WEIGHT MANAGEMENT BEHAVIORS AMONG MEXICAN AMERICAN YOUTH: VARIATION BY TIMING OF GROWTH AND MATURATION

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Rationale

• Little is known about weight management behaviors (WMB) among youth

• Mexican American youth have higher rates of overweight and obesity

• Determinants of WMB are multifactorial
Aims

1) Assess the association between estimated age at peak height velocity with WMB among boys and girls

2) Examine the relationship between timing of menarche in Mexican American girls with WMB
Student and School Characteristics

- South Texas students enrolled in grades 4 through 12
- 34.5% poverty rate for the county
- Oversampled middle school students
- 99% Hispanic
- 640 students participated
  - 195 from elementary schools
  - 400 from middle schools
  - 45 from high schools.
Measures

- 85\textsuperscript{th} percentile of weight for age and sex
- Calculated maturity offset to estimate age at peak height velocity (Mirwald et al., 2002; Moore et al., 2015)
- Age at menarche
- WMB during past 30 days
  - perceived weight status
  - exercise to lose weight
  - eat less food/fewer calories
  - foods low in fat
  - go without eating for 24 hours or more
  - take any diet pills/powders/liquids
  - vomit or take laxatives
Primary Aims Analysis Plan

- Descriptive statistics and bivariate associations
- Separate multiple logistic regression analyses to model likelihood of engaging in weight management behaviors by
  - estimated age at PHV
  - timing of menarche (female students only)
Sample Characteristics (%)
## Bivariate Associations

<table>
<thead>
<tr>
<th></th>
<th>BMI Percentile</th>
<th></th>
<th></th>
<th>( \chi^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;85.0 (n=258)</td>
<td>≥85.0 (n=382)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Growth Status</strong></td>
<td></td>
<td></td>
<td></td>
<td>12.884**</td>
</tr>
<tr>
<td>Pre-PHV</td>
<td>66.7</td>
<td>79.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-PHV</td>
<td>33.3</td>
<td>20.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Maturational Timing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-Menarche</td>
<td>53.8</td>
<td>57.1</td>
<td></td>
<td>4.741</td>
</tr>
<tr>
<td>Early Maturation (&lt;11.8 years at menarche)</td>
<td>25.9</td>
<td>31.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Maturation (11.8 to 13.8 years)</td>
<td>20.3</td>
<td>11.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weight Management Behaviors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Describe self as slightly or very overweight</td>
<td>6.2</td>
<td>51.8</td>
<td></td>
<td>142.157***</td>
</tr>
<tr>
<td>Trying to lose weight</td>
<td>26.0</td>
<td>76.4</td>
<td></td>
<td>159.273***</td>
</tr>
<tr>
<td>Exercising to lose weight</td>
<td>58.1</td>
<td>85.6</td>
<td></td>
<td>61.184***</td>
</tr>
<tr>
<td>Restricting calories</td>
<td>36.5</td>
<td>63.8</td>
<td></td>
<td>45.716***</td>
</tr>
<tr>
<td>Fasted for 24 hours or more to lose weight†</td>
<td>9.0</td>
<td>17.1</td>
<td></td>
<td>5.801*</td>
</tr>
<tr>
<td>Taken diet pills, powders or liquids†</td>
<td>1.7</td>
<td>2.7</td>
<td></td>
<td>0.449</td>
</tr>
<tr>
<td>Vomited or taken laxatives†</td>
<td>0.6</td>
<td>4.2</td>
<td></td>
<td>5.167*</td>
</tr>
</tbody>
</table>
Models were adjusted for weight status (≥85th percentile or <85th percentile in weight for age).
Maturation Status and Weight Management Behaviors

Models were adjusted for weight status (≥85th percentile or <85th percentile in weight for age)
## Differences in PHV Equations

<table>
<thead>
<tr>
<th></th>
<th>Boys Pre-PHV</th>
<th>Boys Post-PHV</th>
<th>Girls Pre-PHV</th>
<th>Girls Post-PHV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mirwald et al., 2002</td>
<td>129</td>
<td>83</td>
<td>95</td>
<td>146</td>
</tr>
<tr>
<td>Moore et al., 2015</td>
<td>170</td>
<td>50</td>
<td>111</td>
<td>114</td>
</tr>
</tbody>
</table>

More students classified as pre-PHV with new equations
Primary Limitations

- Cross-sectional data
- Maturity offset

Strengths

- Focus on Hispanic youth
- Oversampling of middle school students
Conclusions

• Growth-related changes in body shape and size may influence weight control behaviors

• Overweight and obesity may mask growth-related changes in body shape and size

• Explore timing of discussions related to weight among youth
Thank you!