Peer Support for Rural Ugandan Adults with Type 2 Diabetes

Linda Baumann, PhD, RN, FAAN
Professor, School of Nursing
The University of Wisconsin-Madison
30 April, 2011
Society of Behavioral Medicine
Washington, DC
Acknowledgements

Peers for Progress Grant

Eli Lily Foundation

Frederick Nakwagala, MS, MD
Dept of Medicine, Mulago

Sr. Jospehine Ejang, RN, Diabetes Nurse Specialist
Mulago Hospital, Kampala Uganda

Betty Taitika Nankwanga, RN
Mityana District Hospital Diabetes Clinic
Agatha Nambuya, MD
Mulago

Dory Blobner, MS, RN, CDE
Madison, WI
My purpose today

Describe a peer support pilot intervention for adults with type 2 diabetes conducted in a low-resource setting in rural Uganda
Background of diabetes in Africa

- 4 – 7 % estimated prevalence in adults
- Late diagnosis
- High rates of neuropathy at diagnosis
- 60-80% of persons with diabetes are not diagnosed
- Few clinicians know how to manage diabetes
- Healthcare systems not designed for continuity of care
Cultural beliefs that impact diabetes care

- ‘Big is beautiful’
- Exercise
  - Not ladylike
  - Challenging in tropical climates
  - Can be life threatening in some environments
- Stigma of disease
  - Unmarriageable, unemployable
  - A reason for divorce
- Traditional medicine is first treatment
Environmental factors: Ugandan diet

- Food = carbohydrates
- Staple foods are matooke and posho
- “green vegetables for animals”
- “fruit is for children/when sick”
- Frying a common, economical method of cooking
- Meal patterns
- 7 am brkfst – tea, posho/millet
- 3pm lunch – matooke
- 10 pm dinner – posho/millet/potatoes
Goals of the Intervention

- To enhance social support & emotional well-being
- Engage participants in diabetes self-care behaviors
- Improve metabolic control (A1C)
- Foster linkages to healthcare providers
Measures

- Modified diabetes self-management and assessment tool (D-SMART) (AADE, 2000)
- AADE - 7
  - Healthy eating
  - Monitoring BG
  - Problem solving
  - Being active
  - Taking medication
  - Reducing risks
  - Healthy coping (emotional well-being)
- Perceptions of social support
Measures – 2

- Height & weight
- Blood pressure
- A1C (venipuncture)
- MTN phone network call logs
- Clinician notes of contact by participants
- Participant contact logs
- Post-intervention evaluation meeting
Intervention

- **Champions**
  - Received diabetes self-care education plus training in communication and support

- **Partners**
  - Received diabetes self-care education

- **Champions and Partners** were matched (age, gender) to interact at least weekly by phone or in person
Peer education
Peer Training

- Diabetes self-care AADE-7
- Communication skills to provide support
  - Asking open-ended questions
  - Active listening
  - Providing optimism and hope
  - Sharing feelings
  - Encouraging goal setting for changing behaviors step by step
Purpose of Peer Contacts

- Problem solve about daily tasks of diabetes self-care
- Provide social and emotional support in self-care
- Encourage partners to contact the diabetes clinic team about medical management issues
Recruitment & Retention

- Recruitment goal: 30 champions & 30 peers
  - Had to have type 2 diabetes; attend Mityana clinic
  - Champions had to read and speak English

- Pre-intervention
  - 19 champions
  - 27 peers

- Post-intervention 4 months later
  - 16 champions (84% retention)
  - 25 peers (93% retention)
### Participants

- Mean age 55 years (32 - 74)
- Diagnosed with diabetes an average of 6.4 years
- 67% female
- 54% family history of diabetes
- 57% primary level education*
- 44% farming occupation

*P < .001 difference between champions (16%) partners (85%)
Engagement

- 100% reported making peer contact
  - most often weekly
  - most contacts by phone using pre-paid airtime
- 71% contacted the clinic
- 90% reported contact increased
Local resources

- Worked with a team of 2 nurses, medical officer, lab tech trained to deliver diabetes care
- 71% of patients reported difficulty accessing meds r/t cost, availability
- Physical space at the district hospital was inadequate
Was the intervention effective? In changing…

- Diabetes self-care behaviors
- Social support & emotional well-being
- Metabolic control
- Linkages to care
# Diabetes self-care behaviors (N=41)

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy Eating(5)*</td>
<td>2.3</td>
<td>4.5</td>
</tr>
<tr>
<td>Being Active</td>
<td>4.3</td>
<td>4.5</td>
</tr>
<tr>
<td>Missing Medication</td>
<td>1.9</td>
<td>1.6</td>
</tr>
</tbody>
</table>

*p <.001, 1-5 rating scale
# Social support & well-being (N = 41)

<table>
<thead>
<tr>
<th></th>
<th>Means Pre</th>
<th>Means Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional well-being (5)</td>
<td>2.6</td>
<td>2.7</td>
</tr>
<tr>
<td>Barriers (14)</td>
<td>2.0</td>
<td>2.1</td>
</tr>
<tr>
<td>Confidence*</td>
<td>3.5</td>
<td>3.1</td>
</tr>
<tr>
<td>Helpfulness of Social Support*</td>
<td>3.4</td>
<td>3.0</td>
</tr>
</tbody>
</table>

* p < .05, 1-4 rating scales
Physiological Measures (N=41)

<table>
<thead>
<tr>
<th></th>
<th>Pre %</th>
<th>Post %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood pressure &gt;130/80*</td>
<td>80</td>
<td>56</td>
</tr>
<tr>
<td>BMI overweight or obese</td>
<td>61</td>
<td>56</td>
</tr>
<tr>
<td>Mean A1C (DCCT units)*</td>
<td>11.2</td>
<td>8.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*p &lt; .001 DBP,A1C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Linkages to care

- Encouraged to contact the clinic (71%)
- Phones reduced access barriers
- Perceived improved care
- Two diabetes club meetings held at the clinic during the intervention period
  - 98% attended
Building a porch addition for education and waiting area.
What was most helpful about the peer program?

- Received helpful advice
- Received encouragement
- Learned a lot about diabetes
- Could talk to someone about diabetes
- Liked written information about diabetes
What difficulties did participants encounter?

<table>
<thead>
<tr>
<th>Difficulty</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did not talk often enough</td>
<td>56%</td>
</tr>
<tr>
<td>Could not contact my partner</td>
<td>44%</td>
</tr>
<tr>
<td>My partner told me what to do</td>
<td>31%</td>
</tr>
<tr>
<td>My partner was not motivated to make any changes</td>
<td>25%</td>
</tr>
</tbody>
</table>
What was not anticipated?

• Lower post-ratings of
  • social support
  • Confidence in managing diabetes

• No change in
  • Coping
  • Confidence in managing diabetes

• A significant change in diastolic blood pressure
What did we learn?

- Peer support was reciprocal, e.g. both provided and received support

- A cell phone network is available technology that needs to become part of the healthcare system to enhance management of chronic disease
Unanswered questions about peer support

- Were changes in A1C and DBP related to better medication adherence?
  - Supported by qualitative data, not quantitative measure
  - Both outcomes impacted by medication
  - A1C change (2.8% decrease) difficult to attribute to diet alone
  - Involuntary changes in diet related to food shortages
More unanswered questions

- **Sustainability?**
  - Partly achieved through improved resources
    - Physical facility, written education material
  - Continued communication with clinic nurse

- **Limitation of a one-time post-measure**
  - What are patterns of change in confidence or perceptions of support?