The Effects of Mindfulness Program on Hypertension: A Guideline Approach

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Abstract

Hypertension (HTN) is the third leading cause of death in the world and a major public health issue worldwide. According to the Centers of Disease Control and Prevention, one in three US adults have hypertension and only half of this population have controlled hypertension. Hypertension increases the risk of cardiovascular disease, stroke, and overall mortality. Hypertension can be controlled through lifestyle modifications and medications. Mindfulness training intervention is a lifestyle change and a non-pharmacological approach to decreasing hypertension. The objective of this quality improvement project was to standardize medical providers approach in the delivery of mindfulness education for patients diagnosed with primary hypertension at the primary care clinic. The indirect aim was to decrease hypertension in patients receiving this evidence-based mindfulness training program. Pender's Health Promotion Model and Donabedian Model were utilized for this project. The Mindful Attention Awareness Scale (MAAS) was delivered to medical providers before and after training and showed improved awareness of mindfulness. These providers were then directed to utilize their training to teach patients mindfulness techniques. A paired t-test analysis was utilized to compare the patient's blood pressure reading values at the time of initial evaluation and again at a four-week interval. The project demonstrated s statistically significant decrease in both systolic and diastolic hypertension with the use of mindfulness techniques at a four-week interval. This project demonstrates that mindfulness training in primary care may be an effective tool in reducing blood pressure in patients with primary hypertension.

Problem and Background

Hypertension:

- Asymptomatic condition that impacts affected individual's life quality
- Globally, 1 in 5 adults have HTN with complications
- Major risk factor of global cardiovascular disease morbidity and mortality
- Rising cost of HTN associated hospitalizations
- Approximately 9.4 million deaths annually worldwide
- Leading preventable risk factor for cardiovascular disease & deaths
- Goal management: decrease mortality & inhibit HTN-related disease
- Common treatment: pharmacological & non-pharmacological approaches
- Evidence show non-pharmacological approach such as mindfulness intervention lowers HTN

Purpose Statement

- The purpose of the project is to reduce high blood pressure in hypertensive patients by implementing an evidence-based mindfulness training program educational guideline at the project site. A mindfulness training program is a healthy lifestyle modification, which has limited adverse effects. Mindfulness training is a non-pharmacological approach to improve health outcomes. In addition, mindfulness training is a cost-effective method for use in patients with hypertension.

Project Objectives

- Develop an evidence-based mindfulness educational guideline tool to be implemented in primary care clinic
- Improve providers mindfulness experience by providing a mindfulness training that include a pre and post evaluation survey
- Evaluate effectiveness of mindfulness educational guideline tool on patient's blood pressure after a four-week implementation

Current Evidence

Literature review identifies mindfulness intervention:

- Promotes positive health outcomes
- Improves hypertension, anxiety, depression, high stress level, chronic pain
- Enhance quality of life of hypertensive patient population
- Decrease hypertension associated costs in healthcare industry
- Positive impact on health promotion, disease prevention, and chronic care management intervention
- Easily taught to children, adults, elderly, people with physical limitations, mental health issues, & chronic diseases
- Becoming popular due to easy access in group classes, online resources, & digital media

Theoretical Frameworks

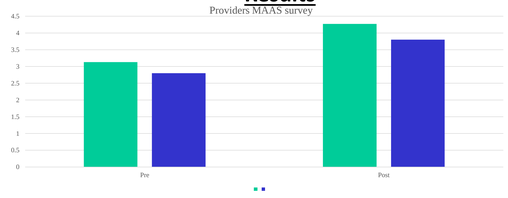
- Utilized Pender's Health Promotion Model (HPM) to assist participants prevent illness through healthy behaviors and choices.
- HPM promotes healthy lifestyles.
- Healthy promoting behavior such as mindfulness creates new healthy behaviors and positive health outcome.
- Pender believed participants can do self-care to enhance optimal and overall health.

- Also utilized Donabedian Model to guide the implementation process of QI project.
- Three essential elements: structure-process-outcomes identified as quality assessment guidelines.
- Model was utilized as measurement of outcome for patient's health promotion and disease prevention.

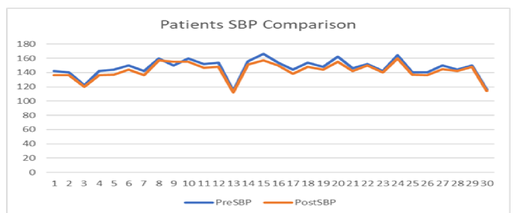
Project Design & Method

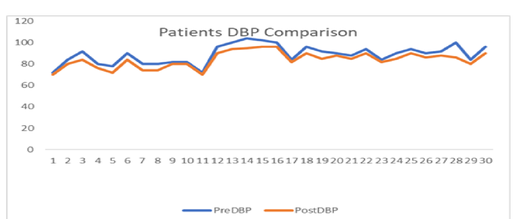
- Quality improvement (QI) project's goal: Enhance providers mindfulness awareness & reduce high blood pressure in patients with primary hypertension.
- QI project utilized mindfulness intervention, a non-pharmacological approach & evidence-based guideline tool.
- Convenient sample of medical providers completed a pre and post Mindful Attention Awareness Scale (MAAS) survey questionnaire & paired t-test analysis utilized to compare findings.
- EMR chart audits done for pre & post blood pressure readings on primary hypertensive patients during four-week implementation. Utilized paired t-tests analysis for comparison of pre & post blood pressure readings

Results



- Paired t-test analysis shows a p value of < .05, illustrating a significant improvement in providers awareness of mindfulness after mindfulness educational training.





- Paired t-tests analysis of patients de-identified pre & post blood pressure reading values show p value of < .05, illustrating a significant decrease in systolic and diastolic blood pressure reading values after four-week implementation of mindfulness educational guideline tool.
- The average decrease in systolic blood pressure was 4.50 and the average decrease in diastolic blood pressure was 4.93.
- Findings comparable to studies of Bell (2015), Ponte-Marquez et al. (2019), Solano-Lopez (2018), & Wright et al. (2018).

Limitations

The mindfulness educational brochure was disseminated for 6 weeks; however, only two weeks were available in gathering the post BP reading data since patients performed the mindfulness training at home for one-month before returning to the clinic. More data would have been collected if there was enough time for all participants to return to the clinic after their one-month at-home mindfulness training.
One hundred brochures were disseminated to the participants and only thirty participants returned after the one-month period.
There were only two providers that disseminated the mindfulness educational guideline brochure to their hypertensive patients which created limited data collection.

Implications for Nursing

- This QI project provides non-pharmacological approach & lifestyle modification mindfulness techniques to improve quality of life, cost effectiveness, easy to perform, without adverse effects (Wright et al., 2018)
- This short QI project did show a positive result in short period to hypertensive patient population.
- More longitudinal data collection may serve to provide more robust data in the future.

Conclusion

- QI project was successfully disseminated by providers to primary hypertensive patients for six-weeks at the primary care clinic.
- Results showed improved blood pressure measurements in patients with primary hypertension from pre to post evaluation.
- QI project illustrated that implementing evidence-based mindfulness intervention enhanced the providers mindfulness teaching capacities and improved short term patient blood pressure readings.
- More data collection is needed to determine the long term impact on provider practice regarding mindfulness training.
- More data collection is needed to determine the long term impact on patient blood pressure after starting mindfulness practice.

Reference

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