Is Type 2 Diabetes Really Binge Eating Disorder?

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University of Minnesota
Why are we talking about binge eating?
Obesity Trends* Among U.S. Adults
BRFSS, 1990, 1995, 2005
(*BMI ≥ 30, or about 30 lbs overweight for 5’4” person)
Lifetime Community Prevalence of Eating Disorders

Females
NCS-R
N=9,282

Males

Hudson et al, 2006    Biol. Psychiatry
What percentage of your obese patients have binge eating?

Crow et al, 2004

<table>
<thead>
<tr>
<th>% of Primary Care MD’s</th>
<th>0-20%</th>
<th>21-40%</th>
<th>41-100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never Assessed</td>
<td>41.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-20%</td>
<td>42.8%</td>
<td>11.7%</td>
<td>3.9%</td>
</tr>
</tbody>
</table>
Initial Description of BED

- “such eating often has an orgiastic quality, and enormous amounts of food may be consumed in relatively short periods.”

Stunkard et al, 1959
Binge Eating Disorder

- Eating Binges
  - Large amount of food
  - Loss of control
- Binge eating 2 days/wk x 6 mos.
- Marked Distress
- Also
  - Eating much more rapidly than normal
  - Eating until uncomfortably full
  - Eating when not hungry
  - Eating alone due to embarrassment
  - Feeling disgusted with oneself
- No compensatory behaviors
<table>
<thead>
<tr>
<th>Study</th>
<th>Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yanovski et al (1992)</td>
<td>2963 kcal</td>
</tr>
<tr>
<td>Goldfein et al (1993)</td>
<td>1574 kcal</td>
</tr>
<tr>
<td>Guss et al (1994)</td>
<td>1575 kcal</td>
</tr>
<tr>
<td>Yanovskı &amp; Sebring (1994)</td>
<td>1586 kcal</td>
</tr>
</tbody>
</table>
Binge Eating - Example

- 2 Ham Sandwiches
- Banana
- Full Package of Oreo Cookies
- 4 oz. Cheese
Binge Eating - Example

- Double Cheesburger
- Large Fries
- Large Chocolate Shake
- 4 Scoops Ice Cream
- Large Bag Corn Chips
BED as a Familial Entity

O.R 2.2 (95% GI 1.4-3.6; p < .0001

Hudson et al, Arch Gen Psychiatry 2006:63:313-319
Severe Obesity Among Family Members – BED vs Non-BED

Current

<table>
<thead>
<tr>
<th></th>
<th>BED</th>
<th>Non-BED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td>17.4%</td>
<td>4.1%</td>
</tr>
</tbody>
</table>

Lifetime

<table>
<thead>
<tr>
<th></th>
<th>BED</th>
<th>Non-BED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifetime</td>
<td>36.6%</td>
<td>7.8%</td>
</tr>
</tbody>
</table>

Note: Severe Obesity = BMI ≥ 40

Hudson et al, Arch Gen Psychiatry 2006:63:313-319
Binge Eating and Diabetes
Type 2 Diabetes Mellitus & BED

Kenardy et al, 1994
BED in Type 2 DM

Int. J. Eat Disorders 30:222-6, 2001
Crow, SJ, Kendall D, Praus B, & Thuras P

N=43 DM clinic patients with Type 2 DM
Assessed with SCID
    TFEQ
    Kolotkin Impact of Weight Scale
## Results

<table>
<thead>
<tr>
<th></th>
<th>BED</th>
<th>Non BED</th>
</tr>
</thead>
<tbody>
<tr>
<td>%(n)</td>
<td>25.6% (11)</td>
<td>74.4% (32)</td>
</tr>
</tbody>
</table>
| HbA1C          | 8.1% (+1.9%)            | 8.4% (+12%)              | p = .553
Table 2. Kolotkin subscales

<table>
<thead>
<tr>
<th>Subscale</th>
<th>BED (M, SD)</th>
<th>Non-BED (M, SD)</th>
<th>F (df)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td>23.2 (6.7)</td>
<td>10.3 (4.6)</td>
<td>(1, 35) = 4.14</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Eating</td>
<td>30.7 (3.7)</td>
<td>30.8 (5.2)</td>
<td>(1, 35) = 0.001</td>
<td>.982</td>
</tr>
<tr>
<td>Esteem</td>
<td>32.7 (11.7)</td>
<td>16.0 (9.0)</td>
<td>(1, 35) = 20.3</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Health</td>
<td>43.4 (7.2)</td>
<td>31.4 (9.4)</td>
<td>(1, 35) = 12.3</td>
<td>.001</td>
</tr>
<tr>
<td>Mobility</td>
<td>38.7 (5.1)</td>
<td>17.6 (11.2)</td>
<td>(1, 35) = 29.8</td>
<td>.001</td>
</tr>
<tr>
<td>Sex</td>
<td>19.0 (6.0)</td>
<td>10.8 (6.9)</td>
<td>(1, 35) = 10.3</td>
<td>.003</td>
</tr>
<tr>
<td>Social</td>
<td>28.2 (8.7)</td>
<td>15.5 (6.0)</td>
<td>(1, 35) = 24.0</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>Work</td>
<td>15.9 (4.7)</td>
<td>9.9 (4.4)</td>
<td>(1, 35) = 9.7</td>
<td>.004</td>
</tr>
</tbody>
</table>

Note: BED = binge eating disorder.
Binge Eating and Night Eating in Type 2 Diabetes Mellitus

Kelly C. Allison, Ph.D.1 Scott J. Crow, M.D.2, Rebecca R. Reeves Dr.PH., R.D.3, Delia Smith West, Ph.D.4, John P. Foreyt, Ph.D.3, Vicki G. DiLillo, Ph.D.5, Thomas A. Wadden, Ph.D.1, Robert W. Jeffery, Ph.D.2, Brent Van Dorsten, Ph.D.6, Albert J. Stunkard, M.D.1

1University of Pennsylvania School of Medicine, 2University of Minnesota, 3Baylor College of Medicine, 4University of Arkansas, 5Ohio Wesleyan University, 6University of Colorado at Denver and Health Sciences Center
Subjects

- 845 Look AHEAD participants at one of 4 sites
- Approached at pre-randomization or group orientation
Screen Positive: 5.6%
Interview Positive: 1.4%
Comparison of IWQOL-Lite subscale and total scores for the BED and non-BED participants

Rieger E, Int J Eat Dis., 37:3 234-240, 2005
A Potential Model:

- Binge Eating (BE) onset in adolescents
  - Adiposity
  - Direct effects of BE on glycemic control
- In mid to later adulthood
  - BE remits
  - Complication of BE do not remit (ie, DM)
BED Treatment

1. Behavioral weight loss
2. Psychotherapy
3. Pharmacotherapy
4. (Gastric Bypass)
5. Others?