

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

Elizabeth A. Babalola, MSN, RN, FNP-BC
Donna Hamby DNP, RN, ACNP-BC
Richard E. Gilder, RN-BC, MS

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, decreased 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 disproportionately 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, (2104); 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

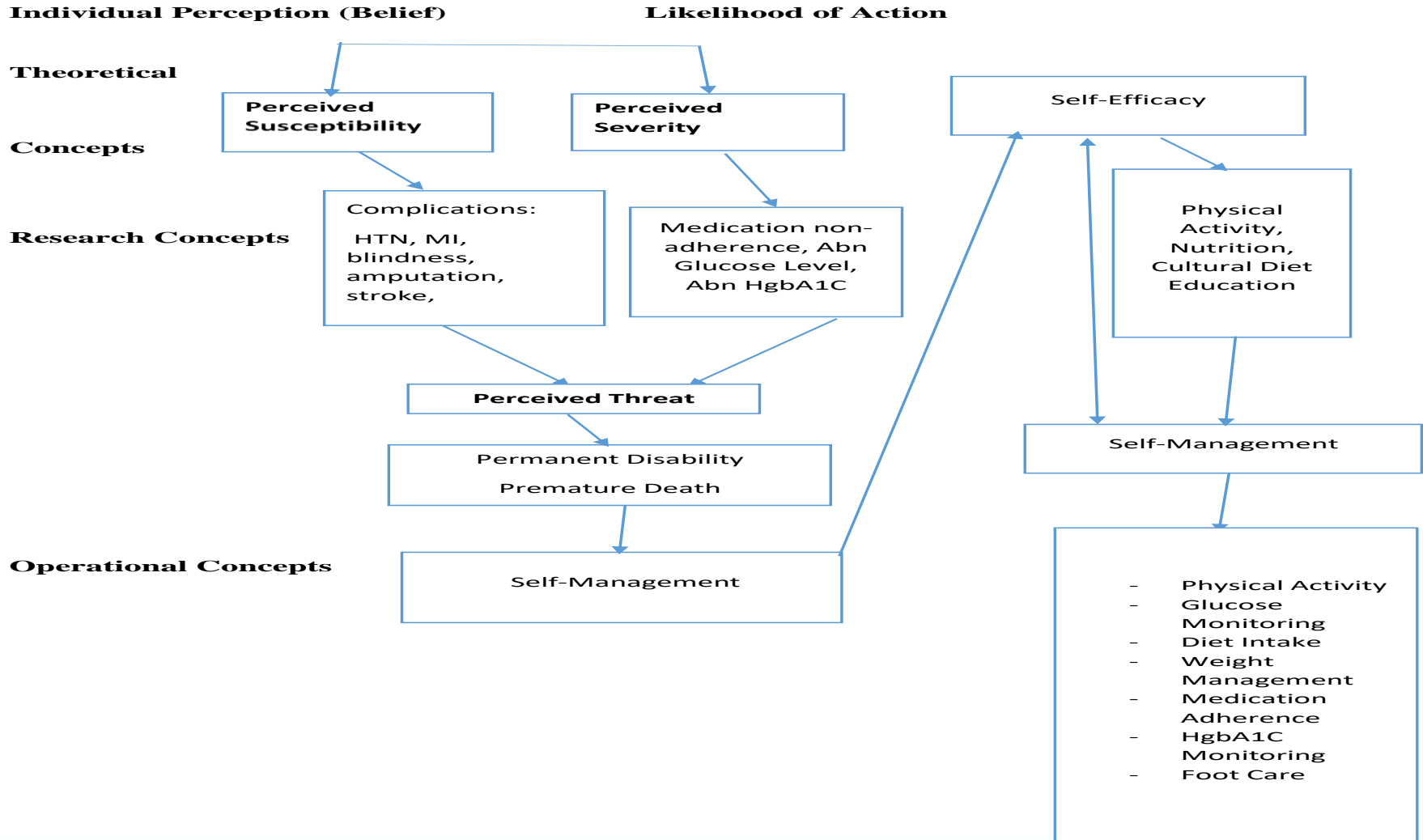
The Health Belief Model

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, & Champion, 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, & Champion, 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



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?



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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 $\leq 6\%$, 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 2nd session, and at 4th session
- Differences in mean DMSQ scores between 1st and 2nd follow-ups compared using *repeated measures ANOVA* to examine mean differences at 3 different points
- **Kraskal 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





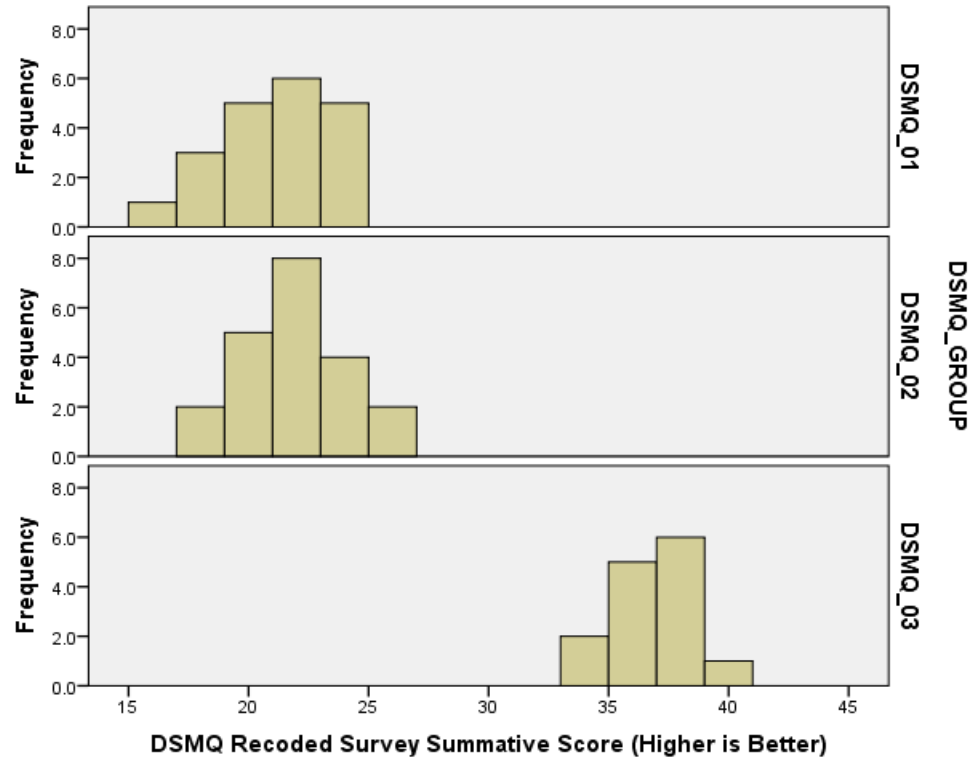
- Summary of questionnaire responses support shows dramatic shift in responses indicating improvement
- Higher net score is improvement, higher is good versus lower net score is bad.
- Difference between baseline and final and second and final survey is significantly higher, clinically meaningful,
- Scores supported by corresponding shift upwards (improvement)

Results

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of DSMQ Recoded Survey Summative Score (Higher is Better) is the same across categories of DSMQ_GROUP.	Independent-Samples Kruskal-Wallis Test	.000	Reject the null hypothesis.

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

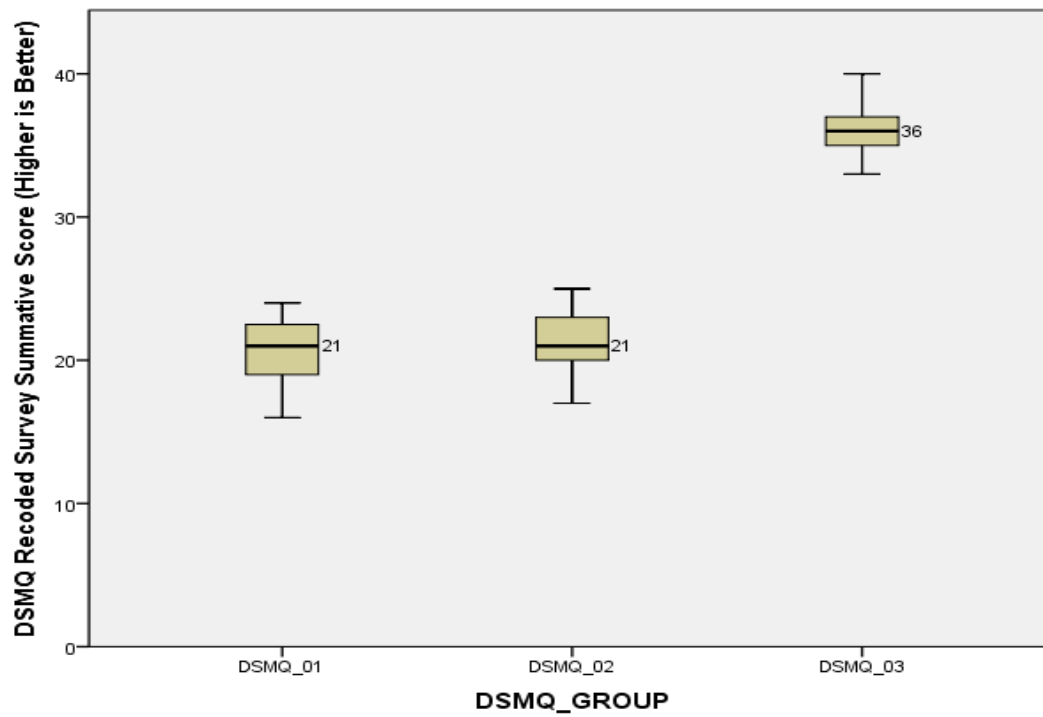


Statistics

DSMQ Recoded Survey Summative Score (Higher is Better)

		DSMQ_GROUP		
		DSMQ_01	DSMQ_02	DSMQ_03
N	Valid	20	21	14
	Missing	0	0	5
Mean		20.50	21.43	36.14
Median		21.00	21.00	36.00
Mode		21 ^a	20 ^a	35
Std. Deviation		2.283	2.226	1.875
Variance		5.211	4.957	3.516
Range		8	8	7
Minimum		16	17	33
Maximum		24	25	40
Percentiles	25	19.00	20.00	35.00
	50	21.00	21.00	36.00
	75	22.75	23.50	37.25

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. Ds 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



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Any

Questions

**Thank
You**

Mahalo

Kiitos

Tack

Toda

Grazie

Obrigado

Thanks

Takk

Merci

Gracias