

A Tailored Nutrition Intervention for Mexican Americans with type 2 Diabetes

**Marylyn Morris McEwen, PhD, APRN, BC ¹, Lourdes Barrera, BA ²,
Ellen J. Graver, MS ³, Vern Hartz ³, Alice Pasvogel, PhD, RN ¹, Robin
Whitacre, BS ³, Gwen Gallegos, CDE, FNP ⁴**

**(1) College of Nursing, The University of Arizona, (2) Mel and Enid Zuckerman College of
Public Health, (3) The Arizona Cancer Center, (4) Carondelet Health System**



Purpose

- ★ Explore the feasibility and effectiveness of a 6-month DM self-management support pilot intervention for Mexican American adults with T2DM who reside in an urban community in the Arizona-Sonora, Mexico border region.
- ★ To report on the tailored, culturally appropriate nutrition component of the diabetes intervention.

BORDER XXI GEOGRAPHIC REGIONS

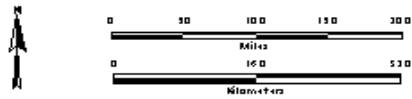
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- Sister City
- State Boundary
- 100 km Border Buffer

Sources:
 Digital Chart of the World
 EPA Region 6 Border Buffer
 EPA Region 6 Albers Feet Projection

Draft Border XXI Planning



EPA Regions 6 and 9
 GIS Programs
 Map Created 6/7/96



Map Created by CDSI for EPA Office of International Activities



Group - Focused Intervention Component

2-hour Monthly Group Sessions

- Informational Support
- Appraisal Support
- Emotional Support

30-minute
CDE-facilitated
Educational Booster

- Diabetes Overview
- Healthy Eating
- DM Distress Management
- Physical Activity
- Preventing Complications
- Review/Celebration

1-hour
Promotora-facilitated
**Social Support
Session**

10- minute
Promotora-facilitated
Physical Activity



Individual-Tailored Intervention Component

Promotora-delivered Home Visits

- Informational Support
- Appraisal Support
- Emotional Support

HV #1 Nutrition

24hr recall
Portion Distortion
Label Reading
Fast Food Guide

HV #2 DM Distress Management

HV #3 Physical Activity



Methods

- ★ **A quasi-experimental single group repeated measures design was used to examine the feasibility of the intervention which addressed specific ADA nutrition recommendations.**
- ★ **Baseline measures used to tailor the nutrition intervention**
 - **24-diet recall**
 - **DM Knowledge**
 - **DM self-management activities**
 - **Biomarkers**
 - **HbA_{1c}**
 - **BMI**

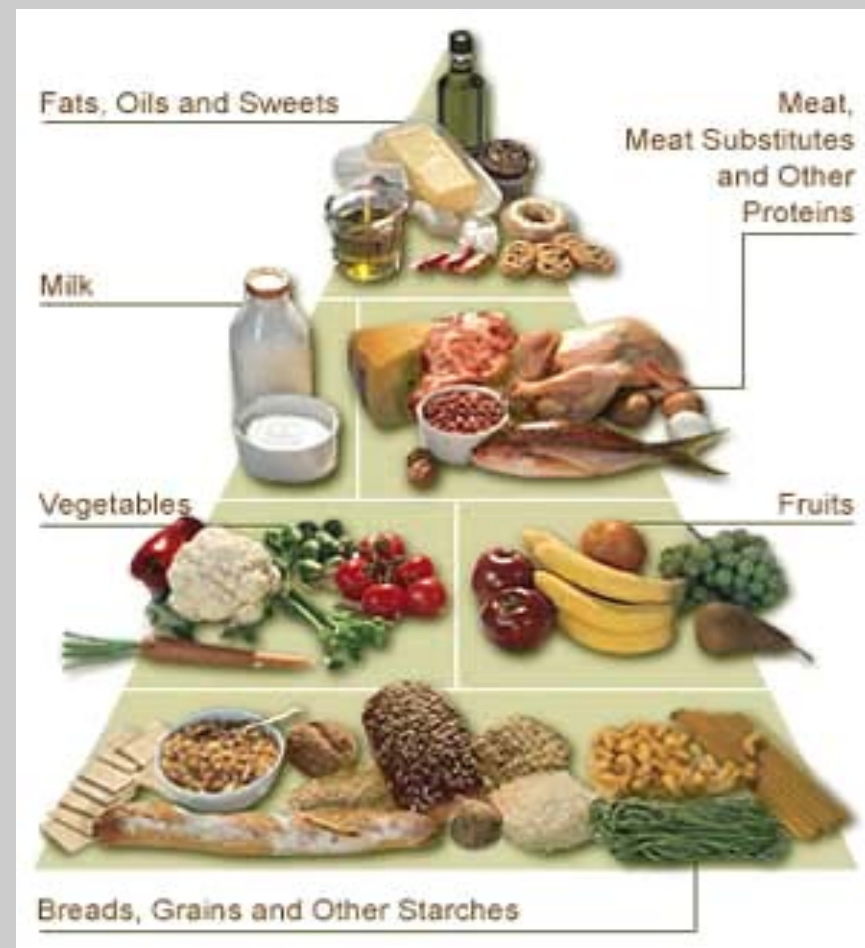
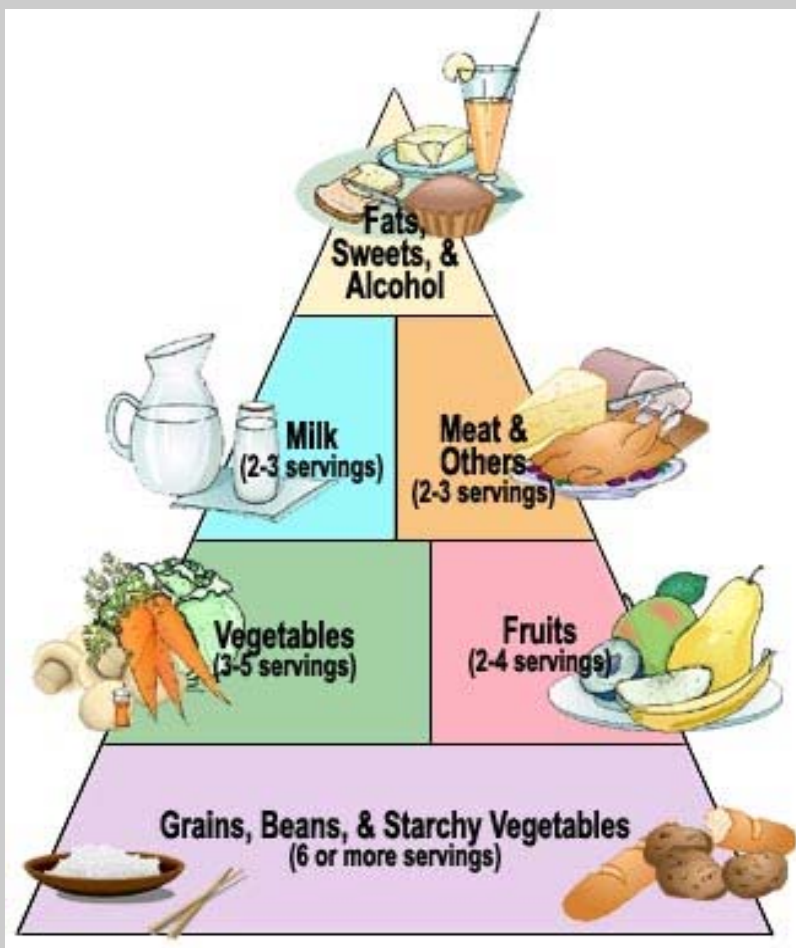


Sample Characteristics

Characteristics	Mean (<i>SD</i>)	N (%)
Female		17 (81%)
Age	53.7 (8.1)	
County of Origin		
MX/Central America		13 (61.9)
U.S.		8 (38.1)
Language Spoken in Home		
Spanish		8 (38.1)
English		6 (28.6)
Both		7 (33.3)
Years of Formal Education	10.38 (3.7)	
Years with DM	7.2 (6.9)	

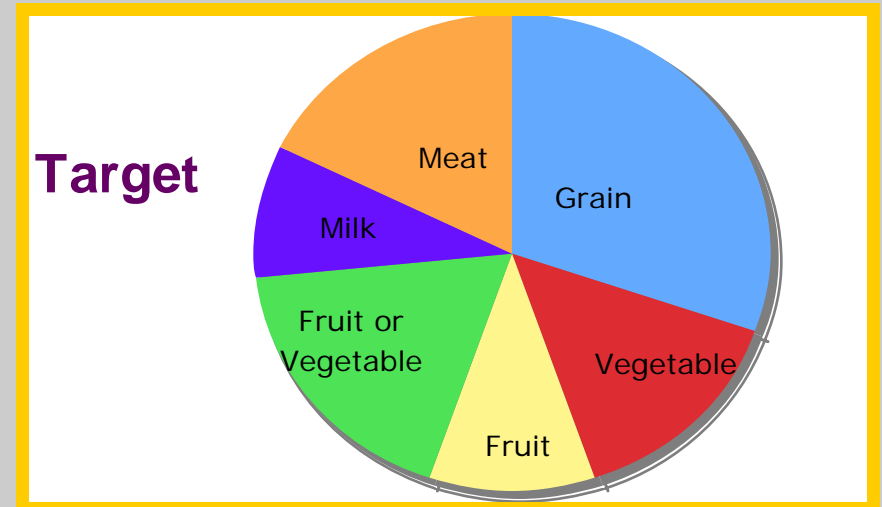
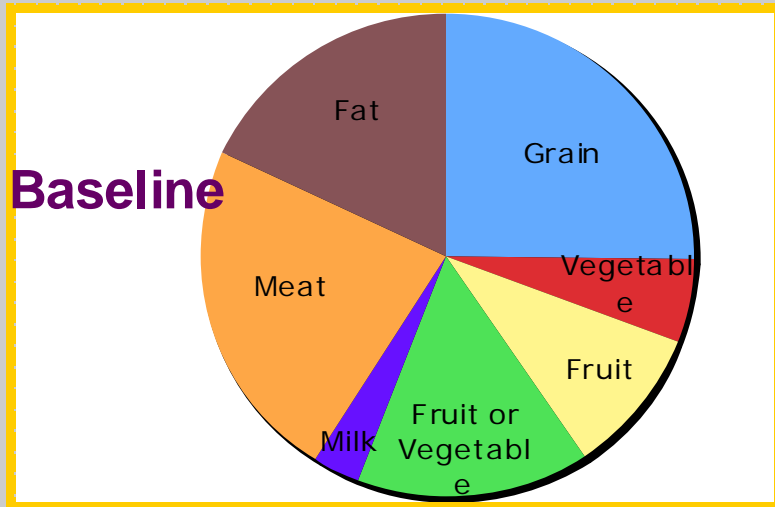


Diabetes Food Pyramid





Baseline vs. Target Consumption





Comparison to Diabetes Food Pyramid Target Servings

	Grain	Veg	Fruit	Milk	Meat	Fat
Target Servings/Day	6-11	3-5	2-4	2-3	4-6	minimize
Baseline Mean (SD)	6.9 (3.2)	1.5 (1.6)	2.6 (3.1)	0.8 (1.1)	6.3 (4.8)	4.9 (4.2)
Number (%) Below Target	10 (48%)	17 (81%)	10 (48%)	19 (90%)	8 (38%)	
Number (%) Within Target	7 (33%)	2 (10%)	6 (29%)	1 (5%)	5 (24%)	
Number (%) Above Target	4 (19%)	2 (10%)	5 (24%)	1 (5%)	8 (38%)	



Pre-Post Intervention Behavioral Measures (N=21)

Measure	Pre- Intervention Mean (<i>SD</i>)	Post- Intervention Mean (<i>SD</i>)	T value (df) ^a	<i>p</i>
DM Self-Care Activities				
Diet	3.65 (2.1)	4.64 (1.4)	-2.02 (20)	.05 ^b
Exercise	3.29 (2.7)	4.71 (1.2)	-2.51 (20)	.02 ^b
Blood Sugar	3.88 (3.0)	4.57 (2.7)	-1.15 (20)	.26
Foot Care	5.59 (1.7)	6.41 (1.0)	-2.26 (20)	.04 ^b
Mean DM Self-Care	3.85 (1.3)	4.81 (0.8)	-3.37 (20)	.003 ^b
DM Knowledge	19.24 (3.2)	20.52 (2.2)	-2.07 (20)	.05 ^b
^a Paired Samples t-test				
^b Significant at $p \leq .05$				



Pre-Post Intervention Physiological Measures

Measure	Pre- Intervention Mean (<i>SD</i>)	Post- Intervention Mean (<i>SD</i>)	N	Range
BMI	35.26 (5.5)	35.14 (6.0)		
Weight	199.95 (36.7)	199.17 (38.48)		
Overwt Pre			2	
Overwt Post			4	
Obese Pre			19	
Obese Post			17	
HbA1_c	7.79 (2.4)	7.91 (2.7)		
Decrease			11	0.10% - 2.20%
Increase			9	0.10% - 6.0%
No Change			1	



Limitations

- ★ **Single-group quasi-experimental design**
- ★ **Small sample size**
- ★ **Generalizability of findings limited by design & sample size**
- ★ **24-hour diet recall not repeated @ post-intervention**



Conclusions

- ★ This pilot study demonstrated the feasibility of collecting and using baseline data for tailoring the nutritional component of a diabetes self-management social support intervention for persons of Mexican origin with type 2 diabetes in the U.S.-MX border.
- ★ The *promotora*-delivered nutritional intervention in combination with the CDE-delivered educational session is an effective approach for increasing DM self-care activities related to diet & for increasing DM knowledge.
- ★ The lack of statistically significant physiological outcomes is probably due to the lack of power, typical of small pilot studies.
 - Several outcomes, while not statistically significant, demonstrate a positive trend.
 - It is possible that with a larger sample size these trends might be statistically significant.
- ★ Further testing of this intervention with using a randomized group design with a larger sample size is essential.



Policy Recommendations

- ★ Research that supports well-designed community-based DM self-management social support & that establishes the effectiveness of *promotoras* as interventionists for decreasing DM health disparities in the U.S.-MX border region should be supported.