Psychological Impact of Living With Severe Obesity

6th Conference on Recent Advances in the Prevention and Treatment of Childhood and Adolescent Obesity: Understanding the Interplay Between Physical and Mental Health

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Pediatric Obesity = Public Health Crisis

- Prevalence rates increased world-wide
- Few spared of risk
  - Across age range
  - Race/ethnic groups
  - Socioeconomic status
  - Some in disproportionate ways
Figure 1. Trends in childhood obesity among children and adolescents aged 3–19 in Canada and the United States

<table>
<thead>
<tr>
<th>Year</th>
<th>United States</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976–1980</td>
<td></td>
<td>5.0</td>
</tr>
<tr>
<td>1978–1979</td>
<td></td>
<td>5.6</td>
</tr>
<tr>
<td>2001–2004</td>
<td>16.6</td>
<td>12.4</td>
</tr>
<tr>
<td>2009–2012</td>
<td>17.5</td>
<td>13.0</td>
</tr>
</tbody>
</table>

1Statistically significant difference compared with Canada, $p < 0.001$.

NOTE: Pregnant girls are excluded.

Figure 3. Childhood obesity among children and adolescents aged 3–19, by sex and age: Canada, 2009–2013, and United States, 2009–2012

1Use with caution (coefficient of variation between 16.6% and 33.3% for the Canadian Health Measures Survey). The coefficient of variation is obtained by dividing the standard error of the estimate by the estimate itself, and it is expressed as a percentage of the estimate.

2Statistically significant difference compared with Canada, p < 0.001.

NOTE: Pregnant girls are excluded.

Hallmark of the pediatric obesity epidemic

• Increased prevalence of severe obesity

• Fastest growing subcategory of excess weight status in US
  – 1.7 percent of preschool children
  – 4.3 percent of school-aged children
  – 9.1 percent of adolescent girls
  – 9.2 percent of adolescent boys

  Ogden, *JAMA*, 2016

• Without effective intervention, the vast majority will be adults with severe obesity
Complications of Childhood Obesity

Neurological
- Pseudotumor cerebri
- Risk for stroke

Cardiovascular
- Dyslipidemia
- Hypertension
- Left ventricular hypertrophy
- Chronic inflammation
- Endothelial dysfunction
- Risk of coronary disease

Pulmonary
- Asthma
- Sleep apnea
- Exercise intolerance

Renal
- Glomerulosclerosis
- Proteinuria

Gastrointestinal
- Pancreatitis
- Steatohepatitis
- Liver fibrosis
- Gallstones
- Risk for cirrhosis
- Risk for colon cancer

Endocrine
- Type 2 diabetes
- Precocious puberty
- Polycystic ovary syndrome (girls)
- Hypogonadism (boys)

Musculoskeletal
- Forearm fracture
- Blount’s disease
- Slipped capital femoral epiphysis
- Flat feet
- Risk for degenerative joint disease

Hernia

DVT/PE

Stress incontinence

Risk of GYN malignancy
The greater toll of pediatric obesity... may be psychosocial health, not physical health.

- Blatantly visible
- Highly stigmatized
- Impacts day-to-day life independent of and/or prior to any health effects
Objectives

• Overview of the psychosocial correlates of pediatric severe obesity – *adolescents*

• Understand for whom risks are greater

• Implications for clinical care
1ST - DEFINE SOME TERMS
Terminology for excess weight

• Defined differently over time
• Different reference data sets (WHO, CDC, IOTF)
• Mutually exclusive groups or includes others?
• Severe obesity
  – $\geq 99^{th}$ percentile
  – $\text{BMI} \geq 120\%$ of the $95^{th}$ percentile OR Class 2 ($\text{BMI} 35-39.9 \text{ kg/m}^2$)
  – $\text{BMI} \geq 40\text{kg/m}^2$ (Class 3) often used in bariatric surgery literature
What is Teen-LABS?

- A cooperative agreement funded by NIH/NIDDK (UM1)
  - PI (Clinical): Thomas H. Inge, MD, PhD
  - PI (Data Center): C Ralph Buncher, Sc.D.

- 5 center adolescent bariatric research consortium
  - Cincinnati Children’s Hospital Medical Center
  - Nationwide Children’s Hospital (Columbus, OH)
  - Texas Children’s Hospital (Houston, TX)
  - University of Pittsburgh Medical Center
  - University of Alabama-Birmingham

- [http://www.teen-labs.org](http://www.teen-labs.org)
What is Teen-LABS?

• Prospective, longitudinal cohort observational study

• Document the safety of bariatric surgery in adolescence and the post-operative health and quality of life outcomes at 6-, 12-months and the annually

• 242 adolescents (age ≤19)
  – Consecutive patients 2007-2012
  – Participants receive standard clinical care
  – Majority Roux-en-Y gastric bypass
Teen-LABS Ancillary Research

• **TeenView Series**
  - R01DK080020 (fully executed); R01DA033415; 2R01DK080020
  - Prospective, controlled, longitudinal design focused on psychosocial health and emerging risks

• **Following two parallel cohorts of adolescents to young adulthood**
  - Teen-LABS participants (ages 13-18)
  - Adolescent comparison group
    - Demographically similar
    - BMI > 40
    - Non-operative
    - Recruited from the Teen-LABS sites
  - Primary caregiver (female)
  - Baseline (pre-surgery), 6-, 12-, 24-, 36-, 48-, and 72 months

**Critical context**
Eligibility: BMI $\geq 40$kg/m$^2$  
Age 13-18 years  
Caregiver participates  

N = 141 Teen-LABS  
88.7% of approached  
$M_{BMI} = 51.5 \pm 8.3^*$  
$M_{age} = 16.9 \pm 1.4^*$  
79.9% female  
66.2% White  
7.2% Hispanic  

N = 83 Non-surgical  
96.5% of approached  
$M_{BMI} = 46.9 \pm 6.1^*$  
$M_{age} = 16.1 \pm 1.4^*$  
81.9% female  
54.2% White  
6.0% Hispanic
• Work with adolescents with severe obesity?
• Work with adolescents undergoing bariatric surgery?
• Believe the majority of adolescents with severe obesity are experiencing significant psychosocial impairment? A minority?
• Believe something bad (i.e., abuse) must have happened?
• How many of you were adolescents?
Areas of psychosocial burden

• Adjustment
  – Psychopathology
• Peer relations
  – victimization
• High Risk Behaviors
• Family Dysfunction
• High Risk Contexts
• Health-Related Quality of Life
Knowns: Psychopathology

- Literature is **equivocal** regarding depressive symptoms or other psychopathology being highly prevalent in pediatric obesity – when age-normative references are available.
Main outcomes – Psychopathology Prevalence
  – CBCL
  – YSR

Correlates
  – Binge Eating Disorder (BED) screen (QEWP-R)
  – Global self-worth (SPPA)
  – WRQOL (IWQOL-Kids)
  – Caregiver distress (SCL-90R)
  – Family dysfunction (FAD)

Rofey et al., *Obesity*, 2015
TeenView: Low Psychopathology

- **Mean scores** for all scales were in the *healthy* range based on age/gender normative samples.
- Only a *minority* had elevated psychopathology compared to age-normative reference values.
  - No higher than national base rates in National Comorbidity Study (40%).
- Non-surgical > surgical

Rofey et al., *Obesity*, 2015
TeenView: Low Psychopathology

Internalizing
- Clinical: 29%
- Nonclinical: 71%

Externalizing
- Clinical: 13%
- Nonclinical: 87%

Rofey et al., *Obesity*, 2015
What Predicts Psychopathology Risk?

• Being a non-surgical comparison
  – i.e., bariatric group less impaired
• Screening positive for BED
• Higher family dysfunction
• Greater impairment in WRQOL
• Living in a 2-caregiver home (?!)
  – Post hoc: single parent homes were primarily the biological mother, whereas 2-caregiver home was either biological and/or step-parents or a “non-traditional pairing” (one biological parent + grandparent, neither biological parent), with the non-traditional more likely to screen positive for psychopathology

Rofey et al., *Obesity*, 2015
Summary: Psychopathology

- Only a subgroup of adolescents with severe obesity present with psychopathology
- Rates are not different from national base rates
- Adolescents with psychopathology also have other psychosocial impairments as well as family environments which are more clinically dysfunctional, and may have experienced other adversities (divorce, parental death)

Clinical subgroup in both treatment settings in need of additional support

Rofey et al., Obesity (2015)
**Knowns: Impairment in Peer Relations**

- Weight is the most common reason for victimization, bullying and teasing among youth
  
  Puhl et al., *Pediatric Obesity*, 2015
  
  — Risk increases with BMI
  
  Puhl et al., *Pediatrics*, 2013

- Fewer friendships and social isolation
  

**BMI > 99th percentile not a focus**
Impairment in Peer Relations: Adolescents with Severe Obesity

• TeenView Study
  – Surgical group
  – Non-surgical group
• Pre-surgery/baseline
• Measures
  – Revised Peer Experiences Questionnaire
  – Youth Self-report
  – Harter Self Perception Profile
  – Children’s Social Support Questionnaire

Impairment in Peer Relations
Adolescents with Severe Obesity

• As a group, adolescents with severe obesity did not report high levels of victimization, with mean levels of victimization similar to the general adolescent literature
  – Relational (social exclusion)
  – Overt (confrontational)
  – Reputational (gossip, rumors)

• Non-surgical > relational victimization, internalizing, and externalizing symptoms

• All associations were in the expected direction
  – Victimization was associated with lower self-worth and poorer adjustment

Impairment in Peer Relations
Adolescents with Severe Obesity

• Only some adolescents reported experiencing victimization (as adolescents)

• Peer victimization was associated with feelings of lower self-worth

• Which in turn, led to greater to adjustment difficulties - internalizing & externalizing symptoms

• Social support was protective of these effects

Clinical subgroup in both treatment settings in need of additional support

Adolescence: High-Risk Behaviors

- Alcohol/tobacco/illicit drug use & risky sexual behavior increase across adolescence and peak in young adulthood.

While “normative” – are not benign, as for some youth they are precursors to negative health outcomes.
Severe Obesity: High-Risk Behaviors

- Nationally representative school-based sample
  - YRBSS 2007

- Compared odds of engagement of severely obese (n=410) vs. healthy weight (n=8,669)

  - Alcohol/tobacco/drug use behaviors were essentially similar (e.g., age at initiation, current use, or abuse)

  - Exceptions ...severe obesity associated with greater odds of
    - Ever having tried a cigarette
    - Females – being a current smoker
    - Males – first smoking before age 13

Ratcliff et al., Pediatrics, 2011
Substance Use Across the Excess Weight Status Spectrum

• Nationally representative school-based sample

• Compared odds of engagement in high risk behaviors across the excess weight status spectrum

• Healthy weight group as reference sample

• Pooled sample 2008 & 2009
  – N = 19,678
    • Grade 10 ($M_{age} = 16.07$ yrs)
    • 53% female
    • White, Black, Hispanic

• Self-reported heights/weights
  – Healthy = 14,261
  – Overweight = 3,012
  – Obese = 1,963
  – Severe = 442
Percent of 10th graders ever trying a cigarette

*p<0.05 when compared to healthy weight adolescents of the same race, controlling for gender and parental education.

Zeller et al., Childhood Obesity, 2015
Percent of 10th graders smoking a cigarette in past 30 days

* * *

*p<0.05 when compared to healthy weight adolescents of the same race, controlling for gender and parental education.

Zeller et al., Childhood Obesity, 2015
White teens with severe obesity: Tobacco

• 42% said some or all of their friends smoked
  – Healthy weight: 35%

• 32% saw low risk of harm in smoking ≥ 1 pack per day
  – Healthy weight: 25%

• 28% who had smoked did so for the first time before the 9th grade (i.e., 14 years or younger)
  – Healthy weight: 18%
White 10th graders: Percent who used alcohol, were drunk, or used marijuana/hashish in the past year

Zeller et al., Prevention Science, 2016
White 10th graders: Percent who used alcohol, got drunk, or used marijuana/hashish before 9th grade

Zeller et al., Prevention Science, 2016
White 10th graders: Percent who used inhalants or cocaine in the year

- Inhalants:
  - Healthy: 5.4%
  - Overweight: 6.5%
  - Obese: 6%
  - Severe: 8.9%

- Cocaine:
  - Healthy: 2.3%
  - Overweight: 2.9%
  - Obese: 2.6%
  - Severe: 3.5%

*p<0.05, **p<0.01 when compared to healthy weight adolescents of the same race, controlling for gender and parental education.

Zeller et al., Prevention Science, 2016
White 10th graders: Percent who used amphetamines, barbiturates, or tranquilizers in the past year

Zeller et al., Prevention Science, 2016
White teens of excess weight in general, and those of severe excess weight specifically, are high risk targets for tobacco and substance use monitoring and prevention messaging – EARLY!
In pediatric settings, the “patient” is the adolescent and the family.

The broader pediatric literature demonstrates that impaired family functioning impacts child health outcomes, particularly in pediatric conditions that are reliant on:

1. regimen adherence
2. lifestyle change
3. and/or treatment intensity

Pediatric weight management, including bariatric surgery
66-90% of female caregivers who seek weight management care for their obese child/adolescent are also obese, if not severely obese.
McMaster Approach to Families

- Roles
- Family Functioning
- Communication
- Affective Responsiveness
- Affective Involvement
- Problem Solving
- Behavior Control
Family Assessment Device (FAD)

• Based on McMaster Model
• 60-item measure
• 6 dimensions & General Functioning Summary Score
• Respondents rate their level of agreement/disagreement on a 4-point scale on specific family behaviors
• Caregiver and adolescent-report forms
• Clinical cut-off scores differentiating “healthy” versus “unhealthy” family functioning
• Strong psychometrics
Family Functioning in the Context of Pediatric Chronic Conditions (N=301)

Herzer et al., *J Dev Behav Pediatr*, 2010

**FAD_{Caregiver} General Functioning**

- Unhealthy
- Healthy

<table>
<thead>
<tr>
<th>Condition</th>
<th>Unhealthy</th>
<th>Healthy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy</td>
<td>24%</td>
<td>76%</td>
</tr>
<tr>
<td>Obesity</td>
<td>29%</td>
<td>71%</td>
</tr>
<tr>
<td>CF</td>
<td>22%</td>
<td>78%</td>
</tr>
<tr>
<td>SCD</td>
<td>32%</td>
<td>68%</td>
</tr>
<tr>
<td>IBD</td>
<td>26%</td>
<td>74%</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>23%</td>
<td>77%</td>
</tr>
</tbody>
</table>

No significant group differences
Families of Obese $\text{BMI} \geq 95\text{th}$ Youth: Unhealthy Domains

Herzer et al., *J Dev Behav Pediatr*, 2010

Mother report

- 46% Communication
- 36% Roles
- 50% Affective Involvement
- Problem Solving
- Behavior Control
- Affective Responsiveness

Family Functioning
TeenView: Unhealthy Family Functioning

Mother Report - FAD General Family Functioning

- **Bariatric**
  - Unhealthy: 62%
  - Healthy: 38%

- **Non-op**
  - Unhealthy: 47%
  - Healthy: 53%

Zeller et al., *Obesity*, 2016
Families of TeenView Bariatric: Unhealthy Domains

Zeller et al., *Obesity*, 2016

Mother report

- 28.5% Communication
- 44.5% Affective Involvement
- 48.9% Problem Solving
- 48.9% Behavior Control
- 48.9% Affective Responsiveness

Diagram showing the relationship between different domains of family functioning and unhealthy aspects.
Families of TeenView Non-Surgical: Unhealthy Domains

Zeller et al., *Obesity*, 2016

Mother report

- **Communication**: 48.2%*
- **Roles**: 61.4%*
- **Affective Involvement**: 61.4%*
- **Problem Solving**
- **Behavior Control**
- **Affective Responsiveness**
Adverse Family Experiences

• National Survey of Children’s Health 2011-2012
  – CDC

• Phone survey of US households
  – Subsample with youth ages 10-17 in home

• Parent reported
  – AFE
  – Height/weight

• 42,239 families
  – 68.7% Healthy, 15.6% overweight, 15.7% obese
Experiencing an AFE increased likelihood of being overweight or obese as adolescent

Experiencing 2 or more AFEs had 80% higher odds of obesity when compared with children who do not experience these events.
Knowns: Child Maltreatment (CM)

- CM: sexual and/or physical abuse, emotional and/or physical neglect, or emotional abuse
- **Strong evidence that CM increases obesity risk**
- Adult WLS literature
  - 2 out of 3 adult patients with severe obesity *retrospectively* report some type of CM
TeenView Child Maltreatment

• Rates of CM via Child Trauma Questionnaire
• Correlates of CM
  – Psychopathology
  – Body-esteem
  – WRQOL
  – Risky sexual behaviors
  – Family functioning
Adolescent girls with severe obesity: History of child maltreatment

- CM rates were higher in non-surgical group
- Correlates were similar for both cohorts
  - greater psychopathology, substance use, and family dysfunction, and lower quality of life.

While a minority of adolescents with severe obesity reported a CM history, they carry greater psychosocial burden into the clinical setting.

Journal of Pediatric Psychology, 40(7), 2015, 640–648
Health-Related Quality of Life

• Measures day-to-day functioning
• Comes directly from the patient
• Assesses how a patient feels or functions with respect to his or her health condition
  • Observable behaviors
  • Nonobservable perceptions
• Generic and condition-specific
  • e.g., weight/obesity (“WRQOL”)  
• Important patient reported outcome (PRO) to be used as primary or secondary endpoints in clinical trials
HRQOL (PedsQL) across pediatric chronic diseases

V = Varni, Limbers, & Burwinkle, 2007
I = Ingerski et al., 2010
Ext Obese = Zeller et al., 2009
Severe Obesity and Comorbid Condition Impact on the Weight-Related Quality of Life of the Adolescent Patient

Meg H. Zeller, PhD1, Thomas H. Inge, MD, PhD1, Avani C. Modi, PhD1, Todd M. Jenkins, PhD1, Marc P. Michalsky, MD2, Michael Helmrad, MD1, Anita Courcoulas, MD, MPH3, Carroll M. Harmon, MD, PhD4,5, Dana Rofey, PhD3, Amy Baughcum, PhD2, Heather Austin, PhD4, Karin Price, PhD6, Stavra A. Xanthakos, MD, MS1, Mary L. Brandt, MD6, Mary Horlick, MD7, and Ralph Boucher, ScD8, on behalf of the Teen Longitudinal Assessment of Bariatric Surgery (Teen-LABS) Consortium*

• N= 242 Adolescents
  – Mdn BMI = 50.5 kg/m²
  – Mean age  = 17.1 years
  – 75.6% female
  – 71.9% White
  – WRQOL via the IWQOL-Kids
Figure 1. IWQOL-Kids Total scores from published studies of healthy weight, overweight, obese, severely obese, and Teen-LABS adolescents.
Severe Obesity and Comorbid Condition Impact on the Weight-Related Quality of Life of the Adolescent Patient

Meg H. Zeller, PhD¹, Thomas H. Inge, MD, PhD¹, Avani C. Modi, PhD¹, Todd M. Jenkins, PhD¹, Marc P. Michalsky, MD², Michael Helmarath, MD¹, Anita Courcoulas, MD, MPH³, Carroll M. Harmon, MD, PhD⁴, Dana Rofey, PhD³, Amy Baughcum, PhD⁵, Heather Austin, PhD⁶, Karin Price, PhD⁶, Stavra A. Xanthakos, MD, MS¹, Mary L. Brandt, MD⁶, Mary Horlick, MD⁷, and Ralph Buncher, ScD⁸, on behalf of the Teen Longitudinal Assessment of Bariatric Surgery (Teen-LABS) Consortium

• N= 242 Adolescents
  – Mdn BMI = 50.5 kg/m²
  – Mean age = 17.1 years
  – 75.6% female
  – 71.9% White
  – WRQOL
    – Assessment of 16 comorbid conditions prior to WLS
    – Comorbidity Load = estimate of burden
• Prevalence estimates and impact on WRQOL
<table>
<thead>
<tr>
<th>Comorbid Conditions [% (n)]</th>
<th>Total (N=242)</th>
<th>Females (n=183)</th>
<th>Males (n=59)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dyslipidemia</td>
<td>74.4 (180)</td>
<td>70.5 (129)</td>
<td>86.4 (51)</td>
<td>0.01</td>
</tr>
<tr>
<td>Joint or Back Pain</td>
<td>58.3 (141)</td>
<td>57.9 (106)</td>
<td>59.3 (35)</td>
<td>0.85</td>
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<tr>
<td>Obstructive Sleep Apnea</td>
<td>56.6 (137)</td>
<td>49.7 (91)</td>
<td>78.0 (46)</td>
<td>&lt;0.01</td>
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<tr>
<td>Hypertension</td>
<td>45.0 (109)</td>
<td>38.8 (71)</td>
<td>64.4 (38)</td>
<td>&lt;0.01</td>
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<tr>
<td>Menstrual Irregularities/PCOS</td>
<td>43.2 (79)</td>
<td>43.2 (79)</td>
<td>NA</td>
<td>NA</td>
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<td>Fatty Liver Disease</td>
<td>36.9 (89)</td>
<td>35.5 (65)</td>
<td>41.4 (24)</td>
<td>0.42</td>
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<tr>
<td>Chronic Kidney Disease (any stage)</td>
<td>19.2 (43)</td>
<td>20.8 (35)</td>
<td>14.3 (8)</td>
<td>0.28</td>
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<tr>
<td>Binge Eating Disorder</td>
<td>15.4 (36)</td>
<td>15.8 (28)</td>
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<td>GERD</td>
<td>14.5 (35)</td>
<td>14.2 (26)</td>
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<td>Stress Urinary Incontinence</td>
<td>14.5 (35)</td>
<td>16.9 (31)</td>
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<td>Depression</td>
<td>14.0 (32)</td>
<td>16.3 (28)</td>
<td>7.1 (4)</td>
<td>0.09</td>
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<td>Diabetes</td>
<td>13.6 (33)</td>
<td>12.6 (23)</td>
<td>17.0 (10)</td>
<td>0.39</td>
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<td>Asthma</td>
<td>9.5 (23)</td>
<td>7.1 (13)</td>
<td>17.0 (10)</td>
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<td>Blount’s Disease</td>
<td>3.7 (9)</td>
<td>2.2 (4)</td>
<td>8.5 (5)</td>
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<td>Pseudotumor Cerebri</td>
<td>2.5 (6)</td>
<td>2.2 (4)</td>
<td>3.4 (2)</td>
<td>0.64</td>
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<tr>
<td>Cholelithiasis</td>
<td>1.2 (3)</td>
<td>1.1 (2)</td>
<td>1.7 (1)</td>
<td>0.57</td>
</tr>
</tbody>
</table>

**Comorbidity Load**

<table>
<thead>
<tr>
<th>Comorbidity Load</th>
<th>Total (range 1-9)</th>
<th>Females (range 1-9)</th>
<th>Males (range 1-8)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.9</td>
<td></td>
<td>4.3</td>
<td>0.01</td>
</tr>
</tbody>
</table>

PCOS = Polycystic Ovary Syndrome, GERD = Gastroesophageal Reflux Disorder. a N=11 missing, b N=1 missing, c N=18 missing, d N=8 missing, e N=14 missing with clinical range based on Beck Depression Inventory-II total raw score ≥ 17.

Summary: Comorbidity Impact on WRQOL

• Males vs. females
  – Males had higher BMI and comorbidity burden but less perceived burden on their WRQOL
Weight-Related QOL Prior to Surgery

Summary: Comorbidity Impact on WRQOL

• Dose response (even within severe obesity)
  – Higher BMI was associated with greater Total impairment and weight-related physical discomfort

• Strongest predictors of WRQOL impairment:
  – Males: When comorbidities “add up” (Cload), depression, chronic pain, BMI
  – Females: Psychosocial health – depression, BED, BMI
What is the psychological impact of living with severe obesity?

IT DEPENDS ON WHO YOU ASK AND MAYBE, WHAT YOU ASK....
Be wary of assumptions #1

Not all youth of severe excess weight manage significant psychosocial challenges, including:

- Internalizing symptoms/depression
- Social difficulties/Peer victimization
- Lower self-worth
- History of child maltreatment
- Family dysfunction

Clinical subgroups with greater risk exist and risks cluster together
Be wary of assumptions #2

Even youth with severe excess weight engage in high risk behaviors

• Prevention and monitoring use of
  – Alcohol use normative (not benign)
  – Tobacco & illicit substances problematic

• Girls – risky sexual behaviors

MAKE TIME FOR CONVERSATIONS IN ROUTINE CARE
Clinical Implications

Burden is additive for any child – excess weight may be just one of many “rocks” they carry around

THOROUGH ASSESSMENT AND BE PRIMED WITH ADJUNCTIVE CARE REFERRALS
Clinical Implications

IDEA TO START WITH:

“So how do you think your weight impacts your life?”

OR to a parent

“How do you think your child/adolescent’s weight impacts their life?”
Clinical Implications

• Parents typically initiate treatment and bring to all appointments
• Domains of HRQOL capture concerns of what prompts seeking care
  – Child/adolescent’s well-being versus a BMI value
• Allows provider/caregiver/pediatric patient to speak the same language
• Asking patient and family “how do you think weight impacts your child/adolescent’s day-to-day life” is a salient and more neutral opening to discussing weight and need for intervention
Clinical Implications

• For patients doing well
  – Support and foster the influences contributing to these strengths
  – Focus care on other issues of importance to the patient
    • Ex. Improvement in medical comorbidities may be of greater concern for males

• For adolescents experiencing greater issues
  – Cognitive behavioral therapy
  – Family interventions
  – Encourage to engage in activities (e.g., volunteering) that provide opportunities for building social support and increasing self-worth not tied to weight management or body esteem
Caveat: Bariatric Surgery

• Adolescents undergoing bariatric surgery may be a unique clinical group (*United States*)

• Must navigate a complex system
  – Their own/parent motivation
  – Physician referral and support
  – Clinical team approval
  – Insurance approval

• Adolescents managing greater psychosocial burden may not be seeking surgery, not being referred, drop out, or are not being approved to proceed to surgery
Weight Loss and Health Status 3 Years after Bariatric Surgery in Adolescents

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A  Weight Change from Baseline

<table>
<thead>
<tr>
<th>Years of Follow-up</th>
<th>Bypass</th>
<th>Sleeve</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>161</td>
<td>67</td>
</tr>
<tr>
<td>0.5</td>
<td>140</td>
<td>56</td>
</tr>
<tr>
<td>1.0</td>
<td>140</td>
<td>61</td>
</tr>
<tr>
<td>2.0</td>
<td>137</td>
<td>58</td>
</tr>
<tr>
<td>3.0</td>
<td>131</td>
<td>52</td>
</tr>
</tbody>
</table>

No. of Participants

- Bypass: 161, 140, 140, 137, 131
- Sleeve: 67, 56, 61, 58, 52
How does a teen navigate the transition to young adulthood in this context?

Before

After

It’s complicated!
Ongoing work

– Fewer rocks = better weight loss outcomes?
– More rocks = poorer weight loss outcomes?
– Does burden lead to a critical secondary outcome
  • ex. Substance use disorder, suicide
Of greater concern are those without intervention, who seem at greater psychosocial risk, and will be carrying this burden into adulthood.
Thank you! Questions?