Diabetes in the Latino/Hispanic Population
The case for education and outreach

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Challenges

- The Latino/Hispanic population is the largest minority group in the country (50.5 million – 16% of total population - 2010 census)
- The prevalence of type 2 diabetes is at least twice as high as that in the White population
- Diabetes care disparities – worse glycemic control, high rates of chronic complications
- Social and cultural barriers
- Limited cultural awareness and skills among providers
- Significant limitations in clinical practice – time, resources, support
- Limited comprehensive culturally oriented programs that address patient, provider and health system issues
The US Hispanic/Latino Population

Mexicans 63%
Central Americans 7.9%
Puerto Ricans 9.2%
Cubans 3.5%
Dominicans 2.8%
Spaniards 1.3%
Others 6.8%
South Americans 7.9%

Insulin Resistance and Abdominal Obesity

Thrifty Genes + Lifestyle

Appetite and Satiety?

Insulin Resistance and Abdominal Obesity

Beta and Alpha Cell Dysfunction

Incretin dysfunction?

Renal glucose handling?

Type 2 Diabetes

Frequent Chronic Complications

Increased Mortality rates

Socio-economic and Cultural factors

Caballero AE. Modified from Curr Diab and Endocrinology Reports 2007. 14:151-157
Disparate and Disproportionate prevalence of long-term complications of type 2 diabetes in minorities Vs NH Whites

- lower leg amputations 2-4x
- retinopathy and blindness 2-4x
- stroke 2x
- ESRD 4-6x
Metabolic control in the US
Percentage of patients achieving an A1c<7%

A1c levels by ethnicity/race

NHANES 1999-2000

Demographic and clinical characteristics between both groups, comparisons were done with t test in case of continuous variables and $x^2$ in case of dichotomous variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Controls (n=17)</th>
<th>At risk (n=21)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>14.18±2.3</td>
<td>13.33±2.7</td>
<td>0.31</td>
</tr>
<tr>
<td>Waist/hip ratio</td>
<td>0.79±0.08</td>
<td>0.88±0.11</td>
<td>0.003</td>
</tr>
<tr>
<td>Total % fat</td>
<td>24±6</td>
<td>42±9</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Trunk fat</td>
<td>19±5</td>
<td>42±9</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Systolic BP</td>
<td>101.5±7</td>
<td>116.6±12</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Diastolic BP</td>
<td>68.6±6</td>
<td>70.9±6</td>
<td>0.23</td>
</tr>
<tr>
<td>Total cholesterol</td>
<td>142.06</td>
<td>149.76</td>
<td>0.318</td>
</tr>
<tr>
<td>Triglycerides</td>
<td>58.82</td>
<td>108.29</td>
<td>0.004</td>
</tr>
<tr>
<td>HDL</td>
<td>42.00</td>
<td>37.52</td>
<td>0.162</td>
</tr>
<tr>
<td>LDL</td>
<td>89.24</td>
<td>93.50</td>
<td>0.484</td>
</tr>
</tbody>
</table>
Obesity and Endothelial Dysfunction in Hispanic Children

Panel A

![Graph showing glucose levels over time](image)

Panel B

![Graph showing insulin levels over time](image)
Caballero AE. Diabetes Care. 2008; 31:576-82
Expenditures in the Medicare Population with diabetes

Classification of Medicare Consumers based on aggregate payments

<table>
<thead>
<tr>
<th>Level</th>
<th>Percentile Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crisis</td>
<td>Top 1%</td>
</tr>
<tr>
<td>Heavy</td>
<td>90 to 99 percentile</td>
</tr>
<tr>
<td>Moderate</td>
<td>75 to 89 percentile</td>
</tr>
<tr>
<td>Light</td>
<td>50 to 74 percentile</td>
</tr>
<tr>
<td>Low</td>
<td>Under 49 percentile</td>
</tr>
</tbody>
</table>

## Expenditures in the Medicare Population with diabetes

<table>
<thead>
<tr>
<th>Year and Cluster</th>
<th>Beneficiaries With Diabetes</th>
<th>Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crisis consumers</td>
<td>128,828</td>
<td>3</td>
</tr>
<tr>
<td>Heavy consumers</td>
<td>785,944</td>
<td>16</td>
</tr>
<tr>
<td>Moderate consumers</td>
<td>1,064,128</td>
<td>21</td>
</tr>
<tr>
<td>Light consumers</td>
<td>1,470,359</td>
<td>29</td>
</tr>
<tr>
<td>Low consumers</td>
<td>1,516,818</td>
<td>31</td>
</tr>
<tr>
<td>Total</td>
<td>4,966,077</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crisis consumers</td>
<td>166,951</td>
<td>2</td>
</tr>
<tr>
<td>Heavy consumers</td>
<td>1,036,735</td>
<td>15</td>
</tr>
<tr>
<td>Moderate consumers</td>
<td>1,447,366</td>
<td>21</td>
</tr>
<tr>
<td>Light consumers</td>
<td>2,018,697</td>
<td>29</td>
</tr>
<tr>
<td>Low consumers</td>
<td>2,275,125</td>
<td>33</td>
</tr>
<tr>
<td>Total</td>
<td>6,944,874</td>
<td></td>
</tr>
</tbody>
</table>

Expenditures in the Medicare Population with diabetes

The Latino Diabetes Initiative at Joslin

A comprehensive strategy that involves clinical care, patient education, community outreach, research and provider education

www.joslin.org/latino
Current structure of LDI

Clinical Program

Research Program

Community Based Activities

Professional Education
What Causes Disparities in Healthcare?

**Patient**
- Socio-economic status
- Education/Health literacy
- Health seeking behavior
- Cultural factors
- Mistrust

**Provider**
- Lack of cultural awareness
- Stereotyping or biases
- Language barrier
- Lack of resources

**System**
- Lack of culturally oriented programs
- Inadequate interpreter services
- Time pressures and resource constraints
- Lack of adequate training
- Limited Access
The health of individuals is inseparable from the health of communities
(Healthy People 2010)
Primary Factors That May Influence Diabetes Development and Care in Culturally Diverse Populations

- Acculturation
- Body image
- Cultural competence
- Depression
- Educational level
- Fears
- General family integration and support
- Health literacy
- Individual and social interaction
- Judgment about disease

Caballero AE. Am J Med 2011; 124, S10-S15
Primary Factors That May Influence Diabetes Development and Care in Culturally Diverse Populations

- Knowledge about the disease
- Language
- Myths
- Nutritional preferences
- Other forms of medicine (alternative)
- Physical activity preferences
- Quality of life
- Religion
- Socioeconomic status

Caballero AE. Am J Med 2011; 124, S10-S15
A true story:

64 y/o Hispanic woman
Patient does not speak English
Treated for Hypertension

Received a prescription for:

Lisinopril 10 mg.
Once/d.

Patient rushed to the ER due to severe hypotension
Rosa’s Story
Culturally Appropriate Translations
Practice Listening!

And observing!

➢ Patients are interrupted by the healthcare provider after an average of 23 seconds

➢ In only 28% of visits did patients completely express concerns

➢ In 25% of visits, the healthcare provider never asked about patient’s concerns

Goal setting

- **S** - Specific
- **M** - Measurable
- **A** - Attainable
- **R** - Realistic
- **T** - Time
Current structure of LDI

Clinical Program

Community Based Activities

Research Program

Professional Education
Time spent for a patient with diabetes

- Health Care Team: 1.3
- Work: 80
- Family: 285
- Person with diabetes: 365
Ideal Body Image in Latinas with type 2 diabetes

3 or 4 – ideal shape for White women

5 – ideal shape for Latino women

Weitzman PF, Caballero AE, Millan A. The Diabetes Educator ; Sept-Oct 2013
**Esto es mejor: Improving food purchasing selection among low-income Spanish-speaking Latinos through social marketing messages**

**Baseline Evaluation:**

Analysis of the Grocery Receipt:
- 930 Calories per dollar
- 29 gr of Fat per dollar
- 150 gr of Carbs per dollar
- 5 gr of Fiber per dollar
- 21 gr of Protein per dollar

46500 cal – 50 USD

**Other activities:**
- Home Visits
- Supermarket tours
- Photovoice
- Rosa’s Story

**Esto es mejor: Improving Food Purchasing Selection Among Low-income Spanish-speaking Latinos**

Each dollar bought:

1st Supermarket
- 1320 Calories
- 84 grams of fat
- 135 grams of carbs
- 10 grams of fiber
- 9 grams of protein

2nd Supermarket
- 583 Calories
- 28 grams of fat
- 56 grams of carbs
- 4 grams of fiber
- 18 grams of protein
Esto es mejor: Improving Food Purchasing Selection Among Low-income Spanish-speaking Latinos - RWJ Project

Before

After
Model for Cross-Cultural Care: A Patient-Based Approach

Awareness of Cultural and Social Factors → Elicit Factors → Negotiate Models → Implement Management Strategies

Tools and skills necessary to provide quality care to any patient we see, regardless of race, ethnicity, culture, class or language proficiency.
THANK YOU