
Eating Disorders Review

May/June 2024

Volume 35, Issue 3

Body Image Interventions After Bariatric Surgery

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What is body image? Body image is the mental construct of our physical selves. In other words, it is our appraisal of and attitude toward our physical appearance. It develops in several ways, such as in the context of societal and cultural aesthetic values, messages about our body we receive from those around us, and our physical experience of our body.

Body image often includes size, weight, shape, skin color and skin decorations (e.g., tattoos and piercings), hair texture, facial features, hair or lack of it, and height and posture (National Eating Disorders Collaboration, or NEDC, guidelines developed by the Australian Government Department of Health and Aged Care). Although we tend to hear about body image in the context of teenaged girls dissatisfied with their weight or shape, body dissatisfaction occurs in people of all genders and ages. Less commonly studied or discussed are the body image concerns of people with medical complications (e.g., cancer, obesity, or musculoskeletal complications).

When and How Does Body Image Form?

Body image begins in adolescence and continues to solidify through the young adult years. The timing of puberty and the pace of the development of secondary sex characteristics (think: breast development, acne, facial hair) can influence teens' attitudes about their bodies. Body image develops within the larger societal context and is influenced by an individual's ethnic, racial, and cultural heritage. The Western feminine body ideal has historically been characterized by white or olive skin tone, and a thin body, with little to no hair (except on the head and eyebrows). The current variation on this theme swaps the term "thin" with "athletic, fit, and toned." (Bozsik et al., 2018).

Takeaway Points

- **Body dissatisfaction occurs in people of all ages and genders.**
- **The White Western body ideal prioritizes thinness, particularly among women.**
- **An obese body is considered unattractive, and evokes stereotypes of laziness and poor self-care.**
- **The success of bariatric surgery is not gauged by getting down to a specific body mass index).**

Angular, Nordic features have been portrayed as an achievable and preferred aesthetic, compared to more curvaceous or Asian/African physical features. Western beauty ideals have been sustained by racist beliefs about White/European superiority. Furthermore, historically, certain physical features were seen as indicators of moral standing (Forth, 2012). Above all, the White Western body ideal prioritizes being thin, particularly among women. Regardless of gender, having an obese body is considered unattractive and

evokes stereotypes of laziness and poor self-care (Puhl and Huer, 2010).

Body Image After Bariatric Surgery

Most people pursuing weight loss surgery do so to address multiple weight-related comorbidities; however, perceived improvement in physical appearance remains an important motivation and outcome, and is sought by many. Hence, body image is still an important therapeutic topic for people who have undergone bariatric surgery. Despite being smaller and weighing less postoperatively, many individuals can't see any difference in their size or shape when they look at themselves in the mirror after bariatric surgery. This inability to see change often persists, even in the face of significant weight loss (Perdue et al., 2020). Hence, in the preoperative period it is important to set realistic expectations about the changes about the changes that will be seen in the body.

Moreover, weight lost after surgery can be rapid, inconsistent, more noticeable in different areas of the body, and unique to each person. Extra skin under the arms, on the stomach, and on the thighs can be sources of embarrassment and self-consciousness. Because body image is a mental construct, it does not change with or as rapidly postoperatively as does the physical body.

Patients may be disappointed and frustrated that surgery did not improve their confidence in wearing swimwear or shorts, due to sagging or excess skin. For individuals with more significant body dissatisfaction, the lack of perceived improvement in physical appearance may lead to negative affect, frustration, and regret over undertaking bariatric surgery.

Interventions for Reducing Body Dissatisfaction After Bariatric Surgery

Raising awareness of stigma. Implicit bias against larger bodies is prevalent throughout our society, even in healthcare settings. Weight bias could be considered the last form of acceptable prejudice (Ewing, 2019). Many patients who have successful bariatric surgery remain in the overweight body mass index (BMI) category (BMI: 25-29), albeit at a much lower weight and with improved health. As clinicians, it can be important to understand that the success of bariatric surgery is not gauged by getting down to a specific BMI. Providers who work with bariatric patients should be aware of their own misconceptions and assumptions about the end-goal of surgery and not inadvertently focus on weight loss at the cost of other "non-scale" victories. Even individuals who have struggled with obesity may not realize the impact of social media and mass media on their negative evaluations of their own bodies (Ravary, Baldwin, Bartz, 2019). Raising awareness of how society denigrates and devalues larger bodies is a powerful first step in building a healthier body image.

Expanding and reclaiming body image

While body image can be slow to change, we can also work on expanding our conception of attractiveness. Within Western society, weight and size take on disproportionate importance in our evaluation of our physical selves. Consider the impact on your body esteem were you to give equal or greater importance to posture and grace (i.e., how we carry ourselves), or to your hair, your sense of style, your eyes, fingers, skin, or cheekbones. Instead, consider the things your body post-WLS allows you to do daily: going up a flight of stairs without getting winded, completing a marathon, playing with your grandchildren, receiving a full-body hug, or giving birth. A well-rounded body image includes our attitudes about and confidence in our bodies to experience the world around us.

The diet industry would have us believe that the body is malleable and that it is easy to change, based on whatever the current body trend is right now. The clear message is that "the body is a project" (Blackwell, 2023), and that there must be something fundamentally wrong with our outward appearance. Blackwell (2023), author of *Decolonizing the Body*, suggests rejecting this premise altogether. Instead, consider that the body is "designed for joy."

Cognitive Restructuring

Negative thoughts about the body are typically automatic, and often triggered by looking at photos or at our reflection in the mirror. We can challenge those thoughts by learning to use more neutral and accurate language to describe our bodies (Figure 1).

A gentle form of exposure therapy may be beneficial for individuals struggling with body dissatisfaction. The exercise begins by having the person stand in front of the mirror close enough to only see his or her face. The following script may act as a guide:

Note any judgmental thoughts you are having right now about your face. Setting those aside, practice describing your face in a neutral or matter-of-fact way. Now

that you have accurately described your face to yourself, think about how a friend or someone who loves you would describe your face? As you do this exercise, notice any shifts in your thoughts and feelings towards your face. Over time, you may find yourself feeling less shame or disgust as you continue this practice. As you feel comfortable, you can move on to other areas of your body that may need more compassionate attention, gradually extending for longer periods of time.

Instead of...	What about...
My thighs are huge.	My thighs are a larger part of my body.
My stomach looks horrible.	My stomach is looser because I've lost weight.
My arms look like bat wings.	There's extra skin underneath my arms.
My chest is so droopy.	My chest is changing.
My body is disgusting.	My body is my own. It's carrying me through this. It isn't the way I'd like it to look, but it's part of my story.
My hair is so gross.	My hair could use some attention.
My rolls of fat are disgusting.	I don't like my fat rolls, but they are smaller and less noticeable when I wear clothes.

Figure 1. Using more neutral and accurate language to describe the body.

Body Image Improvement Takes Time

While bariatric surgery results in significant weight loss, improved health, and a much-improved quality of life, body image may be slower to improve. Body image starts in early adolescence through young adulthood, and is heavily influenced by society's preference for thinness. Individuals who have been overweight most of their lives may have experienced years of weight stigma and discrimination, and may be deeply unhappy with their physical appearance. While bariatric surgery does result in rapid weight loss, the loss may be distributed unevenly over the body and accompanied by excess or loose skin. Raising patient awareness of society's unrealistic ideals and emphasizing *all* the benefits of weight loss surgery may help improve body esteem. Cognitive behavioral interventions, such as exposure therapy and cognitive restructuring, may be effective with the support of a trained clinician.

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From Across the Desk

Body image problems start early for men and women. We are familiar with adolescent girls getting the wrong messages about their bodies; this can come from the internet, peers, and family members as well. Well-meaning family members can suggest that losing weight will help avoid the onset of diabetes and other conditions. Boys' problems with body image center more on muscularity; in one study, 60% of all boys reported manipulating their diet to help them become more muscular (Lavendar et al., 2017).

Dr. Sheethal Reddy's article examines another side of body image problems, those that develop after bariatric surgery (See "Body Image Interventions After Bariatric Surgery," elsewhere in this issue). Despite being smaller and weighing less after bariatric surgery, many individuals can't see any difference in their size and shape. The author outlines certain compassionate interventions that will help. Another article tackles weight shaming. An Italian study found that 1 in 4 young people were shamed about their weight. A reader expresses concern about an older male relative who is worried about his body image and visits a local gym at least 3 times a week ("Questions and Answers"). Another familiar topic involves the barriers to eating disorder treatment that poorer and non-white populations face (see "Update").

Summer brings its own pressures, with more exposure and more challenges to body image. The good news is the counterbalance of self-acceptance and self-care, to help diminish the effects of social media and unhealthy "must be thin to win" advertisements.

—MKS

Seeking Sources of Body Shaming

An Italian study found that 1 in 4 students was affected.

Body shaming, weight bias, and bullying about weight are being examined much more closely, and the link to developing disordered eating has received new attention. However, some have noted the lack of a clear definition of body shaming. Shaming can range all the way from unconscious but often negative comments about a person's body, seemingly in a helpful way, from parents or even medical professionals ("losing weight will help you avoid developing diabetes") to harsh anonymous online comments about body shape or weight.

Dr. Silvia Cerolina and colleagues from the Department of Psychology, Sapienza University of Rome, Italy, sought to estimate the extent that high school students had body shaming experiences with peers and family members. They then compared the degree to which the experiences were associated with eating disorder symptoms, current body mass index, and body dissatisfaction. They also hypothesized that the effects of body shaming on the student's sense of well-being might well be mediated by the individual's own weight bias (*Front Psychol.* 15:1356647. doi:0.3389/fpsyg.2024.1356647).

Evaluating the students. From 2022 to 2023, the authors evaluated 919 high school students (median age: 15.97 years) from 10 secondary schools in urban Rome. Most of the classes were visited by at least one of the authors, who outlined the study and the online tests involved and collected parental consent forms. The students then completed a battery of tests during the timetable of the school lessons. The online battery of self-report questionnaires assessed body shaming, internalized and public weight bias, eating disorder symptoms, body dissatisfaction and demographic information.

Two yes/no questions were used to assess weight-related body shaming experiences from peers ("Have you ever been teased or made fun because of your weight by peers?") and from family members (For example, "Have you ever been teased or made fun because of your weight by a family member?")

Probing attitudes about body shaming

The Italian version of the *Attitudes toward Obese Persons* (ATOP) questionnaire was used to assess perceptions and attitudes about people with obesity. One of the statements, for example, was "Obese workers cannot be as successful as other workers." Another scale, *The Disordered Eating Questionnaire* (DEQ), was used to calculate a global score of eating disorders symptoms, such as restrictive eating, binge eating and purging behaviors, ruminating, and worries about weight and body shape.

The Weight Bias Internalization Scale (WBIS) was administered to assess the internalization of WB and negative stereotypes about overweight and obesity (*Curr Psychol.* 2017. 36:242). The WBIS was used to assess the student's internalization of WB and negative stereotypes about overweight and obesity. The score was electronically available only if participants previously responded "Yes" to an item assessing whether they perceived themselves as overweight. Higher scores indicated greater internalization of weight-related stigma. Examples included: "I do not feel that I deserve to have a fulfilling social life, as long as I'm overweight" and "My weight is a major way that I judge my value as a person."

The Silhouette Rating Scale (SRS) is a pictorial tool depicting a series of nine female or male silhouettes varying in body dimensions (width of body parts) and shape. Two items assess current and ideal body size evaluation, allowing the student to estimate a score of body size dissatisfaction obtained from the discrepancy between them (ideal minus current body shape and size).

The Disordered Eating Questionnaire (DEQ) was used to assess disordered eating-related behaviors and attitudes. This 24-item scale helps calculate a global score of eating disorder symptoms such as restrictive eating, and binge-eating and purging behaviors, willingness to lose weight, ruminating, and worrying about weight and body shape, and using intense physical exercise to lose weight, for example.

The extent of weight-related body shaming

One in four students reported experiencing weight-related body shaming by peers (25.1%) or by family

members (25.0%), and 37% reported having at least one body shaming experience during their lifetime. Female students had higher scores of eating disorder symptoms and greater dissatisfaction with body size than did males.

The only exception was in the public *Weight Bias Internalization Scale* (WBIS) score, which was higher in males than in females. The WBIS is a self-report questionnaire that measures the degree to which overweight and obese persons internalize negative stereotypes and their own statements about their weight. The authors also reported decreased protein lipid intake levels. Female students reported also twice the risk of having at least one lifetime weight-related body shaming experience compared to male students, which is probably related to sociocultural factors, such as the pervasive influence of the “thin ideal.”

Nearly 40% of participants reported clinically significant eating disorder symptoms. The authors reported that previous Italian studies signaled an alarming growing prevalence rate of 28%, possibly relating to a post-COVID pandemic effect. According to the authors, the pandemic deeply disrupted daily life, and created a global effect of increasing the risk of eating disorders.

The finding that public weight shaming seems to produce different effects than internalized weight bias and is not associated with body shaming and eating disorder symptoms in overweight teens might seem to be controversial. However, with further examination, this might make sense, considering that this group (students who report being overweight) may have internalized weight bias, and may apply negative stereotypes and attitudes to themselves. They may also have developed a greater sensitivity toward other people, resulting in less negative attitudes toward obesity and thus do not associate this with body shaming experiences and eating disorders symptoms.

Artificial Intelligence Reaches Out to Eating Disorders

Some benefits of and problems with this rapidly developing science

Artificial intelligence, or AI, is everywhere, and now reaches out to eating disorders treatment. In a thoughtful editorial, three researchers from the University of Turin, Italy, have explored the early ways that AI can be creatively applied to the therapeutic relationship, but also point out important cautions (*Eat Weight Disord. Studies on Anorexia, Bulimia and Obesity*. 2023. 28:50).

The original digital platforms are being replaced by Large Language Models (LLM), which allow a person to interact with AI in a conversational way, by posing questions and receiving both original and articulated answers. ChatGPT, which was launched late last year, has stimulated lively debate on both sides. Is it helpful or harmful? On the plus side, AI has made it possible to apply a large amount of data from a single patient or groups of patients. A second area of discussion and debate involves active use of AI-based tools during treatment and in the daily life of the patient. As Dr. Giovanni Abbate-Daga and his colleagues note, both areas “can lead to eventual therapeutic advances but can also present obstacles and ethical problems.”

Consider some benefits

One of the attractive elements of AI is that it provides direct information in a conversational manner that many internet users are familiar with and like. Through browsers and apps, an individual is now free to use AI in his or her own way, leading to flexible and unforeseen possibilities. AI could be used for and against therapy, as well as exposing the patient or future patient to completely novel approaches to therapy. As time passes, treatment boundaries may become blurred, say the authors, making it more difficult to define what is appropriate in therapy and what is not. AI may supply support between

treatment sessions when a patient has urges to eat, or gains more weight than expected, or is trying to achieve a treatment goal.

And, as a way to prevent an eating disorder, the use of AI by individuals who are not yet receiving treatment but who are at serious risk of an eating disorder should be taken into consideration. A person may turn to AI first when he or she has recently developed symptoms of an eating disorder but does not know about, or resists thinking about, the possibility of having an eating disorder. Having access to AI may stimulate the individual to get more information on purging, overexercise, an unhealthy diet, and other warning signs. The conversational approach provided by artificial intelligence may lead the patient to take action.

Healthcare professionals can also benefit from AI by recognizing behavioral patterns and language cues, helping them intervene at the earliest stages of an eating disorder, improving the chances of successful treatment and recovery. AI, through its large data collection, could provide access to more accurate and appropriate information on treatment and help grade the effectiveness of interventions for EDs much more quickly and in a more articulated way than through a normal internet search. In a different but related area, a recent study showed AI produced accurate and reproducible responses to frequent questions related to bariatric surgery: 86.7% of 151 responses obtained by AI was rated “comprehensive” by board-certified bariatric surgeons (*Obes Surg.* 2023. 33:1790). AI might also allow individuals to avoid the feelings of isolation and shame, a major problem for some patients (*J Clin Med.* 2022. 11:6683).

And, consider some negatives

The authors note that current conversational AI entries can provide false information, presenting it as fact (*Front Comput Intell Syst.* 2023. 2:81), producing the so-called “AI hallucinations or delusions.” Vulnerable patients may take false internet information to heart, for example, false information about weight, foods, and calories. This false information may even back up these claims by citing clinical studies that have never been conducted.

Clinicians can discuss and re-establish correct information on diets, weight, and metabolism, for example. The authors note that physicians and psychotherapists can also work together to develop their own AI models to counteract harmful information and to check AI for risks of mistakes.

Finally, there can be ethical problems. Patients who live far from specialized treatment centers and have geographical or financial barriers to care may rely largely on the internet between limited in-person sessions. Privacy and data security are also potentially at risk, calling for transparency and data security, and patients must know how their personal data is being used. The authors point out that laws and norms on data-sharing are urgently needed.

Finally, the Internet cannot replace in-person sessions

The challenge for clinicians is to retain personal relationships with patients and to remember that nonverbal communication is also an essential part of therapy. Although many internet tools are being developed, they cannot replace in-person sessions. Even with the dubious claim that AI tools can read facial and body expressions, a physician-patient relationship cannot be reproduced through artificial tools (*Front Psychiatry.* 2013. 10:746). The authors note that one positive effect is that AI can provide accessible and affordable support between sessions. Mobile applications and online platforms powered by AI algorithms can deliver evidence-based alerts.

Finally, the authors note: “Our duty is to help our patients understand how responsibly to use opportunities opened by AI, learning from them at the same time. It is better to ride the wave than to end up beneath it.”

The Effects of Background Music During Inpatient Meals

Adding music during meals can have a positive effect on inpatients with eating disorders.

The idea of combining music and treatment isn't new. For example, the Greek philosopher Pythagoras (c. 579-494 BC) prescribed a variety of musical scales and modes to cure a variety of physical and psychological ailments. The ability of music to ease negative moods is well established, and musical interventions are commonly used to soothe negative emotions in various settings, offering both psychological and physiological benefits. Furthermore, existing studies suggest that the particular style of music does not moderate mood during mealtimes, which reinforces the role of music as a potent way to detract patients from food-related concerns.

Dr. Paolo Meneguzzo and colleagues at the Padova Neuroscience Center of the University of Padova, Padua, Italy, recently found that adding background music to meals helped patients with anorexia nervosa, and restrictive or binge-eating disorders (*J Eat Disord.* 2024.12:7). Fifty-one women with eating disorders were recruited for a study while they were receiving inpatient care in a specialized ward for psycho-nutritional rehabilitation.

Three background music settings

From April to July 2022, general meal planning at the treatment center included six distinct mealtimes, breakfast, lunch, dinner, and three snack sessions, each customized to address specific nutritional rehabilitation needs related to the patient's diagnosis. From Monday through Friday, three randomized background music conditions were used during lunch and dinner. For the first two weeks and the last two of the study, meal components were constant and identical for all study participants.

Three background music settings were used: (1) no background music; (2) continuous classical music featuring only a piano, termed 'focus music,' and (3) a preset pop music playlist. All other variables during mealtimes remained the same, including ward conditions, meal timing, meal planning, communal groups, and the presence of both a nurse and a dietitian. Participants were seated at tables in groups of three or four, and were encouraged to talk among themselves as usual. Dietitians managed individual differences in meal compositions, recording these for subsequent comparisons with participants.

Questionnaires

The participants also completed a series of questionnaires. Before each test meal, information on hunger, satiety, the desire to eat, and *Positive and Negative Affect Schedule* (PANAS) questionnaire scores were collected using a pencil-and-paper approach. [Note: see later description of the PANAS questionnaire.] Post-meal questionnaires were filled out 5 minutes after the end of the meal. The inpatients were assessed with *The Eating Disorder Questionnaire* (EDE-Q) and the Panas, a self-report questionnaire featuring two 10-item scales designed to measure positive and negative affect (*Pers Soc Psychol.* 1988. 54:1063).

Some unexpected aspects of background music

The absence of music led to an increase in uneaten food and in eating rituals during mealtimes. In the no-music, or silent, scenario, Dr. Meneguzzo and colleagues also noted a decrease in the *Weight Bias Internalization Scale* (WBIS), a self-report questionnaire that measures the degree to which overweight and obese persons internalize negative stereotypes and their own statements about their weight. The authors also reported decreased protein and lipid intake levels among the study participants. The authors pointed out that during nutritional rehabilitation, an appropriate amount of fat and protein is crucial for normal nutrient density, energy, muscle maintenance, hormonal balance, satiety, and brain function (*Nutr Clin Prac.* 2010. 122).

Indeed, this finding is intriguing, according to the authors, because protein is essential for the synthesis of serotonin and dopamine, neurotransmitters that play a pivotal role in fostering feelings of positivity, motivation, passion, tranquility, and presence. In the same way, lipids are crucial for neural development, nerve cell differentiation, and migration, making them vitally important for proper functioning of the nervous system and for activating reward-related areas in the brain. These findings affirm the role of music as a beneficial environmental distractor for people with eating disorders during mealtimes. The introduction of background music may enhance the overall inpatient treatment experience, creating a more supportive and accommodating atmosphere, particularly during stressful times like mealtimes.

Update: Socioeconomic Barriers to Youth with Eating Disorders

Symptoms of eating disorders may go undiagnosed among middle-class Americans, but socioeconomic barriers to treatment are often higher among racially and ethnically disadvantaged youth. The cost of services and lack of treatment facilities are but a few of these barriers.

A study of Medicare claims of primary or secondary eating disorders diagnoses from 2010 to 2014 found that only a fourth of 8075 publicly insured youth with eating disorders in California were diagnosed with any eating-disorders-related medical complications. Dr. Amanda E. Downey and colleagues at the University of California, San Francisco, noted that diagnostic criteria for AN require malnutrition as a diagnosis for youth with AN, yet malnutrition was diagnosed in only 8% of youths with AN in this population (*J Adolescent Health*. 2023). Hematologic abnormalities were the most commonly diagnosed medical complications.

A second article, by Dr. Erin C. Accurso and colleagues, also from the University of California, San Francisco, found that about half of the Medicare claims from 2010 to 2014 involved Latinex youths (58.5%, n=2634), and about half of eating disorder diagnoses were unspecified (*Am Acad Child Adolesc Psychiatry*. 2023. 23: 02193-7). Additional analyses compared youth with eating disorders who were continuously enrolled across all 3 years (n = 4,500) to random subsamples of continuously enrolled youth diagnosed with a mood or anxiety disorder (n = 4128), a disruptive behavior disorder (n = 4599), or a psychotic disorder (n = 4290).

Spanish language and Latinex ethnicity were significantly more common among youth with eating disorders than among those with other diagnoses. The results highlighted the structural barriers to equitable medical and behavioral healthcare. Limited access to evidence-based eating disorders treatments and specialized treatment providers further contributes to disparities in medical outcomes and worsening of the significant public health burden of these illnesses. During nutritional rehabilitation, an appropriate amount of fat and protein is crucial for nutrient density, energy source, muscle maintenance, hormonal balance, satiety, and brain function (*Nutr Clin Prac*. 2010. 122).

The two studies emphasized the need to train community medical providers to recognize and treat people with eating-disorders-related medical complications. The authors stress that early and accessible psychotherapy with medical oversight from an eating disorders-informed medical professional may help to prevent or reduce morbidity and mortality rates.

Questions and Answers: Body Dissatisfaction Among Older Men

Q. One of my patients casually mentioned that her grandfather, who is 65, is very dissatisfied and

extremely critical of his appearance. He faithfully goes to a local gym several times a week. It made me wonder, are concern about body image and eating disorders unusual among older men? (*B.D., Towson, MD*)

A. No, eating disorders in older men are not that unique, and emerging research suggests that body dissatisfaction later in life is far more common than we think. A recent study found that 10% of older men had disordered eating related to dissatisfaction with their bodies. Dissatisfaction is higher in women; one study found that as many as 70% of women in midlife are dissatisfied with their body image (*Int J Environ Res Public Health*. 2023. 20:7143).

Among older men, “excessive sports activity” is a possible purging method in the context of BN, by acting as a compensation for binge-eating and as a way to prevent weight gain (*BMJ*.2017. doi.org,/10.1136/bmj.j1745). In one of the few studies of men with eating disorders, disordered eating was studied among 307 young, middle-aged, and older Austrian men who frequently use fitness centers (*Eat Weight Disord*. 2022.27:1765). Dr. Barbara Mangweth-Matzek, of the Medical University Innsbruck, Innsbruck, Austria, who has directed a number of studies of disordered eating among older men, found that 10% of the men had high rates of disordered eating, as shown by their responses on the *Eating Disorder Examination Questionnaire* (EDE-Q) and eating disorder symptoms on the *DSM-5*.

The authors also compared demographic, weight, and sports characteristics by three age groups: men 18 to 40 years of age; men 41 to 60 years of age, and men 61 to 80 years of age. The older the men, the more often they reported being married or in a partnership, to have children, to be less educated, or to have a higher body mass index (BMI, kg/m²). Sixty-six percent of the youngest age group and 54% of the middle-aged group had normal BMIs (18.5 to 24.9); 27% of the older men were greatly overweight or obese. Over three-fourths of the men reported using intensive sports activity daily or 4 to 6 times a week. The majority of men in all three age groups used sports activity to lose weight, gain muscularity, or to relax or compete. According to the global score on the *EDE-Q*, a lower score was reported in the middle-aged men compared to the youngest and oldest men.

Lack of awareness of the symptoms

Dr. Mangweth-Mazek and co-workers found disturbing eating behaviors in all age groups. Ten percent of all the study participants had eating disorder symptoms. The highest rates were in the youngest group, followed by the middle-aged men, then the oldest men. Binge eating was the most common symptom, followed by bingeing and purging—men with bulimic symptoms most often reported using excessive exercise to compensate for binge episodes. One important finding was the large discrepancy between eating disturbances seen on responses on the questionnaires and self-reported eating disorders, This seemed to suggest that the men weren’t aware of the pathological pattern of their eating behavior. In fact, the authors also found that a high percentage of men were satisfied with their weight, shape, and their body as a whole—in direct contrast to women of all ages. The fact that nearly 80% of the men exercised 4 to 7 times a week might be the underlying reason for their high scores on body image.

Treatment options

In an earlier article, Drs. Mangweth-Matzek and Hans W. Hoek noted a serious lack of information about treatment of eating disorders among middle-aged or older men (*Curr Opin Psychiatry*. 2017. 30:446). Recent studies show that the incidence of eating disorders after age 40 is around 3% to 4% among women and 1% to 2% among men. They also pointed out some of the challenges of identifying an eating disorder among older men and women. This can be caused by age-related symptoms, as well as the fact that older patients underreport eating disorder symptoms because of shame about having eating disorder symptoms at their age and the stigmatization of psychiatric disorders overall. They noted that cognitive behavioral therapy (CBT) interventions led to clear improvement after the clinicians emphasized age-related changes to appearance and improvements in sense of self-worth, body acceptance, and self-care.

Detecting Eating Disorders During Pregnancy

A reminder that eating disorders other than AN can be present in pregnant patients.

Pregnancy brings a wide variety of bodily changes and can also trigger symptoms of eating disorders. The connection with AN and concerns about weight gain are perhaps best known but, as a recent study showed, other eating disorders, such as BN and binge eating disorder (BED), are also present during pregnancy and the postpartum period.

Dr. Mantala Milembamane and a team at the Division of Food and Nutritional Sciences, Brescia University College, London, Ontario, Canada, examined the association between lifetime maternal eating disorders, including AN, BN, and BED, with low birth weight (LBW) infants, preterm birth (PTB) infants, small for gestational age (SGA) infants, and large for gestational age (LGA) infants. The study also included data on miscarriages (*Can J Diet Practice and Research*. 2024.85:53).

After a thorough review, the authors identified 18 studies that met their criteria. The final review included 6 studies on miscarriage, 11 on PTB, 4 on LBW, 9 on SGA, and 4 on LGA infants. The meta-analysis on BED and PTB included 3 studies, involving a combined sample of 42,068 women.

A marked increase in low birth weights

AN was associated with a 74% increase in the prevalence of LBW and a 39% increase in the prevalence of SGA; BN was associated with a 19% increase in the prevalence of PTB; and BED was associated with a 43% increase in the prevalence of LGA. None of the eating disorders was significantly associated with miscarriage.

Earlier studies

Earlier systematic reviews have investigated the association between eating disorders and birth outcomes, and large studies have made important headway into this topic. For example, das Neves et al. found that AN and BN are positively associated with LBW, and BED is associated with higher birth weights and infants who are LGA (*J Bras Psiquiatr*. 2021. 44:201). Another systematic review found that AN is associated with miscarriage and PTB, and that BN is associated with giving birth to an SGA infant (*Medicina*. 2020.56:352). Reducing the risk is critical, as adverse outcomes increase the risk for infant morbidity and mortality, as well as the development of chronic health conditions in adulthood. For example, PTB is positively correlated with all-cause mortality in adulthood, and both LBW and SGA increase the risk of type 2 diabetes (*Braz J Psychiatry*. 2022. 44: 201).

In a study in Canada, newborns of mothers with AN had up to six times the risk of hypothermia, hypoglycemia, infections, and perinatal death as neonates of healthy mothers (*Can Fam Physician*. 2003. 49:425).

Finally, when Dr. Cynthia Bulik and colleagues explored the impact of eating disorders on birth outcomes in the Norwegian Mother and Child Cohort Study, they found that pre-pregnancy body mass index was significantly lower in mothers with AN and higher in mothers with BED than among control women. Mothers with AN, BN, and BED reported greater weight gain during pregnancy, and more mothers with eating disorders reported smoking during pregnancy. Women with BED had higher birth weight babies, a lower risk of SGA babies, and a higher risk for LGA babies. The absence of differences in birth outcomes in women with AN and eating disorders not otherwise specified may reflect the small sample size and differential severity of illness in general population versus clinical samples. The detection of eating disorders in pregnancy could help identify modifiable factors (e.g., binge eating, smoking) that could influence birth outcomes. This systematic review and meta-analysis found that AN was positively

correlated with LBW and SGA, BN with PTB, and BED with LGA.

The authors' results are important reminders of factors that may influence birth outcomes within eating disorder populations, such as disease status during pregnancy (active or remittent) and that all of these, including gestational weight gain, should be investigated. The authors' study emphasized the importance of screening for eating disorders among pregnant women, and a need for further studies.

In the Next Issue

Highlights of the 2024 iaedp Annual Global Symposium, March 21-24 in Orlando, FL

PLUS

- Insomnia and Anorexia Nervosa
- Making Sense of the Female Athlete Triad and Relative Energy Deficiency
- A review of *Eating Disorders. The Basics*, by Elizabeth McNaught, Janet Treasure, and Jess Griffiths
- Polycystic Ovary Syndrome and Its Link to Eating Disorders
- And much more...

Reprinted from: *Eating Disorders Review*

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