Differentiating the Role of Social Support on Diabetes Outcomes among a Cross-Site Sample of Adults

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In the context of a peer support program for individuals with diabetes, we examined how two types of social support would be related to depressive symptoms, diabetes distress, and A1c, and how these outcomes would be related to one another.
<table>
<thead>
<tr>
<th>Nondirective support</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Accepting of recipients’ feelings and cooperative with their plans</td>
</tr>
<tr>
<td>• Often associated with positive coping, improved health behaviors, better disease management</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Directive support</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Prescribes “correct” choices and feelings</td>
</tr>
<tr>
<td>• Often not associated with beneficial outcomes</td>
</tr>
<tr>
<td>• EXCEPT in acute situations or when recipient lacks skills to handle a situation</td>
</tr>
</tbody>
</table>
### Previous Studies

<table>
<thead>
<tr>
<th>Stewart et al. (2012)</th>
<th>Gabriele et al. (2011)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Community-based sample of overweight / obese women (n=304)</strong></td>
<td><strong>RCT manipulated nondirective and directive support for a sample of overweight adults.</strong></td>
</tr>
<tr>
<td><strong>Nondirective support associated with greater physical activity, fruit and vegetable intake, lower alcohol use.</strong></td>
<td><strong>Directive support was associated with more weight loss than nondirective support.</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Individuals needed clear, specific advice and skills.</strong></td>
</tr>
</tbody>
</table>


Peer Support Interventions

4 Key Functions

- Assistance in Daily Management
- Social/Emotional Support
- Linkage to Clinical and Community Resources
- Ongoing Support

Interventions

- Eight sites: diabetes management
- 2009 - 2013
- Inclusion criteria
  - Adults 18+ years old
  - A1c value ≥ 7.5%
- Common measures collected at baseline and follow-up (range of 6-12 months)
Analytic sample

5 sites, n = 314

- Rural Alabama: African Americans
- Ann Arbor / Ypsilanti Michigan & Southwestern Detroit: Latinos and African Americans, independently
- San Francisco, CA: Latinos, African Americans, Caucasians, Asians
- Imperial County, CA: Mexican and Mexican Americans
# Nondirective / Directive Scale

As asked about support received by peer supporters

<table>
<thead>
<tr>
<th>Scale Items</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Show interest in how you are doing</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2. Push you to get going on things</td>
<td></td>
</tr>
<tr>
<td><strong>3. Cooperate with you to get things done</strong></td>
<td></td>
</tr>
<tr>
<td>4. Take charge of problems</td>
<td></td>
</tr>
<tr>
<td>5. Point out harmful or foolish ways you view things</td>
<td></td>
</tr>
<tr>
<td>6. Make it easy for you to talk about anything you think is important</td>
<td></td>
</tr>
<tr>
<td>7. Tell you what to do</td>
<td></td>
</tr>
<tr>
<td><strong>8. Offer you a range of suggestions</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Bold = nondirective items

A “1” means that support is not at all typical and a “5” means it is very typical.
## Data Analysis

### Measures
- **Demographics:**
  - Age
  - Sex
  - Years of education
  - Years living with diabetes
  - Study site
  - Time since baseline
- **Clinical measures:**
  - Depressive symptoms (PHQ-8)
  - Diabetes distress (DDS-4)
  - A1c
- **Social support**
  - Nondirective, directive support

### Data Analysis
- **Descriptive statistics**
- **Bivariate correlations**
- **Psychometric properties**
  - Exploratory and confirmatory factor analysis
- **Structural Equation Modeling**
  - WLSMV
### Descriptive Results

5 sites, $n = 314$

<table>
<thead>
<tr>
<th>Personal characteristics</th>
<th>Mean (SD) / n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (years)</strong></td>
<td>58.24 (11.13)</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>211 (67.85)</td>
</tr>
<tr>
<td>Male</td>
<td>100 (32.15)</td>
</tr>
<tr>
<td><strong>Duration of diabetes (years)</strong></td>
<td>15.0 (14.5)</td>
</tr>
<tr>
<td><strong>Educational (years)</strong></td>
<td>11.67 (3.72)</td>
</tr>
<tr>
<td><strong>Site</strong></td>
<td></td>
</tr>
<tr>
<td>Imperial County, CA</td>
<td>63 (20.26)</td>
</tr>
<tr>
<td>San Francisco, CA</td>
<td>63 (20.26)</td>
</tr>
<tr>
<td>Alabama, Al</td>
<td>146 (46.95)</td>
</tr>
<tr>
<td>Ypsilanti, MI</td>
<td>12 (3.86)</td>
</tr>
<tr>
<td>Southwestern Detroit, MI</td>
<td>27 (8.68)</td>
</tr>
</tbody>
</table>
Measurement Model

Nondirective support

- Item 1: Show interest in how you are doing
- Item 2: Push you to get going on things
- Item 3: Cooperate with you to get things done
- Item 8: Make it easy for you to talk about anything that you think is important

Directive support

- Item 4: Offer a range of suggestions
- Item 7: Take charge of problems
- Item 5: Point out harmful or foolish ways you view things

$X^2 = 46.0$, $p<0.001$; $CFI = 0.994$, $TLI = 0.991$. RMSEA value (0.09; 95% CI: 0.06, 0.12)
<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
<th>Nondirective support</th>
<th>Directive support</th>
<th>Follow-up Depressive Symptoms</th>
<th>Follow-up Diabetes distress</th>
<th>Follow-up A1c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nondirective support</td>
<td>3.80 (1.24)</td>
<td>--</td>
<td>0.64***</td>
<td>-0.17**</td>
<td>-0.15**</td>
<td>-0.09</td>
</tr>
<tr>
<td>Directive support</td>
<td>3.01 (1.48)</td>
<td>--</td>
<td>-0.03</td>
<td>-0.02</td>
<td>-0.04</td>
<td></td>
</tr>
<tr>
<td>Follow-up Depressive Symptoms</td>
<td>5.69 (5.26)</td>
<td>--</td>
<td></td>
<td>0.58***</td>
<td></td>
<td>0.25***</td>
</tr>
<tr>
<td>Follow-up Diabetes distress</td>
<td>2.03 (1.16)</td>
<td>--</td>
<td></td>
<td></td>
<td>0.26***</td>
<td></td>
</tr>
<tr>
<td>Follow-up A1c</td>
<td>8.01 (1.98)</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < 0.05, ** p < 0.01, *** p < 0.001
Initial Tested Model

Depressive symptoms → Nondirective support → Directive support → Depressive symptoms

Diabetes distress → Nondirective support → Directive support → Diabetes distress

A1c → Nondirective support → Directive support → A1c

Baseline → Follow-up → Follow-up
Results from Initial Model

*CFI = 0.991, TLI = 0.984; RMSEA = 0.043 (95% CI: 0.030, 0.056); $X^2 = 144.8$, DF = 91, $p = 0.0003$
Modified Tested Model

- Nondirective support
  - Depressive symptoms
- Directive support
  - A1c
- Baseline
- Follow-up
- Follow-up
- Diabetes Distress
Results from Modified Model

*CFI = 0.998, TLI = 0.998; RMSEA = 0.016 (95% CI: 0.000, 0.034); $X^2 = 116.1$, DF = 107, $p = 0.26$
Discussion

• **Nondirective support** associated with *lower* reports of depressive symptoms and *lower* A1c values

• **Directive support** associated with *higher* reports of depressive symptoms and *higher* A1c values

• Nondirective support rated higher than directive support in each of the 5 sites
• Nondirective support associated with better outcomes than directive support
  • In line with previous research
  • Extends findings to support from peer supporters
  • Points to potential of nondirective support in management of complex chronic conditions

• Nondirective support rated higher than directive support
  • Nondirective support may be an important component of peer support programs
  • Shares commonalities with motivational interviewing
  • Some sites (not all) included nondirective support as a specific part of training for peer supporters
Conclusions

Strengths
- Diverse sample
- SEM to disentangle effects
- Baseline & follow-up data

Limitations
- Did not control for effects of peer supporters
- Some sites more represented than others
- Sensitivity analyses
- Some sites encouraged peer supporters to provide nondirective support

Contributions to the field
- Adds to body of literature on nuances of social and peer support

Future Research
- RCTs and manipulations of nondirective and directive support
- Physiologic measures of stress and coping
### Acknowledgements

#### Peers for Progress

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[www.peersforprogress.org](http://www.peersforprogress.org)

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#### Writing Team

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Thank you!

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