Does a hypertension guideline assist providers with perceived confidence with hypertension management in a retail setting?

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Abstract

- This study is evaluates the impact of webex hypertension (HTN) guideline training on providers' confidence in MinuteClinic's (MC) hypertension HTN management visits.
- Confidence scores of participant in the MC training/webex education sessions provided prior to the commencement of HTN chronic care services were obtained via survey and compared with those providers who did not participate in the education sessions.
- T-test analysis showed no statistically significant difference between the Trained group and the Non-Trained group.
- Factors enabling the lack of significant difference between the two groups and suggestions for further studies are discussed.

Introduction – Problem Description

- HTN affects 30% of US adults (approx. 75million Americans)
- Most common diagnosis at outpatient office visits
- Major risk factor for heart attack, heart failure, CKD, and stroke
- AKA “a silent killer” since no symptoms until target organs are damaged
- Defined as having blood pressure ≥ 140/90 or taking antihypertensives
- Contributing or primary cause of death for over 362,000 Americans in 2010
- Treatable with lifestyle modifications and pharmacology therapy
- Multiple factors cause HTN not to be controlled adequately
- Provider-related factors and provider’s knowledge, attitudes or behaviors have been found to be barriers to treatment adherence
- This study evaluates whether education on HTN guidelines adherence assists with provider confidence.

Introduction – Available knowledge

- Clinical practice guidelines (CPG) defined by IOM in 2011 as recommendation statements intended to optimize patient care
- Formed from the systematic review of evidence, CPGs are standard of care
- For HTN, existing CPGs include JNC-8 (released in 2014), and 2017 ACC/AHA guidelines
- MC's HTN guidelines is formed from the amalgamation of both guidelines
- Lifestyle modification is the first therapy; alone or in combination with pharmacology
- Lifestyle modification includes weight loss, DASH diets, smoking cessation, sodium reduction (to ≤2400mg/day), potassium supplementation (unless contraindicated), optimum glucose and lipids control, increased physical activity, and moderate alcohol consumption

Introduction-Available knowledge (contd.)

- For pharmacologic intervention, both guidelines differ slightly in their recommendations
- While both JNC-8 and 2017 ACC/AHA recommend initiation of therapy for all adults at B/P ≥140/90, 2017 ACC/AHA recommends therapy for high risk individuals at B/P ≥130/80, while JNC-8 does not.
- Both guidelines recommend initiation of therapy with a thiazide-type diuretic or a calcium-channel blockers alone or in combination for black patients.
- Both guidelines also included recommendations for therapy adjustment, follow up intervals, special populations, labs, etc.

Introduction-Available knowledge (contd.)

- ABPM considered the best method for diagnosing HTN
- HTN classified as essential and secondary – depending on causes
- Risk factors include modifiable a non-modifiable
- Non-modifiable risk factors include age, race, family history, and stress
- Risk factors for secondary HTN include OSA, kidney problems, adrenal gland problems, thyroid problems, congenital defects, medications, illegal drug and alcohol abuse
- Other factors affecting HTN include white coat syndrome, B/P measuring device, cuff size, body position, arm position, interval between measurement, difference between both arms, skill of measurer, silence, etc.

Introduction-Available knowledge (contd.)

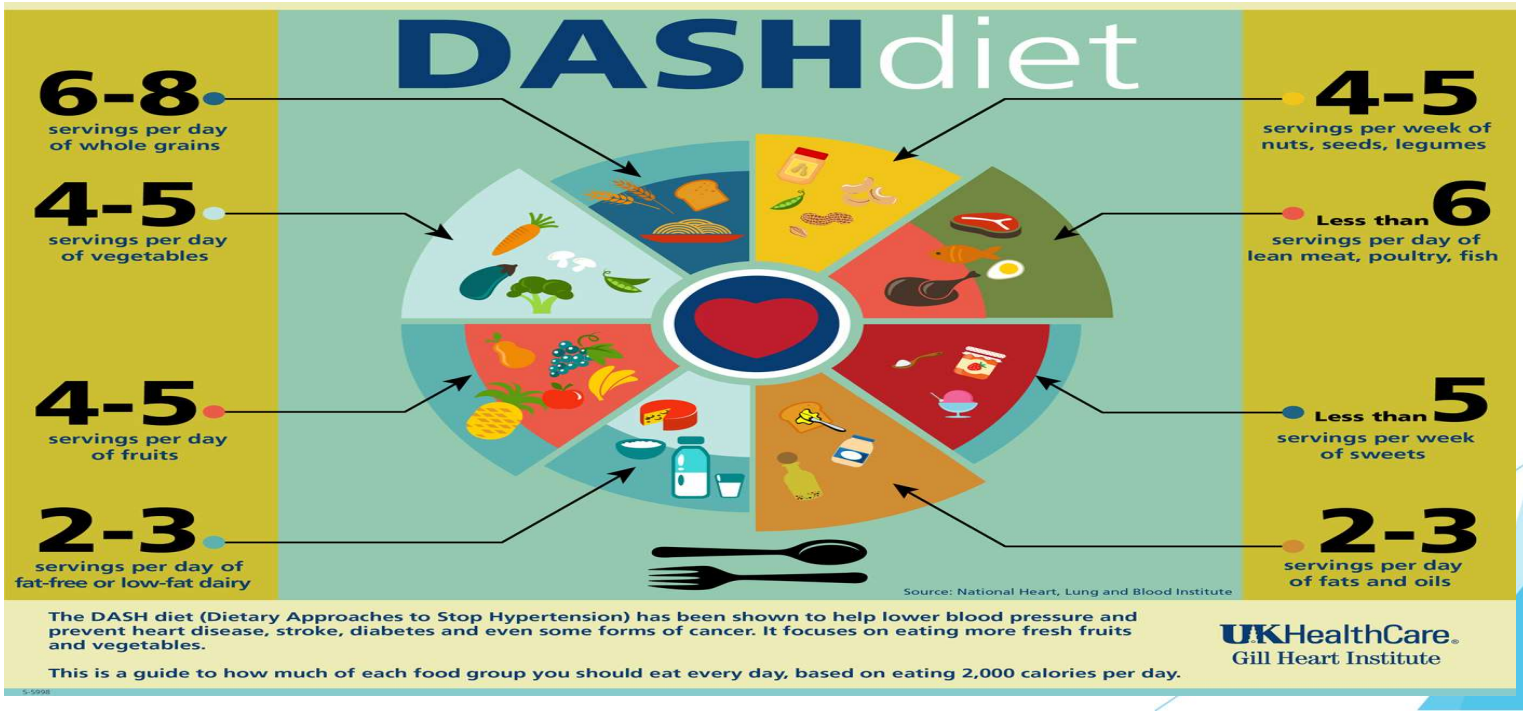
- Aims of HTN control is to reduce complications and slow target organ damage
- Target organ damage results in stroke, vision loss, heart failure, heart attack, kidney disease/failure, and sexual dysfunction
- Barriers to HTN control exist at the providers' level, patients' level, and health systems level
- Web-based education use for educating nurses is increasing and associated with participants showing improved knowledge, skill, changed beliefs and confidence
- This study uses MC HTN guideline, which is a proprietary information that the company does not want to share publicly

Introduction - Rationale

- Chronic Care Model (CCM) is the theoretical framework used in this study
- First published in Effective Clinical Practice in 1988 and edited by Ed Wagner
- Designed to improved health outcome of chronic conditions
- Focuses on optimizing team members knowledge, skills, education and expertise toward improving HTN outcome for the patients

Introduction – Specific Aims

- Aim is to see whether the adoption and education of providers increased confidence in HTN management or not



Methods - Context

- Participants were MC's providers working in retail settings across Pennsylvania, Maryland, Ohio, New Jersey, Virginia, Michigan, New York, Connecticut, Washington, DC, Indiana and Kentucky.
- Providers were recruited via voluntary participation using MC's email apparatus.
- Participants were gThis study is a DNP project designed using provider's response (to survey), MC's hypertension guideline (a proprietary document), and evidence-based education to ascertain provider's confidence and competence in hypertension management.
- iven questionnaires, and their responses were analyzed.
- A total of 1,290 providers, who are mostly nurse practitioners, comprising of both males and females aged 18 and above, were sent emails, 82 responded and participated in the study.
- An inclusion criterion is that all participants are providers (NPs mostly, PAs and MDs) working for MC.
- An exclusion criterion is non-MC providers.

Methods - Interventions

- The first intervention is to determine if the provider participant did or did not complete the hypertension services pre-roll out online education via webex by MC
- The second intervention is to determine if there is a difference in provider's perceived confidence after completion of the MC hypertension education program versus those who did not complete the MC hypertension training.

Methods – Study of the interventions

- Survey consists of the first polar question and 10 questions which are derived from two scales in the Self-Determination Theory
- Written permission obtained to use the Self-Determination Theory scales for academic purpose from the Center of Self-Determination Theory via email
- Perceived Competence Scales (PCS), consists of four questions
- Intrinsic motivation inventory (IMI) called Post-Experimental Intrinsic Motivation Inventory (Perceived Competence Task Evaluation Questionnaire [PCTEQ]), consists of the remaining six questions

Methods - Measures

- First question is to indicate whether provider participated in the webex session
- The next 10 questions was to rate the correct response on a scale of 1-7
- With “1” being not at all true and “7” being very true

Methods - Analysis

- Scores are calculated by averaging the responses on the 10 items questionnaire.
- The last question (#11) was a reverse score
- Mean, standard deviation, skewness, kurtosis and t-test analysis were used for the statistical analysis

Methods – Ethical considerations

- Edinboro University of Pennsylvania IRB approval obtained
- Participants were protected by HIPAA and its modifications of 2013
- Personal identifiers of participants not included
- Response to survey was synonymous with consent which was attached
- Participation totally voluntary
- No conflict of interest and no payments to participants

Results

- The latest version of SPSS, (Statistical Package for the Social Sciences) version 25.0, a software used for statistical analysis was used for this statistical analysis.
- The data analysis plan was conducted in two phases.
- First of all, study variables were presented using descriptive statistics, such as, means, standard deviation, and minimum/maximum values for continuous variables (Interval/Ratio level) and frequencies and percentages for categorical variables (Nominal/Ratio level).
- Next, a series of bivariate tests were used to produce inferential findings.
- T-test were used to identify if dependent variable scores (i.e., *Provider Confidence*) differed by study group in terms of the overall composite measure, and by individual scale items.

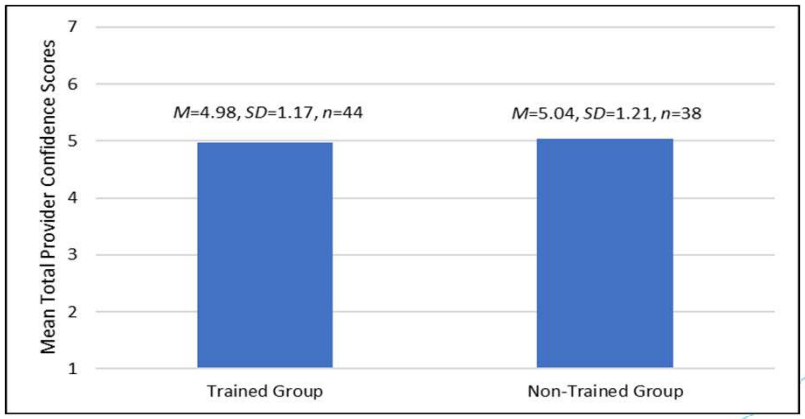
Results (contd.)

- T-test conducted with and without outlier scores revealed no difference in statistical significance
- Reliability analysis on the Total Provider Confidence Composite Scale indicated a very good internal consistency with a Cronbach alpha rating of 0.93
- Statistical power indicted this was a medium/large size effect
- Sample size of 82 in the study was sufficient statistical power
- Trained group was 44 (53.7%)and Non-Trained group was 38 (46.3%)
- Provider confidence measures did not have a statistical significant difference between the Trained group and the Non-Trained group (p=0.82)

Results (contd.)

- Total Provider Confidence Composite Scale Scores (10-Items)

Variable	n	M (SD)	t (df)	p
Trained Group	44	4.98 (1.17)	0.23 (80)	0.82
Non-Trained Group	38	5.04 (1.21)	0.23 (80)	0.82



Discussion - Summary

- Absence of a statistically significance difference between the trained group and non-trained group is a significant finding
- Relevant to the effectiveness of webex education done
- Existence of reasons as to why there was no significant difference

Discussion – Interpretation

- Individual provider's experience and training before MC's HTN services is started
- Generalization of the survey questions, instead of more specific questions
- Factors that can increase the quality of webex needs looked into
- A case for a bigger sample size

Discussion - Limitations

- This study did not measure the barriers to HTN evaluation by providers
- Providers' competence in HTN management not measured
- Previous experience of providers in managing HTN before webex
- Generalization of findings not advised until repeated in a different setting
- Relationship between provider's confidence and patient's outcome, not measured

Discussion - Conclusion

- Confidence scores of the two groups of providers analyzed did not yield any statistical significant difference
- Patient are more likely to equate confident provider with competent provider, which build trust and increase adherence to recommendations; however, the relationship between provider confidence and patient's outcome remains to be explored
- Repeat of study with a larger sample size, measuring the prior experience in HTN care, using specific survey questions, identifying and addressing possible barriers to webex education are needed to be addressed before generalization of findings.

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Does a hypertension guideline assist providers with perceived confidence with hypertension management in a retail setting?

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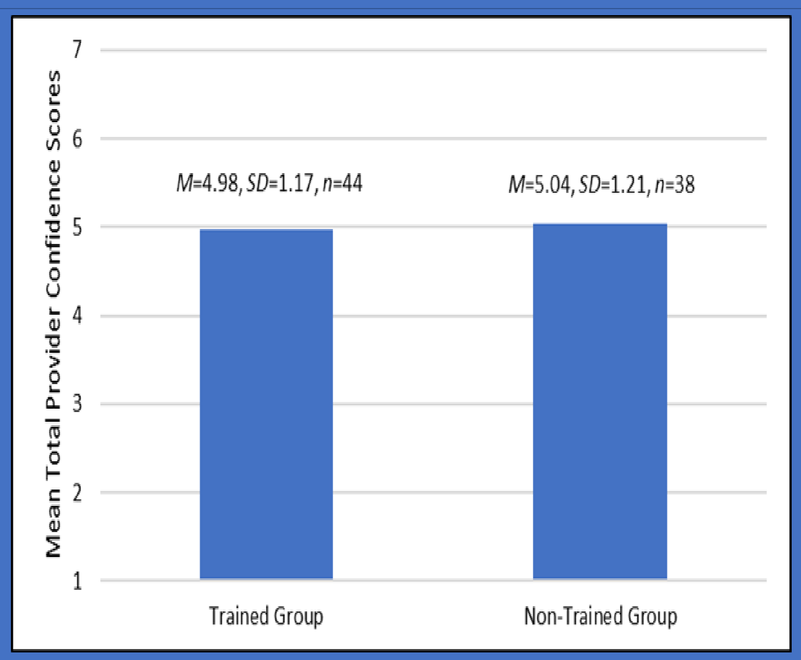
BACKGROUND

- 1 in 3 American adults has hypertension
- Only about half (54%) of sufferers are controlled
- Most commonly diagnosed condition in outpatient office
- Primary cause of death for over 362,000 Americans in 2010
- Called a “silent killer” since there are no symptoms and so sufferers see no need to control it
- Major risk factor for heart attack, heart failure, stroke, chronic kidney disease and other conditions
- Control slows down target organ damage



REVIEW OF LITERATURE

- The current clinical practice guideline in use is the JNC-8 Guideline of 2014
- Another relevant guideline is the ACC/AHA Guideline of 2017
- Both guidelines emphasis as the initial and concurrent therapy for hypertension control
- There are primary and secondary hypertension-with the later eliminating hypertension once corrected
- Risk factors include race, age, hereditary, unhealthy habits (e.g. smoking, alcohol, drugs)

CONCLUSION

- Confidence scores between the two groups of providers did have any statistical significant difference
- Factors contributing to the lack of significant difference between the two groups of providers include – effectiveness of webex education, the commonality of hypertension in the community and providers’ already acquired experience in managing hypertension visits before survey.
- Repeat of study with larger sample size needed before generalization

METHODS

- 1,290 MinuteClinic providers received survey by email
- 82 providers responded and completed the survey
- Providers are mostly NPs, Pas and MDs working in different states surrounding Pennsylvania
- First question was whether they attended the webex sessions
- Next 10 questions were derived from the two scales in the Self-Determination Theory
- The 10 questions recorded the confidence of providers on a 1 to 7 scale with “1” being not at all true and “7” being very true

RESULTS

- t-test were used to identify if dependent variable scores (i.e., Provider Confidence) differed in the two study groups
- Trained group was 44 (53.7%) and Non-Trained group was 38 (46.3%)
- Statistical power of medium/large size effect and Cronbach alfa of 0.93
- Provider confidence measures did not have a statistically significant difference between the Trained group and Non-Trained group (p=0.82)