Can Stories Improve Hypertension Management?  
A randomized control trial

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Our STORIES Team

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Background

- African-Americans have higher rates of hypertension and uncontrolled hypertension compared to whites
- Educational behavioral interventions have had limited success in controlling blood pressure.
- African-American oral traditions make stories central to communication
- Narrative communication may be an important intervention strategy
  - Break down cognitive resistance through transportation and identification with stories
- Our prior study showed a significant effect of stories on BP outcomes in a single site, with an attention control
Hypothesis

Compared with an education-only control,
A Stories-plus-education intervention will result in lower blood pressure at six-months
Methods

• Design: patient-level randomization, randomization stratified by site

• Participants:
  • 620 African-American patients uncontrolled BP
    • 3 US Department of Veterans Affairs Medical Centers

• Control
  ➢ DVD with didactic information about controlling BP

• Intervention
  ➢ Didactic information PLUS
  ➢ African-American patients telling their success stories in controlling blood pressure
Methods

Data collection

• Surveys at baseline, immediately post-viewing of DVDs, and 6 month follow-up
• Blood pressure – baseline and 6-month follow-up
• Analysis
  • Linear regression with dependent variable follow-up blood pressure, independent variable groups assignment
  • Adjusted for baseline blood pressure and site

Participant Characteristics

- 91% Male
- 91% >50 years old
- 47% Diabetes
- 92% High school graduate or beyond
- 53% earned < $20,000/ yr.
- 22% unstably housed
- 35% did not think their BP was under control
- 25% had inadequate health literacy
- No significant differences between intervention and control groups
Results:
Transportation

<table>
<thead>
<tr>
<th>Transportation Scale</th>
<th>I</th>
<th>C</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Mean (SD)</td>
<td></td>
</tr>
<tr>
<td>The DVD affected me emotionally. **</td>
<td>4.3 (2.3)</td>
<td>3.2 (2.2)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>The events in the DVD are relevant to my everyday life.</td>
<td>6.1 (1.6)</td>
<td>6.3 (1.4)</td>
<td>0.0782</td>
</tr>
<tr>
<td>I was mentally involved in the DVD while watching it.</td>
<td>6.6 (0.9)</td>
<td>6.5 (1.3)</td>
<td>0.1041</td>
</tr>
<tr>
<td>While I was watching the DVD, activity going on in the room around me was on my mind.</td>
<td>1.5 (1.5)</td>
<td>1.4 (1.3)</td>
<td>0.2034</td>
</tr>
<tr>
<td>I found my mind wandering while watching the DVD.</td>
<td>1.7 (1.5)</td>
<td>1.6 (1.5)</td>
<td>0.3487</td>
</tr>
</tbody>
</table>
Difference in BP (I vs. C) at six-months
## Main Outcomes  N= 526

<table>
<thead>
<tr>
<th>All sites</th>
<th>BASELINE BLOOD PRESSURE</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(SD)</td>
</tr>
<tr>
<td>ALL</td>
<td>SBP/DBP mean</td>
<td>(18.1, 13.1)</td>
</tr>
<tr>
<td>Control</td>
<td>139.0/81.0</td>
<td>(17.4/11.9)</td>
</tr>
<tr>
<td>Intervention</td>
<td>137.8/80.2</td>
<td></td>
</tr>
<tr>
<td>I/C Difference</td>
<td>-1.2/-0.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ttest p =0.4/0.5</td>
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# Main Outcomes  N= 526

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<th>FOLLOW-UP BLOOD PRESSURE</th>
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</thead>
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<tr>
<td><strong>Control</strong></td>
<td>139.0/81.0 (18.1, 13.1)</td>
<td>141.2/81.9 (17.8, 13.1)</td>
</tr>
<tr>
<td><strong>Intervention</strong></td>
<td>137.8/80.2 (17.4, 11.9)</td>
<td>137.9/80.1 (18.4, 13.0)</td>
</tr>
<tr>
<td><strong>I/C Difference</strong></td>
<td>-1.2/-0.8</td>
<td>-3.3/-1.8</td>
</tr>
<tr>
<td><strong>ttest p</strong></td>
<td>0.4/0.5</td>
<td>0.04/0.11</td>
</tr>
</tbody>
</table>
Conclusions

• Patients who viewed patient stories reported:
  • Significantly higher emotional engagement
  • The stories DVD resulted in a difference in blood pressure at follow-up, comparing intervention versus control
Discussion

• Changing behaviors to improve HTN control can be difficult, and didactic education isn’t often effective
• Videotaped patient stories can be an effective intervention to improve on patients’ intentions to change behavior
  • Effect may be through emotional engagement
• DVDs of patients’ stories may tap into effect of peer interventions, albeit at lower intensity and cost
• Behavioral intentions associated with clinical outcomes in prior research
  • Recent preliminary analyses of the STORIES intervention on longer term outcomes are promising
Stories
Didactic
Baseline
Learning
Engagement
Patient Factors
Behavioral Intents
Talk to MD
Rx Mgmt. Adherence, Diet + Activity
Self-Efficacy
Follow-up
Health System and Community Factors
BP
## Main Outcomes  N= 526

<table>
<thead>
<tr>
<th></th>
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<th>FOLLOW-UP BLOOD PRESSURE</th>
<th>Change F/u (baseline-followup)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All sites</strong></td>
<td><strong>SBP/DBP mean (SD)</strong></td>
<td><strong>SBP/DBP mean (SD)</strong></td>
<td><strong>Mean (sd)</strong></td>
</tr>
<tr>
<td><strong>Control</strong></td>
<td>139.0/81.0 (18.1, 13.1)</td>
<td>141.2/81.9 (17.8, 13.1)</td>
<td>+2.2 (19.8)/+0.9 (12.9)</td>
</tr>
<tr>
<td><strong>Intervention</strong></td>
<td>137.8/80.2 (17.4, 11.9)</td>
<td>137.9/80.1 (18.4, 13.0)</td>
<td>+0.1 (19.2)/-0.1 (10.3)</td>
</tr>
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<td><strong>I/C Difference</strong></td>
<td>-1.2/-0.8</td>
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**ttest p =** 0.4/0.5 0.04/0.11 0.2/0.3