Beyond eating and exercise: Implementing trauma informed obesity care in SBHCs

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Objectives

1. Discuss the physiologic and epigenetic changes that result from chronic stress, and their interrelationship with weight and metabolic health or cardiovascular risk factors.

2. Analyze hidden barriers to traditional obesity preventions and identify alternative approaches in working with youth affected by trauma and economic insecurity.

3. Integrate interventions about stress and social determinants of health into primary care, behavioral health and health educator approaches to wellness in SBHC.
Overweight and Obesity in Youth: Rewriting the Etiology Narrative
Is Elevated BMI the Same as Obesity?

- Obesity: excess growth and expansion of adipocytes in the body
  - Two types: subcutaneous and visceral adipose tissue
- BMI reflects weight for height
  - Does not distinguish between muscle mass or subcutaneous versus visceral adiposity
  - More accurate reflection of adiposity in “obese” percentiles, than in the “overweight” percentiles in children
  - Has shown concordance with waist circumference (WC) in studies, which is thought to better capture visceral adiposity
BMI and WC as Measures of Adiposity

Two individuals with same body fat %, age, sex and a BMI of 24 kg m\(^{-2}\)

- 1.07 Litres of visceral fat
- 3.7 Litres of visceral fat
- Subcutaneous fat

Two individuals with same body fat %, age, sex and waist circumference of 84 cm

- 1.2 Litres of visceral fat
- 4.2 Litres of visceral fat
- Subcutaneous fat

Is it this simple?
Multifactorial Etiology of Weight Gain

Genetics and Epigenetics

Social Determinants

Mental Health

Prenatal Environment

Postnatal Environment

Physical Activity

Diet
How Effective are Diet/PA Interventions?

• Result in modest BMI decrease in children/adolescents in the short term
• Methodological rigor of most studies is weak or inconsistent and generalizability may be limited
• Most interventions require participation for at least one hour per week for at least 6 months to demonstrate BMI change; retention is a challenge
• Some studies demonstrate metabolic benefits even without BMI change
• Evidence for BMI change in socioeconomically disadvantaged children is limited
• Most agree family involvement is key component for success
How to Address Other Contributing Factors

• Assess for and address social needs such as food and housing security
• Advocate for public policy and societal change that addresses systemic inequity and discrimination
• Integrate mental health support as a fundamental component of care
Social Determinants

• Child’s food “marketplace”
• Food deserts
• Built environment/safety
• Media
• Lobby interests
• Public Policy

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Behavioral Health

- Obesity
- Negative Body Image
- Depression
- Sleep disturbance
- Lower quality of life
- School difficulties/functional impairments
- Bullying/Stigma
- Trauma
- Eating disorders
- Anxiety
Let’s Talk About Stress
Toxic Stress

• “Toxic stress can result from strong, frequent, or prolonged activation of the body’s stress response systems in the absence of the buffering protection of a supportive adult relationship.”


OR – the level/persistence/type of stress overwhelms even the most supportive parent
Long-term effects of toxic stress

• Impact on developing child NOT just social and behavioral but also biochemical

• Excessively high, prolonged exposures lead to:
  – Changes in the brain – e.g. altered neuroendocrine responses
  – Altered size and function of brain centers
  – Biological disruptions that increase predisposition to chronic diseases of adulthood
ACEs and Health Outcomes

• ↑ incidence of all chronic diseases
  – Emphysema
  – Type II DM
  – Cardiac disease

Graded Relationship Between ACE Score and Cardiovascular Disease

Adapted by R Wade from Dong, 2004
ACEs & CV Health of Children

School-based study of 6th-8th grade children, measuring BP, HR, BMI, WC, parent questionnaire re ACEs

Pretty et al, 2013
Stress Physiology

- Increased cortisol
- Persistent elevation of glucose while inhibiting insulin
- Increases appetite ("comfort foods")
- Increases visceral fat storage
- Leptin desensitization
What is being done about it?
Ineffective school approaches to obesity

- Classroom/PE measurement - how does this intersect with a trauma informed approach?
- Weight shaming vs. increasing awareness
- Negative effects of “BMI letters”
Does Weighing Help?

- Studies in adults show self-weighing may be associated with weight loss
- Studies in younger populations DO NOT
- May reduce self-efficacy
- May contribute to stigma or negative psychological outcomes
- More research is needed
Stigmatization of Weight

• Societal devaluation due to overweight
• Harmful stereotypes including lack of willpower or discipline
• Bullying and victimization
• Perpetuated by peers, educators, parents and healthcare professionals
• Associated with higher BMI or unhealthy lifestyle behaviors


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Potential Health Impact of Weight Stigma

- Negative mental health outcomes
- Increased isolation and decreased healthcare access
- Negative effect on work and school
- Increase in unhealthy eating behaviors
- Lower levels of physical activity
- Worsening obesity
Maybe the framing of obesity is the problem

Is it possible to address healthy diet, exercise, sleep and stress reduction \textit{without} asking our patients to lose weight?
What are we doing about it?
Trauma-Informed Care

“What’s wrong with you?”

“What happened to you?”

“What’s right with you?”
Trauma-informed approach

**REALIZE**
the impact of trauma and path to recovery

- Stress impacts:
  - emotion
  - metabolism
  - hormones
  - weight
  - lifestyle behaviors

**RECOGNIZE**
the signs and symptoms of trauma and stress

- Assess for history of trauma (including weight-related)
- Encourage self-awareness around eating and activity as coping

**RESPOND**
by integrating knowledge of trauma into practice

- Interventions must:
  - be patient-driven
  - include mental health support
  - encourage healthy relationships with eating and activity

**RESIST**
re-traumatization

- Use body positive language
- Focus on healthy behaviors, not the scale
- Avoid blame & shame
- Stop weighing patients at every visit
American Academy of Pediatrics (AAP) recommendations:

• Role model supportive and nonbiased behavior
• Use appropriate, sensitive and nonstigmatizing language in person, in documentation and in the clinic environment
• Incorporate behavioral health screening into patient counseling
Support for body positivity

Does body satisfaction help or harm overweight teens? A ten-year longitudinal study of the relationship between body satisfaction and BMI

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Abstract

Purpose—This study examines the relationship between body satisfaction of overweight adolescents and 10-year changes in BMI.

Methods—Participants who were overweight as adolescents (n=496) were drawn from Project EAT, a 10-year longitudinal study.

Results—Among overweight girls, a significant difference in 10-year BMI change across baseline body satisfaction quartiles was observed. Overweight girls with the lowest body satisfaction at baseline had a nearly 3-unit greater increase in BMI at follow-up, compared to overweight girls in the high body satisfaction quartile; this difference has important clinical significance. Among overweight boys, significant associations between body satisfaction quartile and change in BMI were not observed.

Conclusion—Overall, findings indicate that among overweight adolescents a high level of body satisfaction during adolescence was not harmful, and in fact may be beneficial for girls, in terms

Body Satisfaction, Weight Gain, and Binge Eating Among Overweight Adolescent Girls

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Abstract

Objective—To examine if body satisfaction is associated with body mass index (BMI) change and whether it protects against the development of frequent binge eating among overweight and obese adolescent girls.

Methods—We used prospective data from 9 waves of an ongoing cohort study of adolescents, the Growing Up Today Study. At enrollment in 1994, participants were 9 to 14 years old. Questionnaires were mailed to participants annually until 2001, then biannually through 2007. Girls who were overweight or obese in 1996 were included in the analysis (n=1,559). Our outcomes were annual change in BMI and incident frequent binge eating, defined as binge eating at least weekly and use of compensatory behaviors.

Results—At baseline, 57.2% of the overweight and obese girls were at least somewhat satisfied with their bodies. During 11 years of follow-up, 9.5% (95% confidence interval [CI] 7.8, 10.8) of the girls started to binge eat frequently. Controlling for BMI and other confounders, overweight and obese girls who reported being at least somewhat satisfied with their bodies made smaller BMI gains (β=-0.01 kg/m², 95% CI [-0.19, -0.02]) and had 61% lower odds of starting to binge eat frequently (odds ratio [OR]=0.39, 95% CI [0.24, 0.64]) than their less satisfied peers. Compared to girls who were the least satisfied with their bodies, girls who were the most satisfied had 85% lower odds of starting to binge eat frequently (OR=0.15, 95% CI [0.06, 0.37]). The association between body satisfaction and starting to binge eat frequently was stronger for younger adolescents than older adolescents.

Conclusions—Adolescents with higher body satisfaction may be protected against the negative behavioral and psychological factors associated with overweight.
Health at Every Size™ (HAES)

**Health at Every Size: The New Peace Movement**

We’re losing the war on obesity. Fighting fat has not made the fat go away. However, extensive “collateral damage” has resulted: Food and body preoccupation, self-hatred, eating disorders, weight cycling, weight discrimination, poor health. . . . Few of us are at peace with our bodies, whether because we’re fat or because we fear becoming fat. It’s time to withdraw the troops. There is a compassionate alternative to the war—Health at Every Size—which has proven to be much more successful at health improvement—and without the unwanted side effects.¹ ² The scientific research consistently shows that common assumptions underlying the war on obesity just don’t stand up to the evidence.

- Disputes assumptions about “normal” weight & longevity
- Asserts that SES, poor nutrition, lack of exercise, weight cycling, not obesity itself, lead to outcomes associated with obesity in literature
- Asserts that dieting is a predictor of future weight gain

Linda Bacon, 2010
Shifting the Balance

- Stop using weight/BMI as the metric for success
- Promote positive relationships with food and intuitive eating
- Respect diversity of body size and explore body satisfaction
- Focus on benefits of healthy lifestyle rather than negative outcomes
- Acknowledge social determinants and the role of stress in metabolic health
Does HAES work?

- Systematic review of 14 studies of adults by Ullian et al., 2018:
  - Positive physical activity and psychological well-being outcomes, with positive qualitative changes in eating behaviors
  - Cardiovascular responses (BP, blood panels), body image and energy intake were inconclusive
  - Study authors are conducting an RCT, both arms HAES, differ in “dose” of intervention
Approaches for teens

Intuitive Eating
- Eating to appetite
- Eating what appeals
- Stopping at just enough

Impact of puberty on body changes

Coping with stress
SBHC Interdisciplinary Approach

Medical
- Assess for coexisting conditions
- Collaborate with medical home

Health Ed
- Facilitate positive education and awareness around food and activity
- Assist with goal setting

Behavioral Health
- Explore the “why” behind lifestyle behaviors
- Encourage stress prevention and management strategies
- Promote positive self-esteem

School
- Support healthy eating and activity on campus and in community
- Address bullying and shaming culture
SBHC Balance Wellness Program
Pilot Objectives

1. Evidence-based physical and mental wellness program for youth that promotes principles of body positivity and prioritizes health rather than weight-based outcomes
2. At least 2 trainings during the 2019-20 academic year for SBHC providers and staff on program principles
3. Enroll 20-24 program participants (11-19yo) at 2 SBHCs – 1 MS, 1 HS
4. Implement program between Jan-May 2020, 8 visits per participant
5. Evaluate feasibility of program implementation and select health outcomes
Intervention

• Medical visits (2 - beginning and end)
  – Lifestyle habits/motivations questionnaire
  – Risk-based assessment – PMH, FH, ROS, Focused PE
  – Evaluation for disordered eating patterns
  – Wt/ht, labs as appropriate

• Behavioral health (1 visit)
  – MH and Trauma Screening, Body Image Questionnaire

• Health ed (5 visits)
  – Relationship with food, Mindful eating, Hunger/fullness scale, PA/Yoga, body positivity, goal setting
Results

- COVID-19!
- ~12-15 participants had been recruited and had some visits
- 0 had completed program
- Trainings provided at all staff retreat, 1 for medical and health ed providers
- Authors of No Weigh scheduled to speak at all-staff meeting (on March 19th 😞)

Coronavirus School is Closed
Balance Pilot Challenges

- Training and preparation
- Different demographic/payor mix b/w sites
- Scheduling
- Not designed with parent involvement
- Lost data due to SiP
- COVID-19!!
Balance Pilot Successes

• Provider/staff trainings successful – great interest
• Many students interested in the program and enjoying it – no attrition during beginning
• Limited budget allowed for incentives and supplies
• Identified several youth with disordered eating and/or food insecurity
Impact of COVID-19 on Weight in Youth

- Studies have found increased severity of COVID-19 illness in obese children, possibly due to pro-inflammatory state (Zachariah, et al, 2020; Nogueira-de-Almeida, et al, 2020)
- Worsening food insecurity, poverty, housing instability
- Increased stress, lack of opportunity for physical activity and decreased quality of nutritional intake
- Lack of structure/routine, social interaction and support
- Telehealth less ideal for adolescent or weight/lifestyle visits
  - Lack of confidentiality
  - Difficulty forming relationships/connections
Take home ideas

• Many current “obesity interventions” ignore the vital role of stress and trauma in weight management and weight disparities
• Interventions should avoid perpetuating stigma and/or shaming that may exacerbate mental health consequences of overweight and cause patients to avoid the health center
• The practice of frequent weighing does not improve weight outcomes in adolescents and may impact psychosocial well-being
• More research is needed to develop and evaluate interventions that are multi-disciplinary, body and person positive, and include mental health support for adolescents
• COVID-19 has created increased challenges for lifestyle interventions
What questions do you have?
THANK YOU!

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