“Yo Puedo Hacerlo” Diabetes Self-Management Program for Hispanic women 50 years and older

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Introduction
Diabetes Mellitus II in the U.S.

- Diabetes mellitus II is a chronic medical condition, which requires long-term lifestyle modification and life-long management (Ayele, Tesfa, Abebe, Tilahun, & Gima, 2012)
- Coronary Heart Disease
- Stroke
- Neuropathy
- Nephropathy
- Retinopathy
- $246 million are spent annually in the U.S for diabetes health care costs.
- Lifetime cost estimates have ranged from $54,700 to $130,800 depending on the age (Zhuo, Zhang, and Hoerger, 2013)
  - For women with diabetes, costs were up to $67,000.00 (Zhuo, Zhang, and Hoerger, 2013)
Diabetes Mellitus

- Types 2 diabetes is the most common of the two types of diabetes and it affects an estimate of 90% of all patients diagnosed with the illness due to its association to preventable complications, such as cardiovascular diseases, stroke, amputations, kidney disease, and blindness (American Diabetes Association, 2016).

- The prevalence of diabetes in the Hispanics constitute 12% of all ethnic groups diagnosed with diabetes in the USA Hispanic population is 50% higher than other ethnic groups in the U.S (Saudek and Brick, 2009).

- Over 50% of older diabetic women in the U.S reported difficulty in performing daily functional activities (Ma et al, 2013).
Significance

• There is a correlation between post-menopausal status and hyperglycemia (Helanza et al, 2013)

• This increased risk is compounded with the fact that post-menopausal women have higher cardiovascular risks that may further influence diabetes complications (Rosano, Vitale, & Tulli, 2006)

• Older Hispanic women are disproportionately affected by diabetes as a result of greater risks of prior gestational diabetes, deceased physical activities, and increased prevalence of obesity (hispanichealth.org, 2016)
Background

• Diabetes self-management, an important aspect of diabetes control, which must be maintained at all life stages (Seliqman, Mendenhall, Valdovinos, Fernandez, & Jacobs, 2015)

• The purpose of diabetes self-management is to promote knowledge of health behaviors that lead to overall glycemic control

• Diabetes self-management programs have proven effectiveness toward achievement of a higher target A1C levels (Berikai et al, 2007)
Gap Analysis

• Hispanic population faces additional barriers to diabetes self-management due to low English proficiency, cultural difference, access to care, and low health literacy (Gonzalez, Lisanna, Berry, & Davison, 2013).

• Diabetes disproportionally affects the elderly with older Hispanics women being especially at risk due to higher prior history of gestational diabetes, decreased physical activity and increased prevalence of obesity (hispanichealth.org, 2016).

• Minority population such as Hispanics/Latinos are often undertreated, therefore unlikely to achieve glycemic control, blood pressure and lipid control (Cusi & Ocampo, 2011).
Literature Review

Evidence Based Studies
Group: Hispanic Females

Findings:

• Chilton, Hu, & Wallace (2006) identified low literacy, poor access to health care, language barriers, and low income as barriers to self management.

• Castillo et al (210) indicated that culturally tailored programs can improve diabetic knowledge and behavior toward glycemic control in a demographic group.

• Pena-Purcell, Borgess, & Jimenez (2011) identified patient empowerment as a powerful contributor to chronic disease management, such as diabetes.
Literature Review

Randomized double-blind Study with impact of lifestyle Intervention

Group: Hispanic Women

Findings:

• Tolbert et al (2011) identified diet regulations as an important part of diabetes management

• Yu et al, (2014); Zeh, Sandhu, Canaby, & Sturt, (2012) concluded that physical activity play a vital role in reducing diabetes related disabilities in Hispanic women

• Gonzalez, Lisanna, Berry, & Davison, (2013), confirmed that culturally sensitive interventions that address diet regulation and increase physical activity will decrease disparities and diabetes-related complications in older Hispanic females
Framework

The Health Belief Model

Health Belief Model (HBM) is a psychological health behavior change model that was developed by social psychologists in the 1950’s

• Used to explain health-related behaviors in diabetes self-management and to guide subsequent interventions (Skinner, Tiro, & Campion, 2015; Jalillian Motlag, SOLHI, & Gharibnaraz, 2014)

• People engage in a healthy behavior if the action is beneficial toward the reduction of, susceptibility to, or the seriousness of the (health) condition (Skinner, Tiro, & Campion, 2015)

• HBM constructs predict whether and why people take action to prevent, detect, or control disease
  Perceived susceptibility, severity, threat, benefits, and barriers to engaging in behavior cues to action and self-efficacy (Skinner et al., 2015)
The Health Belief Model Framework

Individual Perception (Belief)  Likelihood of Action

Theoretical Concepts
- Perceived Susceptibility
- Perceived Severity

Research Concepts
- Complications: HTN, MI, blindness, amputation, stroke,
- Medication non-adherence, Abn Glucose Level, Abn HgbA1C
- Perceived Threat
  - Permanent Disability
  - Premature Death

Operational Concepts
- Self-Management
  - Physical Activity
  - Glucose Monitoring
  - Diet Intake
  - Weight Management
  - Medication Adherence
  - HgbA1C Monitoring
  - Foot Care

Self-Efficacy
- Physical Activity,
  Nutrition,
  Cultural Diet Education

Self-Management
PICOT Question

In females Hispanic patients, 50 years and older with DMII, what is the effect of diabetes self-management education over a period of four consecutive weeks?
Inquiry Questions

• What is the relationship between increased physical activity and glycemic control?
• What is the relationship between diabetic dietary compliance and glycemic control?
• What is the relationship between weight management activity of diabetes self management training on weight control?
• What are the effects of increased knowledge of physical activity, diabetic diet, and glucose monitoring on diabetes self-management?
• What effects do diabetes self-management training have on participants’ self-efficacy?
• What is the difference between pre- and post-test scores of diabetes self-management participants?
Methods- Design

**Design:** Descriptive, non-experimental, single group pre- and post-test design.

**Setting:** Community in the suburbs of Houston

**Timeframe:** 4 weeks

Diabetes Self-Management Education – Total of four (4) 90-minute weekly sessions

**Inclusion/Exclusion Criteria**

**Inclusion:** Hispanic Females ages ≥ 50 years old, HgbA1C > 7%, ability to read and write in English or Spanish, Residence in Liberty or Montgomery county, Urgent Care patient

**Exclusion:** Males, Females < 50 years old, HgbA1C ≤ 6%, inability to read and write in English or Spanish, Non-resident of Liberty or Montgomery counties, Non-Hispanic ethnicity
Measures

Demographic Variables

Physiologic Measures
  Weight
  Blood Glucose
  Blood Pressure

Physical Activity

Food Diary

The Diabetes Self-Management Questionnaire (DSMQ)
  • 16-item questionnaire that assess: food (type & amount), blood glucose (frequency & record), medications (follow or skip), doctors appointment (keep or skip), Physical activity (keep or skip), self care (poor or not)
Data Analysis

- DMSQ Psychometrics assessed at baseline, after 2\textsuperscript{nd} session, and at 4\textsuperscript{th} session
- Differences in \textit{mean} DMSQ scores between 1\textsuperscript{st} and 2\textsuperscript{nd} follow-ups compared using \textit{repeated measures ANOVA} to examine mean differences at 3 different points
- \textit{Kriskal Wallis or One way ANOVA} was used to explain the difference in DMSQ scores
- The p-value associated with the two-sided test was held at 0.05 and asserts that findings are not due to chance
RESULTS
• Summary of questionnaire responses support shows dramatic shift in responses indicating improvement
• Higher net score is improvement, higher is good versus lower net score is bad.
• Difference between baseline and final and second and final survey is significantly higher, clinically meaningful,
• Scores supported by corresponding shift upwards (improvement)
# Results

## Hypothesis Test Summary

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Test</th>
<th>Sig.</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>The distribution of DSMQ Recoded Survey Summative Score (Higher is Better) is the same across categories of DSMQ_GROUP.</td>
<td>Independent-Samples Kruskal-Wallis Test</td>
<td>.000</td>
<td>Reject the null hypothesis.</td>
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</tbody>
</table>

Asymptotic significances are displayed. The significance level is .05.
### Statistics

**DSMQ Recoded Survey Summative Score (Higher is Better)**

<table>
<thead>
<tr>
<th></th>
<th>DSMQ_GROUP</th>
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</thead>
<tbody>
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<tr>
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<tr>
<td>Percentiles 75</td>
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\(^a\) Multiple modes exist. The smallest value is shown.
Discussion

• “Yo Puedo Hacerlo” (I Can Do It) is a diabetes self-management program intended to empower Hispanic females 50 years and older
• 8 sessions conducted over 4-week period; 90 minutes per session
• **Intended population:** 50 older Hispanic females with diabetes and established patients of Dr. D’s Urgent Care
• Only 16-20 participants in attendance and completed the program
• Main goals of the scholarly project were to have each participant obtain an improved score in their DMSQ over time and better glycemic control demonstrated by decreased self-reported blood glucose.
• The analysis of scores demonstrated goals accomplished
Limitations

- Language barrier, but a Spanish medical interpreter was always available
- Lack of direct communication limited evaluation of proper comprehension of information
- Low participant turnout responsible for small population
- Difficulty in locating many participants by phone and writing due to effects of natural disaster (Hurricane Harvey) that displaced many
- Lateness to sessions partly due to holiday preparation (Thanksgiving)
Implications

Nursing Implications
• Provision of diabetes care that is focused on the need of Hispanic population with the understanding of cultural diversity

Practice Implications
• When a culturally-specific diabetes self-care management training is provided to a population at risk, there is a tendency for better outcomes and limited disease complications

Policy Implications
• Need of policy in place for community programs that addresses diabetes self-management to a fast growing population, such as the Hispanics, increased health care costs of diabetes-related complications will be limited

Future Research
• This pilot study represents a foundation of future larger population study
  Future study replication that promotes diabetes self-management will further increase patient awareness and knowledge
Conclusion

• Unique diabetes self-management program tailored to Hispanic women, age 50 years and older.
• It is evident that group diabetes education can promote self-efficacy and self-management of diabetes.
• A culturally-sensitive diabetes program can promoting better outcomes and quality of life among a population of the underserved, low-literate, and financially limited population.
• The diabetes self-management project has demonstrated effectiveness in increased knowledge and behavior that will have a long-term effect on a healthy lifestyle.
References


Any Questions