Disparities in Physician Counseling for Lifestyle Modification: Insights from the Dallas Heart Study

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Disclosures

Tiffany M. Powell: None

Kamakki Banks: None

Colby R. Ayers: None

James A. de Lemos:
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   Consultant/Advisory Board (AstraZeneca)

Sandeep R. Das: None
Obesity as a Public Health Issue

- Prevalence of obesity is over 30% in U.S.
  - Associated with increased incidence of CVD and lifetime risk of CV events
  - Steadily increased with recent plateau
  - Physician counseling essential to combat obesity
  - Counseling about lifestyle modification necessary

www.cdc.gov; Ogden CL et al. JAMA 2006; Flegal KM et al. JAMA 2010
Physician Counseling for Obese Patients

• Guidelines advocate counseling on:
  – Weight loss
  – Physical Activity

• Physicians are not counseling on guideline-based lifestyle modification

• Counseling appears to target those with chronic diseases

• Other potential explanations unknown

Klein S et al., Circulation 2004; Ko JY et al. Preventive Medicine 2008
The Dallas Heart Study (DHS)

• Probability-based population sample of Dallas County residents (N=6,101)
• Ages 18-65 years
• Ethnically diverse (50% African American, 30% White, 20% Hispanic)
• Sample weights calculated to allow inferences for the population of Dallas County
DHS Data Collection

• Home visit
  – Demographics
  – Anthropometric measures
  – Survey (physician counseling, health beliefs & behaviors)

• Lab visit for blood and urine testing

• Imaging visit including cardiac MRI and DEXA scan
Objectives

• Characterize obese DHS participants based on prevalent CVD risk factors

• Compare physician counseling about lifestyle modification in obese participants:
  – With CVD risk factors (HTN, HLD, DM)
  – Without CVD risk factors

• Determine potential explanations for differences in physician counseling
Study Population

- 6101 DHS Participants
  - Excluded: 119 participants with ethnicity other than Black, White or Hispanic

- 5892 DHS Participants
  - Excluded: 3811 participants with BMI < 30
  - 721 participants missing data on CV risk factors

  - BMI ≥ 30
    - 1360 DHS Participants

  - CVD Risk Factors
    - 778 Participants

  - No CVD Risk Factors
    - 582 Participants
# Demographics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>No CVD Risk Factors (N=582)</th>
<th>CVD Risk Factors (N=778)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>383 (66%)</td>
<td>496 (64%)</td>
<td>0.5</td>
</tr>
<tr>
<td>Age (yrs)</td>
<td>39.6 ± 8.5</td>
<td>48.2 ± 9.0</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>African American</td>
<td>290 (50%)</td>
<td>515 (66%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Caucasian</td>
<td>161 (28%)</td>
<td>168 (22%)</td>
<td>0.01</td>
</tr>
<tr>
<td>Hispanic</td>
<td>131 (23%)</td>
<td>95 (12%)</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>
Cardiovascular Risk Factors

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>CVD Risk Factors (N=778)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>637 (82%)</td>
</tr>
<tr>
<td>↑ Cholesterol</td>
<td>202 (26%)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>268 (34%)</td>
</tr>
<tr>
<td>Family History of Premature MI</td>
<td>110 (14%)</td>
</tr>
<tr>
<td>Current Smoker</td>
<td>132 (23%)</td>
</tr>
</tbody>
</table>
## Anthropometric Measures

<table>
<thead>
<tr>
<th>Measurement</th>
<th>No CVD Risk Factors (N=582)</th>
<th>CVD Risk Factors (N=778)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI (kg/m²)</td>
<td>35.8 ± 5.5</td>
<td>36.8 ± 5.9</td>
<td>0.004</td>
</tr>
<tr>
<td>Lean Body Mass (kg)</td>
<td>60.0 ± 12.0</td>
<td>61.4 ± 11.7</td>
<td>0.05</td>
</tr>
<tr>
<td>Waist Circumference (cm)</td>
<td>110.3 ± 13.2</td>
<td>115.3 ± 14.1</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Waist-Hip Ratio</td>
<td>0.91 ± 0.09</td>
<td>0.94 ± 0.13</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>
Physician Visits

No CVD Risk Factors

- No Visits in 12 months: 28%
- 1-2 Visits in 12 months: 30%
- ≥ 3 Visits in 12 months: 42%

CVD Risk Factors

- No Visits in 12 months: 20%
- 1-2 Visits in 12 months: 33%
- ≥ 3 Visits in 12 months: 47%
Obese Men in DHS Counseled to Lose Weight

<table>
<thead>
<tr>
<th>Race</th>
<th>No CVD Risk Factors</th>
<th>CVD Risk Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>53%</td>
<td>72%</td>
</tr>
<tr>
<td>African American</td>
<td>44%</td>
<td>74% *</td>
</tr>
<tr>
<td>Hispanic</td>
<td>48%</td>
<td>70%</td>
</tr>
</tbody>
</table>

*p<0.05 by Fisher’s Exact Test

# Only those with MD visit in last 12 months
Obese Women in DHS Counseled to Lose Weight

- Caucasian: 76% No CVD Risk Factors, 77% CVD Risk Factors
- African American: 54% No CVD Risk Factors, 80% * CVD Risk Factors
- Hispanic: 51% No CVD Risk Factors, 83% * CVD Risk Factors

*p<0.05 by Fisher’s Exact Test

# Only those with MD visit in last 12 months
Obese Men in DHS Counseled to Exercise

<table>
<thead>
<tr>
<th>Race</th>
<th>No CVD Risk Factors</th>
<th>CVD Risk Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasian</td>
<td>57%</td>
<td>64%</td>
</tr>
<tr>
<td>African American</td>
<td>41%</td>
<td>74% *</td>
</tr>
<tr>
<td>Hispanic</td>
<td>48%</td>
<td>74%</td>
</tr>
</tbody>
</table>

*p<0.05 by Fisher’s Exact Test

# Only those with MD visit in last 12 months
Obese Women in DHS Counseled to Exercise

Percentage of Subjects (%)

<table>
<thead>
<tr>
<th></th>
<th>Caucasian</th>
<th>African American</th>
<th>Hispanic</th>
</tr>
</thead>
<tbody>
<tr>
<td>No CVD Risk Factors</td>
<td>66%</td>
<td>54%</td>
<td>46%</td>
</tr>
<tr>
<td>CVD Risk Factors</td>
<td>80%</td>
<td>80% *</td>
<td>82% *</td>
</tr>
</tbody>
</table>

*p<0.05 by Fisher’s Exact Test

# Only those with MD visit in last 12 months
Socioeconomic Status

Without CVD Risk Factors

Income < 16K: 39%  
Income 16K-30K: 48%  
Income > 30K: 43%

p=0.09

≤ High School: 42%  
Some College: 45%  
College Grad: 42%

p=0.5

Without CVD Risk Factors
## Access to Health Care System

<table>
<thead>
<tr>
<th>Characteristic</th>
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<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of Insurance over 12 months</td>
<td>81* (20%)</td>
<td>113* (19%)</td>
<td>0.57</td>
</tr>
<tr>
<td>No Doctor Visit over 12 months due to Cost</td>
<td>126 (22%)</td>
<td>149 (19%)</td>
<td>0.28</td>
</tr>
</tbody>
</table>

*N= 405 with no CVD risk factors, N= 609 with CVD risk factors*
# Rating of General Health

<table>
<thead>
<tr>
<th>Rating</th>
<th>No CVD Risk Factors (N=582)</th>
<th>CVD Risk Factors (N=778)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>43 (7%)</td>
<td>37 (5%)</td>
<td>0.05</td>
</tr>
<tr>
<td>Very Good</td>
<td>166 (29%)</td>
<td>177 (23%)</td>
<td>0.02</td>
</tr>
<tr>
<td>Good</td>
<td>232 (40%)</td>
<td>263 (34%)</td>
<td>0.02</td>
</tr>
<tr>
<td>Fair</td>
<td>123 (22%)</td>
<td>238 (31%)</td>
<td>0.00002</td>
</tr>
<tr>
<td>Poor</td>
<td>13 (2%)</td>
<td>59 (8%)</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>
## Health Risk Beliefs

<table>
<thead>
<tr>
<th>Perceived Lifetime Risk</th>
<th>No CVD Risk Factors (N=582)</th>
<th>CVD Risk Factors (N=778)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low risk of MI</td>
<td>304 (53%)</td>
<td>267 (35%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Low risk of Diabetes</td>
<td>314 (55%)</td>
<td>290 (38%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Low risk of HTN</td>
<td>259 (46%)</td>
<td>164 (22%)</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>
Summary

• Obese individuals without CVD risk factors are less likely to see physicians

• SES or lack of insurance do not explain differences in physician visits

• Those without CVD risk factors are less likely to receive counseling about lifestyle modification
  • Physical activity
  • Weight loss
Summary

• Obese individuals without CVD risk factors:
  – Rate general health better
  – Perceive low lifetime risk for CV events or risk factors

• Those without other chronic diseases may not recognize obesity as cardiac risk factor

• Physicians may not see a need to counsel all patients with obesity about lifestyle changes
Implications

- Physician counseling on lifestyle modification is underutilized in combating obesity
- Disparities exist in perceived lifetime risk among obese
- Education efforts focused on both physicians and patients
- Community-based programs targeting those who avoid the health care system
Thank You