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

More than $500,000 people died from HTN in 2019. 1

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

- The Hypertension Knowledge Level Scale (HK-LS) 4
- The General Self-Efficacy (GSE) Scale 8
- Self-Measured BP

Intervention

We-Based HTN Self-Management Program 3, 5, 6, 9

Sample Characteristics

<table>
<thead>
<tr>
<th>Baseline characteristic</th>
<th>Sample (N = 28)</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35-44 years</td>
<td>4 (14.3%)</td>
<td>High School Graduate</td>
</tr>
<tr>
<td>45-54 years</td>
<td>13 (46.4%)</td>
<td>Some College</td>
</tr>
<tr>
<td>55-64 years</td>
<td>4 (14.3%)</td>
<td>4-year degree</td>
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<tr>
<td>65-74 years</td>
<td>4 (14.3%)</td>
<td>Graduate</td>
</tr>
<tr>
<td>&gt; 75 years</td>
<td>2 (7.1%)</td>
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</tr>
<tr>
<td>Gender</td>
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<td></td>
</tr>
<tr>
<td>Male</td>
<td>11 (39.3%)</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>17 (60.7%)</td>
<td></td>
</tr>
<tr>
<td>Race</td>
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</tr>
<tr>
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</tr>
<tr>
<td>Black</td>
<td>6 (21.4%)</td>
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<tr>
<td>Asian</td>
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</tr>
<tr>
<td>Hispanic</td>
<td>1 (3.6%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
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<tr>
<td>Smoking Status</td>
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</tr>
<tr>
<td>Non-Smoker</td>
<td>24 (85.7%)</td>
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<td>Smoker</td>
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<tr>
<td>Former Smoker</td>
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</tr>
<tr>
<td>Education</td>
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<tr>
<td>High School Graduate</td>
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<td>Graduate</td>
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<td></td>
</tr>
</tbody>
</table>

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)

**Aim 2**

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

**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 [-6.64-4.94], p=0.38)

No statistically significant

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