Inside the Black Box: Deconstructing Social and Peer Support

How Peer Support Improved Physical Activity Despite Pain

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Disclosures

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Background

- Chronic pain: up to 70% of individuals living with diabetes
- Chronic pain associated with depression, stress
- Many pain medications: poorly suited for diabetes
- Cognitive behavioral therapy:
  - Nonmedical approach
  - Works in several chronic pain conditions (osteoarthritis, irritable bowel, fibromyalgia)
Background

- Alabama Black Belt:
  - Poor
  - Mostly African Americans
  - Rural
  - Few medical resources – especially mental health
  - Peer coaching program

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- Pakistani Lady Health Worker Thinking Healthy program
  - RCT of cognitive behavior training to prevent depression
  - 50% reduction in post-partum depression

Community Health Workers (CHW)

- Peer support effective in improving health behaviors in patients with chronic conditions\(^1\)-\(^4\)

- CHWs:
  - Link community, health care system
  - Understand challenges of day-to-day management of diabetes
  - Develop realistic, feasible strategies; provide social and emotional support

Study Hypothesis and Design

- **Hypothesis**: A telephone-delivered CBT-based program delivered by CHW can improve pain, physical functioning, and quality of life in individuals with diabetes and chronic pain.
  - Here: physical activity despite pain
- **Study Design**: Community-based, cluster randomized controlled pragmatic trial

![Diagram of Living Healthy Program and General Health Program]

- **Living Healthy Program**
  - CHW via telephone
  - 8 sessions
  - ~30 minutes
  - diabetes basics
  - stress reduction
  - healthy eating
  - physical activity
  - effective interactions with primary care provider
  - social support

- **General Health Program**
  - CHW via telephone
  - 8 sessions
  - ~30 minutes
  - dementia
  - fall prevention
  - breast cancer
  - colorectal cancer
  - oral care
  - eye care
  - foot care
  - driving safety

Duration: 12 weeks
• **Recruitment Strategies**
  • Chain referral sampling technique\(^1\)
  • Community coordinators/CHW presented study to community
  • Announcements on local radio stations and newspapers
  • Posters in doctors offices, churches, libraries, stores, community meeting locations

• Individuals with diabetes, chronic pain, under care of primary care doctor

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Program Description

- Adaptation of the *Thinking Healthy Program* CBT-based intervention delivered by CHWs\(^1\)
- Activities designed to:
  - Develop adaptive coping skills
  - Facilitate cognitive reframing
  - Provide social support
- Behavioral goals around stress reduction, healthy eating, physical activity, social support, positive interactions with MD
  - Emphasis on developing alternative exercise strategies for days experiencing pain
  - Experienced CHW, 3-month training
  - Motivational interviewing

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Intervention Format

- Participant Watches Session Video
- Participant and CHW Complete Phone Session
- Daily Monitoring and Homework

Physical Activity and Your Health

**Participant Activity Book**

**CHW Manual**
Study Outcomes

- **Depressive symptoms:**
  - Centers for Epidemiology Studies Depression (CES-D)
  - 11 items, score 0-22, Cronbach’s alpha 0.81
  - ≥9 score associated with moderate or greater depression

- **Stress:**
  - Cohen’s Perceived Stress scale
  - 10 items, score 0-40, Cronbach’s alpha 0.78
## Results: Participant Characteristics

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<th>ALL N=193</th>
<th>Intervention n=98</th>
<th>Control n=95</th>
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<tbody>
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<td>60.1 ± 9.9</td>
<td>58.3 ± 10.5</td>
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<td>Female, %</td>
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<td>Education, %</td>
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<tr>
<td>&gt; HS</td>
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<td>Total Annual Income, %</td>
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<td>18.2</td>
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<td>Not reported</td>
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<td>Insulin use, %</td>
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<td>50.0</td>
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</table>
Results: Depressive symptoms

Proportion at risk for moderate or greater depression (CES-D ≥ 9)

Control in ORANGE, intervention in BLUE
Results: Stress

Cohen’s Perceived Stress scores at baseline and follow-up (range 0-40, higher = more stress)

Control in ORANGE, intervention in BLUE

Change difference
p<0.01
Results: Use of stress reducing techniques assessed at follow-up

- Deep Breathing: Control in ORANGE, intervention in BLUE
- Exercise to Reduce Stress: Control in ORANGE, intervention in BLUE

*p < 0.0001*
Limitations

- Self-reported measures, no clinical diagnosis
- Included mostly African American women from one geographic area
- Short duration of intervention
Conclusions

- Peer-delivered telephonic CBT dramatically improved depressive symptoms and reduced stress in diabetic individuals with chronic pain living in this under resourced community.
- Findings were attributable in part to greater use of stress reducing techniques (deep breathing, exercise).
- No medications used to achieve these results.
Living Healthy Study Team

- Monika Safford, Susan Andreae, Laurence Bradley, Andrea Cherrington, Michelle Martin, Joshua Richman, Adrianna Addison, Susan Andreae, Lynn Andreae, Debra Clark, Ethel Johnson, Marquita Lewis, Sheree Moultry, Ashruta Patel, LaKendra Piper, Ebony Townsend, Allyson Varley

- Community health workers: Brenda Autry, Allison Davis, Lizzie Ingram, Maggie Jolly, Gail Kania, Angela Martin, Ada Nettles, Aundretta Montgomery, Anita Powell, Alisha Smith