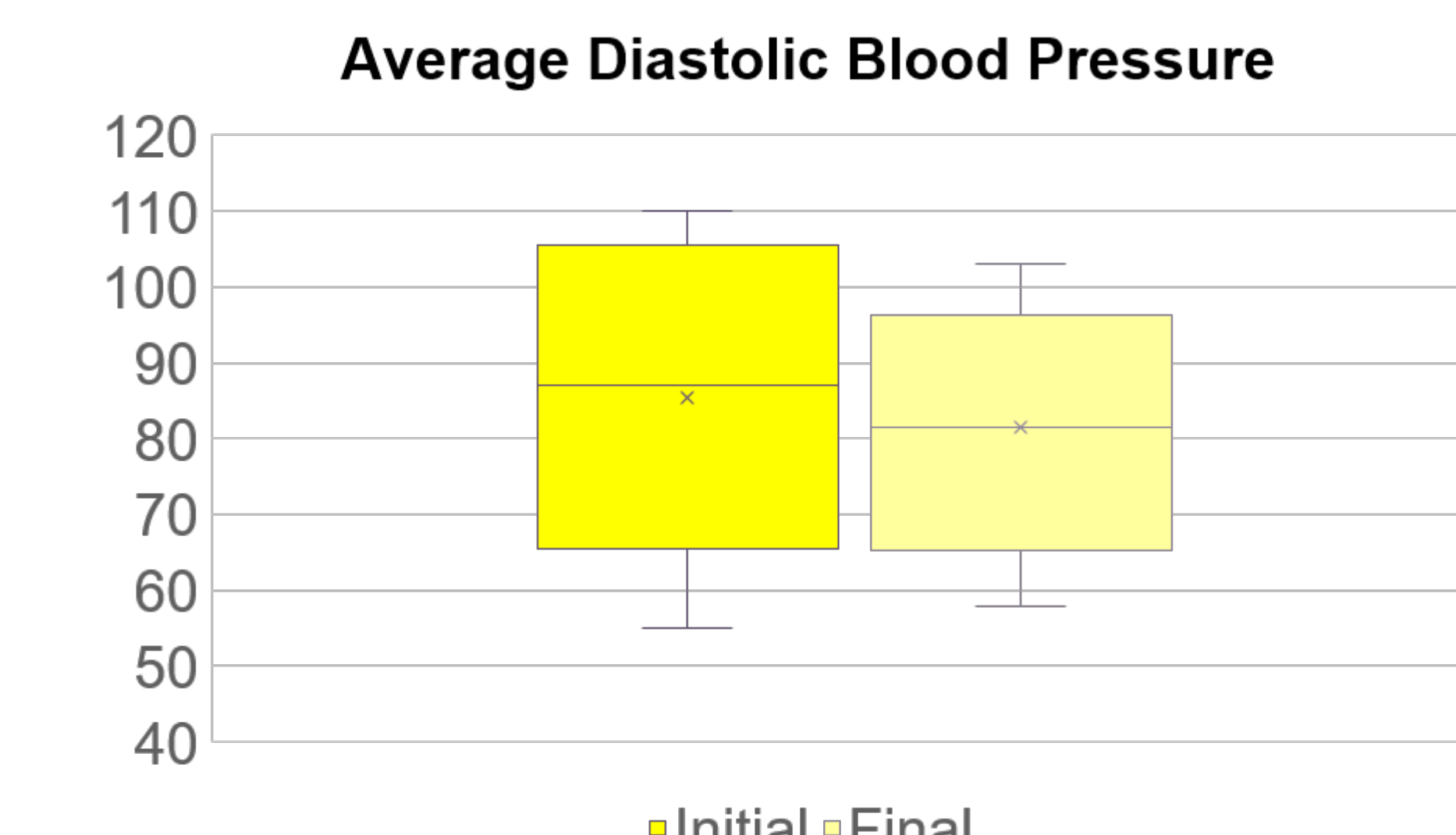

Average Diastolic Blood Pressure

■ Initial ■ Final

Figure 2. There is a decrease in the observed diastolic pressure. The final average diastolic pressure (81.5) is lower than the initial average diastolic pressure (85.4).
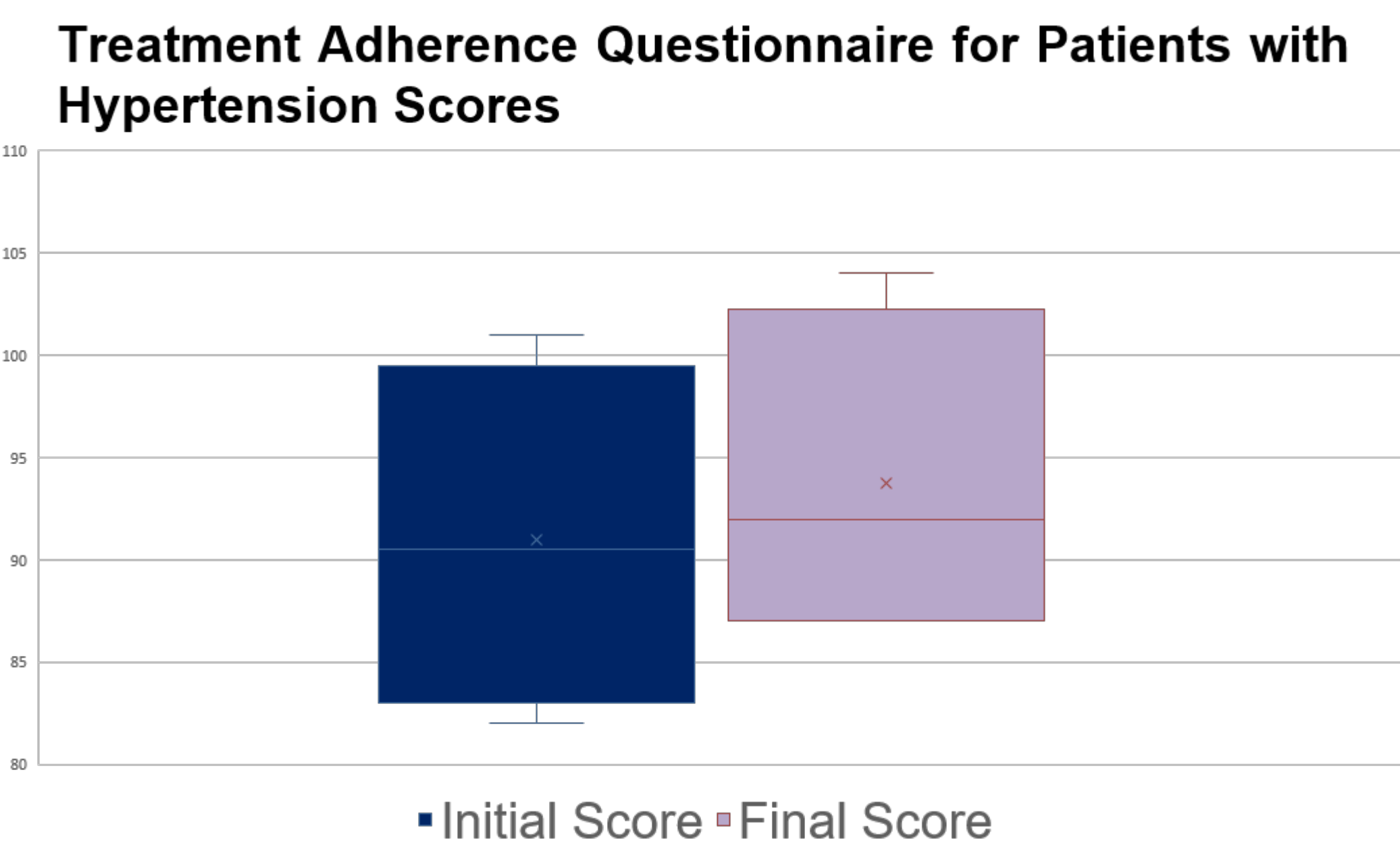

Treatment Adherence Questionnaire for Patients with Hypertension Scores

■ Initial Score ■ Final Score

Figure 3. There is an increase in the TAQPH total score. The final score (93.5) is higher than the initial score (91).

DISCUSSION.

- The participants experienced a decrease in their average blood pressure, indicating the effectiveness of the hypertension management algorithm. This outcome was well received as it aligned with the goal of reducing blood pressure.
- The participants' systolic blood pressure decreased from 150 to 146.25 mmHg, and diastolic blood pressure fell from 85.4 to 81.5 mmHg.
- A paired t-test showed that these decreases were not statistically significant, with p-values of 0.15 and 0.16. However, this was significantly impacted by the challenges with recruitment.
- After completing the project, participants reported a higher TAQPH score, indicating their increased dedication to their hypertension treatment regimen. A paired t-test confirmed that these improvements were statistically significant, with a p-value of 0.0486.

IMPLICATIONS FOR ADVANCE PRACTICE NURSING

- Implementation of this algorithm can guide healthcare providers in identifying and treating hypertension in the community setting.
- Maintaining healthy lifestyle habits can significantly impact an individual's blood pressure readings. The recommendations provided by this algorithm aim to promote healthy lifestyle habits for patients.
- The social determinants of health affect individuals' overall health outcomes. This algorithm provides a way to identify and assess the impact of social determinants on each patient.
- To ensure personalized care, healthcare providers can utilize the algorithm to provide patients with education, resources, and supplies based on their questionnaire responses.

Sustainability

- The clinic staff received training on how to use the Hypertension Management Algorithm effectively.
- A diagram outlining the algorithm was given to the clinic with clear step-by-step instructions.
- Additionally, the clinic's director and staff were provided copies of educational handouts, tools, and resources throughout the initial implementation.

References

SCAN ME

Implementing the hypertension management algorithm resulted in notable improvements in blood pressure readings and a positive change in adherence to healthy lifestyle habits.

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