Diabetes Intervention and Employment: A Randomized Controlled Mixed Methods Study

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International Conference of Qualitative Inquiry
May 28, 2010
Urbana Illinois
Demonstration to Maintain Independence and Employment - Live healthy...Work well

1. National perspective
2. Mixed Methods approach & study design
3. Participant profile
4. Intervention component usage
5. Preliminary results and implications
6. Recommendations and next steps
# Demonstration to Maintain Independence and Employment (DMIE)

<table>
<thead>
<tr>
<th>Hawaii Diabetes</th>
<th>Kansas High Risk Pool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minnesota Mental Illness</td>
<td>Texas Mental Illness</td>
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National Evaluation
Mathematica Policy Research, Inc (MPR)
Overarching DMIE Research Question

Can a program of medical and other supports prevent or forestall loss of employment and independence due to a potentially disabling condition?

Goal: help those who are NOT YET disabled to stay working and stay off disability benefits.
Quantitative Hypotheses

There will be a difference in outcome measures between the intervention and control group in the following areas:

1) Improved health status
2) Continued employment
3) Maintain independence from SSI/SSDI
## Quantitative Measures

<table>
<thead>
<tr>
<th>Domains</th>
<th>Outcomes</th>
<th>Numerical Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>• Well being</td>
<td>• <em>Diabetes self-efficacy</em></td>
</tr>
<tr>
<td></td>
<td>• Functioning</td>
<td>• <em>Diabetes management</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• <em>Weight loss</em></td>
</tr>
<tr>
<td>Employment</td>
<td>• Hours worked</td>
<td>• <em>Effect of diabetes on work productivity</em></td>
</tr>
<tr>
<td></td>
<td>• Earnings</td>
<td>• <em>Diabetes related absences</em></td>
</tr>
<tr>
<td>Disability</td>
<td>• Government Support</td>
<td>• <em>Social Security Disability Insurance (SSDI)</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• <em>Medicaid, VR services, Section-8 housing</em></td>
</tr>
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Qualitative Research Question

What are the participant’s perceptions of the value, usefulness, and challenges of a person-centered program designed to improve health and employment.
Qualitative Data Collected & Analyzed

Exit interviews
Satisfaction Surveys
Focus Group

Participant Perceptions
Data Merging

• Quantitative and qualitative data strands collected and analyzed concurrently

• Each strand analyzed separately

• Results from the strands compared and merged (triangulation)
Study Design: Experimental

- **Enrollment (190)**
- **Baseline Data Collection**
- **Random Assignment**
- **Treatment Group (128)**
- **Control Group (62)**

Tracking:
- 12 mos
- 6 mos

Intervention:

Tracking:
- 18 mos
Intervention Components

Control Group received Usual Care, reimbursements for health assessments, and incentives for completion of evaluation surveys.
Participant Eligibility Criterion

- Diagnosed with Diabetes or HbA1c $\geq 6.5$
- Age 18 – 62
- On O`ahu - Hawaii
- Work minimum of 40 hours per month
- Not receiving SSI or SSDI
Participants: Ethnically Diverse

- Native Hawaiian / Pacific Islander /1: 35%
- Japanese: 18%
- Other Asian /2: 18%
- White: 17%
- Other /3: 12%

/1 NHPI: Full and Part
/2 Other Asian: Filipino, Chinese, Other Asians
/3 Other: Mixed (non-NHPI), Black, Other, AIAN.
Participants: Baseline

*Study sample was fairly healthy and well employed at baseline*

<table>
<thead>
<tr>
<th>Diabetes Type</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 2: 86%</td>
<td>Female: 63%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Years since diagnosis</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean: 8 yrs</td>
<td>Mean: 48 yrs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hemoglobin A1c</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean: 7.8%</td>
<td>Bachelor’s degree or higher: 50%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Body Mass Index (BMI)</th>
<th>2007 Annual Earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overweight or Obese: 86%</td>
<td>Mean: $44K</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Healthcare Coverage</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insured: 97%</td>
<td>Mean hrs worked - past mo: 38 hrs</td>
</tr>
</tbody>
</table>
**Participants: Diabetes Management**

*Most participants had good to moderate control of their diabetes*

**Baseline Diabetes Control:** HbA1c

- **In control** (< 7): 31%
- **Moderately controlled** (7 - 9): 48%
- **Poorly controlled** (> 9): 20%
Intervention: Service Usage

Life Coaching was the dominant intervention component accessed.

- Life Coaching Meetings: 1,214
- Pharmacist Counseling Meetings: 449
- YMCA Visits: 104
- Nutrition Counseling Meetings: 80
- Certified Diabetes Education Meetings: 17
Quantitative Outcomes

• Health

• Employment

• Disability
Results: HEALTH

Diabetes self efficacy and body mass index changes were significantly better in the treatment than the control group.

<table>
<thead>
<tr>
<th>Measure</th>
<th>ANCOVA p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes self-efficacy</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Body mass index</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>SF-12 (mental)</td>
<td>.14</td>
</tr>
<tr>
<td>HbA1c</td>
<td>.31</td>
</tr>
<tr>
<td>SF-12 (physical)</td>
<td>.43</td>
</tr>
<tr>
<td>Number of IADLs</td>
<td>.45</td>
</tr>
<tr>
<td>Number of ADL</td>
<td>.85</td>
</tr>
</tbody>
</table>
Diabetes Self-efficacy

DES-SF:  
- Control
- Treatment

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>6 Months</th>
<th>12 Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>3.80</td>
<td>3.92</td>
<td>3.84</td>
</tr>
<tr>
<td>Treatment</td>
<td>3.77</td>
<td>4.09</td>
<td>4.26</td>
</tr>
</tbody>
</table>

*p < .001

* Score on the University of Michigan Diabetes Empowerment Scale – Short Form (DES-SF)
**Body Mass Index**

- **Control**
  - Baseline: 34.26
  - 6 Months: 34.48
  - 12 Months: 34.10

- **Treatment**
  - Baseline: 32.29
  - 6 Months: 31.72
  - 12 Months: 31.25

*p < .001*
Results: DISABILITY & EMPLOYMENT

No significant differences between treatment and control groups.

<table>
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<th>Measure</th>
<th>ANCOVA p-value</th>
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<tr>
<td>Hours worked</td>
<td>.08</td>
</tr>
<tr>
<td>Effect diabetes has on work productivity</td>
<td>.70</td>
</tr>
<tr>
<td>Annual earnings</td>
<td>NA</td>
</tr>
<tr>
<td># of gvt pgms* participating in</td>
<td>.90</td>
</tr>
</tbody>
</table>

* Five programs tracked: Temporary Assistance to Needy Families, Food Stamps, Section 8 or other subsidized housing, Medicaid, Vocational Rehabilitation.
Qualitative Data

• Focus Group Interviews
• Satisfaction Surveys
• Participant Exit Interviews
Overall Satisfaction with Life Coaching - 12 months

N = 93

1 2 3 4

Completely Dissatisfied

Completely Satisfied

Standard Deviation: 0.54

3.80
Feedback about Life Coaching

“Coaching allows me to share concerns about other aspects of my life which affects the way I deal with my health.”

* Satisfaction Survey

“I was lucky to get a life coach, so it’s good because when I was diagnosed, it seemed like this huge thing and she helps me break it down so that there are little goals along the way, so that I’m not looking at it as an insurmountable mountain.”

* Fukunaga, L. et.al. Live Healthy Work Well Research Brief #2
Overall Satisfaction with Pharmacist Counseling – 12 months

N = 86

2.97

Standard Deviation : 1.03
Feedback about Pharmacists

“Meeting with my pharmacist, being able to describe to her what kind of medication I’m on, what kind of diet I’m on, and getting her feedback of what I need to stay on top and how to go about doing it and getting her support as well. That I can do it.”

Participant Feedback

“I think this program that I just completed with the University was very helpful because it had a pharmacist, it had a dietician, and it had a life coach, and all three of them were really able to help me out on a regular basis.”
Preliminary Implications

THE INTERVENTION:

• Increased diabetes self efficacy
• Improved health
• More effective for those with poor chronic disease management skills

FUTURE RESEARCH

• Informs federal legislation for potential policy and funding options
• Adds to the literature for future community-based person centered approaches for adults with chronic illness
Recommendations

• Study cost effectiveness of life coaching and pharmacist counseling
• Integrate into health initiatives
• Future interventions
  – Face to face: one on one support (engagement)
  – Use of goal setting and personal accountability
1. Data Collection
   • Through June 2010

2. Analysis & reporting
   • Measure effects of treatment on
     • Employment
     • Health
     • Access to government benefits
   • Final report – September 2010

3. Intervention components
   • Life Coaching
   • Pharmacist Counseling
Project Team  
(current and former members)

- Brandon Arakaki
- Calvin Cheung
- Thomas Christ
- Kriste Colley-Valdez
- Kevin Dierks
- Sreang Heak
- Junko Hashizume
- Jean Isip Schneider
- Courtney Johnson
- Dongmei Li
- Lisa Maetani
- Mary Lou Matsuura
- Adela Mearig
- Nani Picerno-Manrique
- Chin-Chin Minniear
- Corrie Ota
- Rebecca Rude Ozaki – PI
- Kathy Richins
- Crystal Watanabe
- Denise Watanabe
- Patrick Yrizarry
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(current and former members)

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- Sara Fares
- David Francis
- Landry Fukunaga
- LeeAnna Kobayashi
- Natalya Mekkoyeva
- Mizuho Murakami
- Christy Nishita
- Alice Tse
- Tammy Tom
- Denise Uehara – Coordinator
- Monica Um
- Marisa Watanabe
- Evaluation Advisory Council
- Just Your Type
- UH CRDG
Our Community

- Centers on Medicare & Medicaid Services
- HI Department of Human Services
- HI Department of Health
- Mathematica Policy Research, Inc.
- Hawaii Business Health Council
- Times Supermarket
- Longs Drug Stores
- HECO
- Roberts Hawaii
- Servco Pacific
- University Health Alliance
- Quality Assurance Committee
- American Diabetes Association – Hawaii Chapter
- Project Advisory Council
Mahalo… Thank you!

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