Implementation a Hypertension Self-Management Program

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Introduction/Background

Uncontrolled hypertension (HTN) is a significant risk factor for deadly cardiovascular diseases such as a transient ischemic attack, congestive heart failure, advanced kidney damage, and peripheral vascular disease. [5]

Increased Mortality	More than **500,000 people died from HTN** in 2019 [1]
Increased Health Care Cost	HTN increases hospitalization rates **Costing the US healthcare system** around **$131 million annually** [1]
High Rate of Uncontrolled HTN	At a private internal medicine outpatient clinic in Texas, approximately 30% of HTN patients have uncontrolled BP, similar the statewide averages [2]

Purpose/Aims

The purpose of this quality improvement project was to determine whether adopting a **hypertension self-management program** would enhance **knowledge of HTN**, **self-efficacy, and blood pressure** in adult patients aged 18 and older with HTN relative to current practice.

- ❑ Aim 1 - Improve knowledge of HTN by 10%
- ❑ Aim 2 - Improve self-efficacy by 10%
- ❑ Aim 3 - Decrease SBP by 10 mmHg and DBP by 5 mmHg

Methods

Design: a pre- and post-test
Setting: a private internal medicine outpatient clinic in Texas
Sample: ages 18 and older diagnosed with HTN
Requirement: the internet, electronic devices, and a BP device

| Measurements	Intervention
➢ The Hypertension Knowledge Level Scale (HK-LS) [4] ➢ The General Self-Efficacy (GSE) Scale [8] ➢ Self-Measured BP	We-Based HTN Self-Management Program [3, 5, 6, 9]

Sample Characteristics

| Baseline characteristic	Sample (N = 28)				
Age	N	%	**Education**		
35-44 years	4	14.3%	High School Graduate	2	7.1%
45 -54 years	13	46.4%	Some College	3	10.7%
55 -64 years	4	14.3%	4-year degree	13	46.4%
65 -74 years	4	14.3%	Graduate	10	35.7%
75 - 84 years	2	7.1%			
> 85	1	3.6%	**Employment**		
Gender			Full Time	22	78.6%
Male	11	39.3%	Unemployed	2	7.1%
Female	17	60.7%	Retired	4	14.3%
Race			**Insurance**		
White	10	35.7%	Medicare/Tricare	5	17.9%
Black	6	21.4%	Commercial Insurance	15	53.6%
Asian	10	35.7%	Others	8	28.6%
Hispanic	1	3.6%	**Smoking Status**		
			Non-Smoker	24	85.7%
Others	1	3.6%	Smoker	2	7.1%
			Former Smoker	2	7.1%

Results

Only pre- and post-implementation records were included (*N* = 22)

❑Aim 1
HTN Knowledge level:
Paired sample t-test
8.3% improved
**Statistically significant**
(95% CI [0.66-2.98], p=0.02)

MEAN OF HYPERTENSION KNOWLEDGE LEVEL

18.73 → 20.55
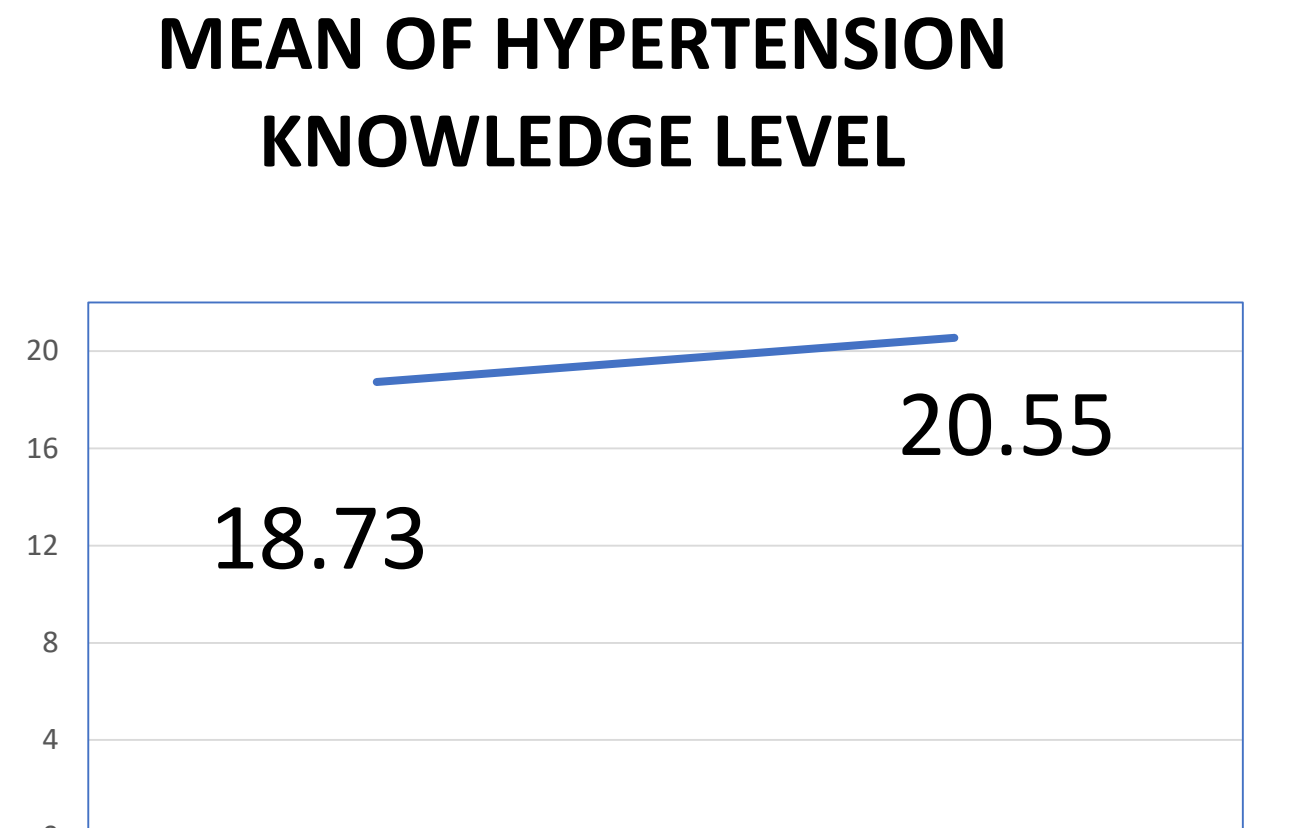
❑Aim 2
Self-Efficacy:
Paired sample t-test
3.7% improved
No statistically significant
(95% CI [-0.842-3.75], p=0.101)

MEAN OF SELF-EFFICACY

30.3 → 31.7
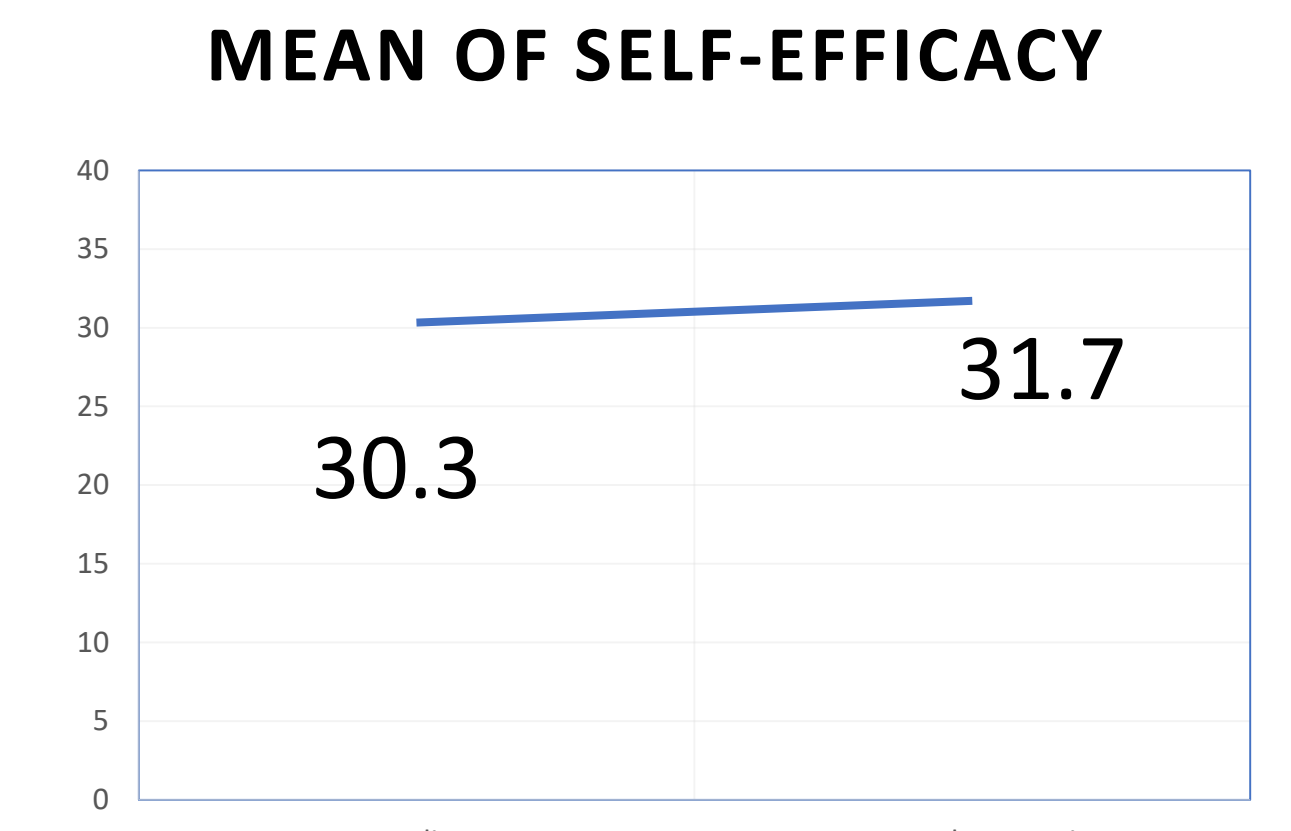
Results

❑Aim 3
-Systolic BP: Paired sample t-test; 3.95 mmHg improved
(95% CI [-10.56-2.65], p=0.11)
-Diastolic BP: Paired sample t-test; 0.87 mmHg improved
(95% CI [-6.66-4.94], p=0.38)   **No statistically significant**

MEAN OF SBP
130.7 → 126.7

MEAN of DBP
80.7 → 79.9
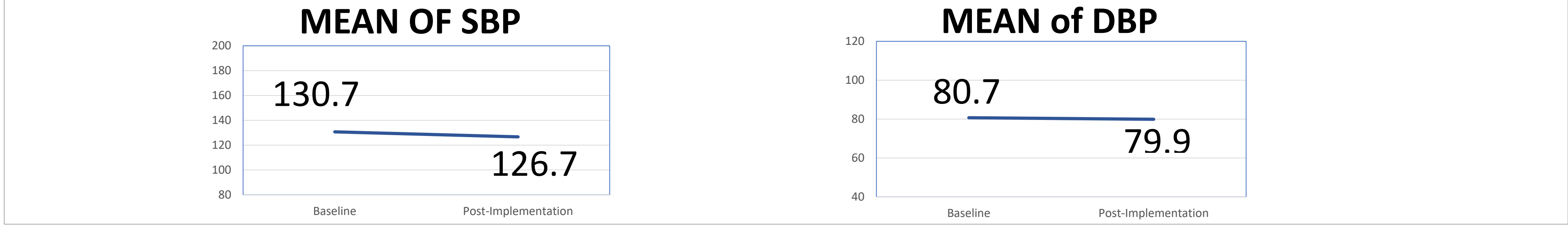
Strength/Limitations

- ❑ Convenience of a web-based intervention
- ❑ The intervention period was insufficient
- ❑ Inefficient communication and feedback
- ❑ Inability to track participant progress
- ❑ Small sample

Conclusions

- ❑ This intervention significantly increased HTN knowledge levels and lowered BPs, although it had no effect on self-efficacy levels.
- ❑ Overall, this web-based HTN self-management program was clinically beneficial for managing HTN in patients at the project site.
- ❑ Diverse outpatient settings should consider adopting this educational program to control HTN. However, future studies are needed to assess the generalizability of these findings and the intervention's applicability in other healthcare contexts.

References

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