Boston & Phoenix NHMA Chapters

Diabetes in the Hispanic/Latino Population: Challenges & Opportunities

September 10, 2020
7:00 PM – 8:15 PM EDT
www.NHMAMd.org
Welcome

Elena Rios, MD, MSPH, FACP
President & CEO
National Hispanic Medical Association
Washington, DC

• Encourage your patients to enroll and inform others about the clinical trials for COVID-19 Vaccines
  ◦ www.CoronaVirusPreventionNetwork.org
  ◦ www.COVIDVACCINESTUDY1.com

  ◦ www.InsulinAffordability.com

• Instructions to receive CME will be included in thank you email. Webinar recording & CME will be available for 1 year at www.NHMAmd.org/webinars
Overview

Diana Torres-Burgos, MD, MPH
Advisor on Hispanic Health
National Hispanic Health Foundation
Chair, National Hispanic Medical Association
NYC Chapter

Housekeeping
- Presentations to be followed by 10-15 minute discussion
- Microphones will be muted
- Type questions in chat box
- Recording available next week at www.NHMAmd.org
Objectives - After Attending This Program You Should Be Able To

- Describe the key biological, social, and cultural factors that increase the risk for type 2 diabetes among Latinos/Hispanics living in the United States.
- Recognize the need to create comprehensive culturally and linguistically diabetes care programs for Latinos/Hispanics.
- Determine the importance of developing community engagement projects to decrease diabetes in Latino population.

Disclosure of Conflict of Interest

The following table of disclosure information is provided to learners and contains the relevant financial relationships that each individual in a position to control the content disclosed to Amedco. All of these relationships were treated as a conflict of interest, and have been resolved. (C7 SCS 6.1–6.2, 6.5)

All individuals in a position to control the content of CE are listed in the program book and have disclosed they have no relevant financial relationships.

<table>
<thead>
<tr>
<th>First</th>
<th>Last</th>
<th>Commercial Interest</th>
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<tbody>
<tr>
<td>Enrique</td>
<td>Caballero</td>
<td>NA</td>
</tr>
<tr>
<td>Ricardo</td>
<td>Correa</td>
<td>NA</td>
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<tr>
<td>Vincent</td>
<td>Garity</td>
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<tr>
<td>Ben</td>
<td>Melano</td>
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<td>Elena</td>
<td>Rios, MD, MSPH, FACP</td>
<td>NA</td>
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<tr>
<td>Diana</td>
<td>Torres-Burgos</td>
<td>NA</td>
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Diabetes in Latino/Hispanic Americans

A. Enrique Caballero, MD
Endocrinologist/Clinical Investigator
Director Latino Diabetes Health
Division of Endocrinology, Diabetes and Hypertension
Brigham and Women’s Hospital
Harvard Medical School
Boston, MA

Chair, Health Care Disparities Committee
American Diabetes Association

Boston Chapter Leader
National Hispanic Medical Association
1. Which of the following statements is CORRECT?

A. Race and ethnicity are synonyms
B. Latino and Hispanic are interchangeable terms
C. 1 in every 4 children in the US are Latinos/Hispanics
D. Latinos have a homogeneous genetic background
E. Puerto Ricans represent the most common Hispanic/Latino subgroup in the U.S
Race/Ethnicity Definitions

Race

• Usually biological
• White, Black, American Indian (Native American)/Alaska Native (Eskimo, Aleut), Asian/Pacific Islander
• Often overlapping

Ethnicity

• Primarily social
• Independent of race
• Hispanic or Latino?

- Caballero AE. Diabetes in minority populations.
LATINOS IN THE U.S. ARE...

50.5 MILLION PEOPLE

16.3% OF THE POPULATION

1 IN EVERY 6 INDIVIDUALS

1 IN EVERY 4 CHILDREN

56% OF THE POPULATION GROWTH FROM 2000 TO 2010

$1 TRILLION IN BUYING POWER

65.5% MEXICAN
9.1% PUERTO RICAN
3.6% SALVADORAN
3.5% CUBAN
2.8% DOMINICAN
2.2% GUATEMALAN
1.9% COLOMBIAN
...AND MORE

SOURCES: U.S. CENSUS BUREAU, PEW HISPANIC CENTER, SELIG CENTER FOR ECONOMIC GROWTH | VISIT:
Projected Hispanic Population in the U.S.

M = millions

<table>
<thead>
<tr>
<th>Year</th>
<th>Population (M)</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>2017</td>
<td>58.9M</td>
<td>18%</td>
</tr>
<tr>
<td>2020</td>
<td>62.3M</td>
<td>19%</td>
</tr>
<tr>
<td>2025</td>
<td>68.5M</td>
<td>20%</td>
</tr>
<tr>
<td>2030</td>
<td>74.8M</td>
<td>21%</td>
</tr>
<tr>
<td>2035</td>
<td>81.2M</td>
<td>22%</td>
</tr>
<tr>
<td>2040</td>
<td>87.6M</td>
<td>23%</td>
</tr>
<tr>
<td>2045</td>
<td>93.8M</td>
<td>25%</td>
</tr>
<tr>
<td>2050</td>
<td>99.8M</td>
<td>26%</td>
</tr>
<tr>
<td>2055</td>
<td>105.6M</td>
<td>27%</td>
</tr>
<tr>
<td>2060</td>
<td>111.2M</td>
<td>28%</td>
</tr>
</tbody>
</table>

www.census.gov/popest and
www.census.gov/programs-surveys/popest.html
Disparities by Race/Ethnicity

Total Diabetes Prevalence
- White: 11%
- Black: 22%

Undiagnosed Diabetes
- White: 32%
- Black: 51%

## Factors that influence Diabetes Clinical Practice

<table>
<thead>
<tr>
<th>Acculturation</th>
<th>Nutrition</th>
</tr>
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<tbody>
<tr>
<td>Biology</td>
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</tr>
<tr>
<td>Clinicians’ cultural awareness</td>
<td>Perception of Body Image</td>
</tr>
<tr>
<td>Depression and Emotional Distress</td>
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<tr>
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<td>Vulnerable Groups</td>
</tr>
<tr>
<td>Judging</td>
<td>Why?</td>
</tr>
<tr>
<td>Knowledge of the Disease</td>
<td>Xercise!</td>
</tr>
<tr>
<td>Language</td>
<td>You are in charge</td>
</tr>
<tr>
<td>Medication Adherence</td>
<td>Zip it!</td>
</tr>
</tbody>
</table>

Caballero AE.  Front Endocrinol Aug 2018; 9: 479
Factors that influence Diabetes Clinical Practice

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Caballero AE. Front Endocrinol Aug 2018; 9: 479
Pathophysiology of Type 2 Diabetes

- Appetite and Satiety
- Thrifty Genes + Lifestyle
- Socio-economic and Cultural Factors
- Insulin Resistance and Abdominal Obesity
- Beta and Alpha Cell Dysfunction
- Incretin Dysfunction?
- Renal Glucose Handling?
- Frequent Chronic Complications
- Increased Mortality Rates

Caballero AE. Front Endocrinol Aug 2018; 9: 479
<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>
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<tr>
<td>LDL</td>
<td>89.24</td>
<td>93.50</td>
<td>0.484</td>
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</tbody>
</table>

Caballero AE. Diabetes Care. 2008; 31:576-82
Metabolic and Vascular Abnormalities in Overweight children

Panel A

Panel B

Glucose (mmol/L)

Insulin (µU/ml)

OGTT time points (minutes)

Caballero AE. Diabetes Care. 2008; 31:576-82
Metabolic and Vascular Abnormalities in Overweight children

Caballero AE. Diabetes Care. 2008; 31:576-82
2. According to a CDC report, what is the estimated lifetime risk of developing diabetes for Latino/Hispanic children born in the year 2000 in the U.S.?

A. 19 %
B. 24 %
C. 31 %
D. 38 %
E. 50 %
Estimated Life-time risk of developing diabetes for individuals born in the U.S. in the year 2000

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Caballero AE. Front Endocrinol Aug 2018; 9: 479
Myths and misconceptions about insulin

Among many patients, insulin use is:

• Associated with blindness and other diabetes-related chronic complications
• Linked with a more severe/advanced disease
• A punishment for not adhering to the recommended treatment plan
• Related to a more difficult and time-consuming self care management plan
• Addictive
• Not useful and expensive
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Caballero AE. Front Endocrinol Aug 2018; 9: 479
Group Medical Visits
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Caballero AE. Front Endocrinol Aug 2018; 9: 479
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
Culturally Appropriate Translations
<table>
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Caballero AE. Front Endocrinol Aug 2018; 9: 479
Improving Food Purchasing Selection Among Low-Income Spanish-Speaking Latinos

Baseline Evaluation:

Analysis of the grocery receipt:

• 930 calories per dollar
• 29 g of fat per dollar
• 150 g of carbs per dollar
• 5 g of fiber per dollar
• 21 g of protein per dollar

46500 cal – 50 USD

Other activities:

• Home visits
• Supermarket tours
• Photovoice
• Rosa’s Story

Improving Food Purchasing Selection Among Low-Income Spanish-Speaking Latinos

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

Improving Food Purchasing Selection Among Low-Income Spanish-Speaking Latinos

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Caballero AE. Front Endocrinol Aug 2018; 9: 479
Ideal Body Image in Latinas With Type 2 Diabetes

3 or 4 – ideal shape for White women

5 – ideal shape for Latina

Factors that influence Diabetes Clinical Practice

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Caballero AE. Front Endocrinol Aug 2018; 9: 479
Diabetes hits lower income groups harder

Factors that influence Diabetes Clinical Practice

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Biology  Other Forms of Medicine
Clinicians’ cultural awareness  Perception of Body Image
Depression and Emotional Distress  Quality of Life
Educational level  Religion and Faith
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Caballero AE. Front Endocrinol Aug 2018; 9: 479
Telemedicine AND diabetes

• 2418 articles
Telemedicine AND diabetes
AND Latinos or Hispanics

- 51 articles
- 18 RCT

Pubmed Search on Sep 1, 2020
Factors that influence Diabetes Clinical Practice

- Acculturation
- Biology
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- Zip it!

Caballero AE. Front Endocrinol Aug 2018; 9: 479
Key diabetes self-care behaviors:
- Eating habits
- Physical activity
- Glucose testing
- Medication adherence
- Problem solving
- Healthy coping
- Reducing risk

Adapted from Caballero AE. Endocrine Practice 2019; 25 (7): 766-768
Summary

• The growing Latino/Hispanic population in the U.S. represents a very diverse group of individuals

• Multiple patient, provider and health care system factors play a role in explaining the difficulty in achieving treatment goals in this population

• Effective cross-cultural communication may lead to better diabetes outcomes

• Culturally and linguistically oriented strategies are likely to help patients improve diabetes self-care behaviors and improve diabetes related outcomes.
THANK YOU
Helping the Latino Community: an example of a successful program


Program Director, Endocrinology, diabetes and metabolism fellowship
Director, Diversity on GME
University of Arizona College of Medicine, Creighton University and Mayo College of Medicine
Medical Director, AZ PACH
Editor Cureus, Dynamed, Journal of Investigative Medicine, Journal of General Internal Medicine
Outreach Unit Director, Endotext and Thyroid Manager
Board Member NHMA
LMSA Western Advisory Board
Disclosures

- No conflicts of interest to report
Vida Sana/Healthy Life: Improvements in health literacy and risk factors for metabolic syndrome after participating initiative at a free clinic for low-income, uninsured inner-city patients.

An example on how to help
Metabolic syndrome (MetS) is an increasingly common condition that can contribute to the development of type 2 diabetes (T2D) and cardiovascular disease. These individuals are twice as likely to experience adverse CV events, and are four times as likely to develop T2D. The prevalence is disproportionately affecting underserved and minorities communities, with negative long-term outcomes.

The risk factors for MetS include HTN, abdominal obesity, IR, elevated fasting glucose and triglycerides, and decreased HDL.
Background

- US Hispanic populations
  - higher risk of behavioral and metabolic risk factors
  - higher risk for cardiovascular disease and diabetes due to the prevalence of metabolic syndrome
  - lower access to health screening and care than other groups
  - represents a variety of cultures, birth places and levels of socioeconomic status.
  - higher risk of hypertension, diabetes, obesity, and had higher mean total cholesterol, and triglycerides and lower mean HDL levels compared to non-Hispanic White populations (NHW)
Background

- Among MetS criteria in 2007–2012 data compared with NHW/M
  - Mexican American women have higher risk of high waist circumference, lower HDL and higher fasting blood glucose
  - Mexican American men have higher risk of fasting blood glucose
- The prevalence of MetS rose approximately 38% from 1988 to 1994 to 2007–2017 among adults living in the United States
- More than a third of the population of US adults met the clinical criteria for MetS in 2012
Background

• US Hispanic behavioral risk factor compared with NHW
  ▫ Overall smoking and alcohol consumption are lower
  ▫ Sedentary behaviors and physically inactive are higher
• Dietary habits of recent Hispanic immigrants are healthier than NHW, but become similar with acculturation
  ▫ More than half (53%) of Hispanics drink sugary soda daily or weekly as compared to about a third (37%) of NHW according to a nationally-representative bilingual survey
  ▫ Hispanics were also less than half than NHW to report eating five or more servings of fruits and vegetables on average per day
Background

- Higher prevalence of diabetes among Hispanics compared with NHW
  - more problematic by the fact that as much as 40% of diabetes among this group is undiagnosed
- Community-based interventions inform and engage community members at risk for metabolic syndrome associated diseases about simple ways to manage their diseases and modify their diet and exercise regimens, which may result in lower risks of morbidity and costs of care
Background

- Intervention connections to the community are especially important
  - Though behavioral risks for Hispanics are clear, these may stem from broader environmental factors.
  - Socioeconomic barriers, lifestyle and relative accessibility to grocery stores stocked with nutritious foods contribute to these disparities
  - 15.8% of Hispanic families experienced food insecurity
    - associated with poor dietary quality and higher rates of obesity overall
Clinic
Background

- The Vida Sana/Healthy Life intervention is based on the tenets of social cognitive theory, a behavioral intervention model that has been recognized for its effectiveness in producing lasting change in similar populations with health disparities
  - uses materials developed by Dr. Susan Oliverio, of the Institute for Education on Health and Research
  - Dr. Oliverio’s “Thumbs Up!” metabolic syndrome workbook and associated presentation and discussion materials were specifically developed for low English proficiency populations
  - Modified and adapted at Clinica esperanza to be administered by peer educators known as “Navegantes”
Vida Sana's visual depictions of healthy and unhealthy numbers in the Thumbs Up! materials.
Background

- **Vida Sana Program**
  - entire program spanned 8-weeks
- **Participants are screened for metabolic syndrome (at the initiation and close of the program)**
  - They come from the clinic or refer from outside
  - participated in health focused social activities
  - Follow up by ”Navegantes”
  - Received monetary compensation ($10 at the beginning, end and follow up)
    - Childcare is available
Background

- Program is provided in 2-h group sessions by Navegantes
- The groups involve approximately 70% discussion and 30% sharing of information, using Thumbs Up! course materials
- Offered in small groups (10–18 participants) in Spanish
  - designed to develop and sustain healthy social norms and support by integrating teaching, learning and motivation with the social and community setting
Background

• "Navegantes" are trained community health-workers who live in the communities that the Clinic’s patients also live in and represent similar ethnic backgrounds.
• Create a mutually supportive, engaging environment for participants, through the use of group games and story-telling, while also celebrating accomplishments with certificates
  ▫ In preparation for their role as peer educators, the “Navegantes” participated in an extensive 10-week training program
    • teaches skills related to health care case management
    • medical interpretation
    • lifestyle coaching for Vida Sana program
    • diabetes prevention programs
    • Medical interpretation
Methods

- First visit
  - Navegantes administer a health literacy survey
    - survey assess participants’ knowledge of chronic conditions such as T2D and cardiovascular
  - Navegantes record the weight, BMI, blood glucose, LDL cholesterol, waist circumference, and blood pressure
- Next meetings
  - Navegantes use the Vida Sana curriculum materials to introduce the participants to topics related to health issues and lifestyle choices
  - Social event
- Final session
  - assess the impact of the program on metabolic syndrome indicators
Methods

• 138 patients have participated in Vida Sana (up to now)
  ▫ Majority of them Hispanic (Spanish speaking) and immigrant
• 47% of participants who have completed the course were either pre-diabetic or diabetic.
  ▫ Participants’ weight, BMI, waist circumference, blood glucose, total cholesterol, and blood pressure were measured at the first and the last sessions
Preliminary Results

Among the 138 patients who began the course,
- 78 (57%) completed at least 6 of 8 sessions and provided data at the last session.
- Among those who took the pre-test and the post-test, 69% scored higher on the post-test.
- Among those who completed the course, 69% had maintenance or loss of weight and average weight change was a loss of 1.85 lbs.
  - Average change in BMI at 8 weeks was a loss of 0.34 kg/m².
  - 79% had maintenance or loss of waist circumference with an average change of a loss of 0.83 inches
Preliminary Results

- 67% had maintenance or loss of A1c with the average change being a decrease of 0.09%.
- 55% had maintenance or improvement of blood glucose with an average change of a decrease of 5.69 mg/dL.
- 70% had maintenance or improvement of total cholesterol with an average change of a decrease by 5.12 mg/dL.
- 74% had maintenance or improvement in systolic blood pressure with an average change of a decrease of 4.81 mmHg.
- 69% had maintenance or improvement in diastolic blood pressure with an average change of a decrease of 1.42 mmHg.
Conclusion (preliminary)

- The *Vida Sana* initiative at a free clinic in an inner-city population improved the health literacy of the majority of its participants.
- At 8-weeks, more than half of participants had improved scores on a health literacy test and saw maintenance or improvement of weight, BMI, waist circumference, A1c, blood sugar, total cholesterol, and blood pressure.
- One of the limitation is that we don’t have a comparison group.
- Use of Telehealth to reach more people (working on).
- Plan to expand this program to 5 inner cities with high Hispanic population (working on).
Acknowledge

- Dr. Annie DeGroot (mentor)
- Alexandra Villasante
- Valerie Joseph
- Sravanthi Madala
- Christopher Tessier
- Navegantes
- Clinica Esperanza staff and providers
- Board and Staff of AZ PACH
Empowering yourself

- Expansion of the program
- Participation from medical student to physician in public health, research and community outreach
- Multiple opportunities to help
- Join together with other student group in the Phoenix Valley
  - Stronger together we can make the difference
- Get involved in organized medicine and advocate for our communities
- NHMA, etc
Thanks for your attention
riccorrea20@hotmail.com
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Thursday, September 10: Boston & Phoenix Chapters
*Diabetes in the Latino/Hispanic Population–Challenges & Opportunities*
7:00 PM - 8:15 PM ET

Wednesday, September 16: Chicago & Indianapolis Chapters
*COVID-19 & Diversity in Health Care*
7:00 PM - 8:15 PM ET

Wednesday, October 14: New York City & Philadelphia Chapters
*COVID-19 Impacts on Latinos & Reflections from the Frontlines*
7:00 PM - 8:15 PM ET

Thursday, October 15: Gulf Coast Chapter
*Update on Latest Science on COVID-19: Results of Research Trials from Academic Centers in the Region & Response of Medical Training Programs*
7:00 PM - 8:15 PM ET

Thursday, October 15: El Paso, Rio Grande Valley, & San Antonio Chapters
*Impact of COVID-19 on Border Communities*
2:00 PM - 4:00 PM ET

Tuesday, October 20: DC Metro Area Chapter
*COVID-19 & Health Literacy*
7:00 PM - 8:15 PM ET

Thursday, October 22: Miami Chapter
*Physician Activists for Immigrants in Detention Centers*
7:00 PM - 8:15 PM ET

Thursday, October 29: Northern & Southern California Chapters
*COVID-19, Heart Disease, & Health Care Workforce*
6:00 PM - 8:00 PM ET