The Impact of a Nurse-Led Hypertension Lifestyle Education Program for Young Adults with Untreated Hypertension

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**Background**

- Hypertension (HTN) is a leading cause of death in the U.S.
  - Between 2000 and 2013, HTN-related deaths increased by 23%.
- HTN is also a risk factor for other leading causes of death that include cardiovascular disease and stroke
  - Approximately 70% of individuals who have their first stroke or heart attack are coincidentally found to have HTN
- HTN management is expensive, costing nearly $49 billion annually in the U.S.
- HTN is defined as having an average blood pressure greater than or equal to 130/80
  - Untreated HTN is particularly prevalent in adults 18-44 years of age, surpassing the prevalence of untreated HTN in adults greater than 45 years of age by nearly 17%
- An outpatient clinic affiliated with a large Midwestern academic medical center identified the need for a lifestyle modification program to address untreated HTN in its young adult population

**Purpose**

This quality improvement project was a pilot test of a 3-month, nurse-led HTN lifestyle education program for adults 18 to 44 years of age with untreated HTN to improve blood pressure and cardiovascular health

**Framework**

Lewin’s Change Model

- Problem recognition through data collection and analysis
- Acceptance of change and developing a new way of thinking
- Reinforcing and stabilizing interventions after change

**Methods**

**Design**

- 3 month pretest posttest design

**Setting**

- Outpatient suburban primary care clinic (18 primary care providers and >1,000 patients) affiliated with a large Midwestern academic medical center

**Sample**

- Inclusion criteria: 18-44 years old, without a past medical history of coronary artery disease or diabetes, newly diagnosed with HTN, and not prescribed antihypertensive medication
- Recruitment: nurse in-person with prospective participants after their clinic appointments to assess eligibility and participation interest

**HTN lifestyle education program**

- AHA Life’s Simple 7 health guide videos: Accessible via YouTube; addresses the management of blood pressure, glucose, cholesterol, weight, physical activity, diet, and smoking to provide individuals with steps to achieve better cardiovascular health
- Home-blood pressure monitoring: Education on, and distribution of, free home-blood pressure monitors
- Lifestyle motivational coaching: done every 2 weeks for 3 months

**Measures**

- **My Life Check Heart Health Score**: Accessible via the AHA website; based on 3 biomarker levels and 4 behavioral factors; indicates an individual’s cardiovascular health (1-10 score, with 10 representing excellent lifestyle choices)
  - Biomarker levels:
    1. Blood pressure (measured by the project director with a standard monitor, per AHA blood pressure measurement guidelines)
    2. Glucose (non-fasting, per clinic chart)
    3. Cholesterol (non-fasting, per clinic chart)
  - Behavioral factors:
    1. Physical activity (per self-reported response to single item in the My Life Check tool)
    2. Diet (self-reported responses to 6 items in the My Life Check tool)
    3. Smoking status (self-reported response to 1 item in the My Life Check tool)
    4. Weight (measured by the project director using a standard clinic scale)
- **Blood pressure monitoring confidence** (measured by a 4-point Likert scale [Strongly Disagree to Strongly Agree])
- **Blood pressure (BP)**

**Results**

- **Demographics (n=28)**
  - Age, M (SD): 38 ± 3.2
  - Gender, n (%):
    - Male: 19 (68)
    - Female: 9 (32)
  - Ethnicity, n (%):
    - African American: 14 (50)
    - White, non-Hispanic: 7 (25)
    - Hispanic: 7 (25)
    - Other: 0 (0)

- **Health Metrics (n=28)**
  - Pre: M (SD)
  - Post: M (SD)
  - Percent Change
  - Systolic BP: 133 (5.3) 127 (6.6) -4.5 *
  - Diastolic BP: 82 (4.5) 77 (4.9) -6.0 *
  - My Life Check score: 4.8 (1.8) 6.2 (1.7) +29.0 *
  - * significant at p<0.05

**Changes in Blood Pressure for Adults Enrolled in a Hypertension Lifestyle Education Program**

- **My Life Check Heart Health Score of Adults Enrolled in a Hypertension Lifestyle Education Program**
  - Pre: 4.8
  - Post: 6.2

**Recommendations**

- Integrating a nurse-led HTN lifestyle education program combining evidence-based tools from the AHA and self-blood pressure monitoring can lead to improved blood pressure and cardiovascular health
- Future Research:
  - Conduct a 6-month follow up in order to evaluate for sustained improvement in heart health
  - Repeat the project with larger, more diverse samples in order to allow for generalization of findings
- Addressing untreated HTN in younger adults is important due to the long-term, life-threatening effects