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Review Article

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Eating Disorders in Adults: A Narrative Review

Tiffany Field

University of Miami/Miller School of Medicine and Fielding Graduate University, USA

Corresponding author
Tiffany Field, PhD, University of Miami/Miller School of Medicine and Fielding Graduate University, USA.

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ABSTRACT

This narrative review is based on research on eating disorders published in 2024. The prevalence of eating disorders has ranged from 8% in the world and 9% in the U.S. (10 million females, 1 million males) to a higher rate of 28% in outpatient psychiatric clinics. The various types of eating disorders include anorexia nervosa, bulimia nervosa, binge eating disorder, atypical anorexia nervosa, other specified feeding and eating disorders and orthorexia. The reported negative effects include self-criticism and low self-compassion, injuries and medical complications. The positive effects include low pain and posttraumatic growth. Comorbidities include gastrointestinal problems, sleep disorders, depression, anxiety, and PTSD. Predictors/risk factors include childhood trauma, excessive social media, neuroticism, perfectionism, self-criticism, body dissatisfaction, fears of weight gain and multiple pre-existing conditions. Buffers and interventions include body appreciation, cognitive behavioral therapy (CBT), internet CBT, alternative therapies including art, music and movement therapies and psychedelics. Potential underlying biological mechanisms involve adrenergic activity, inflammation, orexins, tryptophan and serotonin depletion and reduced connectivity in different regions of the brain. Methodological limitations of this literature include the predominance of reviews and meta-analyses versus empirical studies, the combining of the various types of eating disorders in meta-analyses, and the rare multivariate studies to determine the relative significance of risk factors as well as effectiveness of different therapies.

According to a 2024 report by the National Eating Disorders Association, 9% of the U.S. population and 8% of the global population have eating disorders (NEDA). These are accompanied by multiple comorbidities including sleep disorders depression, anxiety, PTSD and substance use disorders, highlighting the significance of research on eating disorders [1,2].

Papers on eating disorders research published in 2024 are summarized in this narrative review. Fifty-two papers were derived from a search on PubMed and PsycINFO entering the terms eating disorders in adults and the year 2024. Exclusion criteria for this review included case studies, proposed protocols, and non-English language papers.

The publications can be categorized as different types of eating disorders, negative and positive effects of eating disorders, comorbidities of eating disorders, predictors/risk factors, buffers and interventions and potential underlying biological mechanisms for eating disorders. Accordingly, this review is divided into sections that correspond to those categories. Although some papers can be grouped in more than one category, 10 papers are focused on different types of eating disorders, 5 papers are focused on the negative and positive effects, 3 papers on comorbidities, 12 papers on predictors/risk factors for eating disorders, 13 papers on buffers and interventions and 5 papers on potential underlying biological mechanisms. A discussion of methodological limitations of this literature appears after those sections.

Different Types of Eating Disorders

Several different types of eating disorders have been identified and are currently diagnosed based on the DSM-5 system. They include anorexia nervosa, bulimia nervosa, binge eating, atypical anorexia, other specified feeding and eating disorders and orthorexia (see table 1).

The major eating disorders of anorexia nervosa, bulimia nervosa and binge eating disorder have rarely been compared in this current literature, although there are a few exceptions. For example, an assessment was made on “mentalization” and

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the uncertainty about mental states in a small sample of adults with **anorexia nervosa, bulimia nervosa** and healthy controls (N= 30 eating disorder and 58 healthy controls) [3]. Both eating disorder groups had "uncertainty about mental states" but the bulimia group had more uncertainty about mental states and they had more alexithymia than the anorexic group. The power of these results is limited due to the small sample size and unequal size samples across groups.

Table 1: Types of eating disorders (and first authors).

Type	First Author
Anorexia nervosa and bulimia	Telleus
Anorexia, bulimia and binge eating	Mitchell
Anorexia nervosa	Sandri
Anorexia nervosa and atypical anorexia	Fitterman-Harris, Johnson-Munguia
Binge eating	Messer
Other specified feeding and eating disorders	Attia
Orthorexia nervosa	Lupi, Huynh, Kucka
Orthorexia nervosa and healthy orthorexia	Brodock

In another study, a sample of adults with anorexia (N=155), bulimia (N=55), binge eating (N=33), and healthy controls (N=505) were compared [4]. The anorexic and bulimic groups had less self-compassion and realistic expectations. The binge eating group was younger and had greater body mass index. This study also had the statistical problem of unequal size groups.

In a large sample of Spanish adults diagnosed with **anorexia nervosa** (N=9692), more women were experiencing this eating disorder than men which is characteristic of all eating disorders [5]. The women also drank more coffee and energy drinks and ate less fried food.

In a study that compared adults with anorexia nervosa versus those with **atypical anorexia** (N= 215 adults with atypical anorexia and 249 with anorexia nervosa), anorexia nervosa was related to more food fears (anxiety about eating, food avoidance and obsessive symptoms) [6]. Those with atypical anorexia were more observant of their weight and shape. Similarly, in a review of 20 studies that compared atypical anorexia versus anorexia, those with atypical anorexia were noted to have more shape concern, more drive for thinness and more body dissatisfaction [7].

In a paper called "An inflexible adherence to food rules mediates the longitudinal association between shape/weight overvaluation and **binge eating**", a sample of adult women were recruited from an online eating disorder platform (N=1760) [8]. Overvaluation of shape and weight at baseline led to inflexible adherence to food rules at three months which, in turn, led to binge eating symptoms at six months.

In research on adults experiencing **other specified feeding and eating disorders**, several subtypes were specified [9]. The subtypes included atypical anorexia, sub-threshold bulimia, sub-threshold binge eating disorder, purging disorder, and night eating syndrome. The labeling of these as sub-threshold implies that they are less severe than the primary eating disorders, although comparisons between subtypes and diagnosed eating disorders did not appear in this current literature.

Orthorexia nervosa is considered a pathological fixation on a healthy diet. In a study on a sample of young adults (N=1317), the prevalence of orthorexia nervosa was 12% with a marked discrepancy across gender (73% in females 27% in males) [10].

In a systematic review and meta-analysis on 31 studies, a significant relationship was noted between orthorexia nervosa and obsessive-compulsive disorder symptoms [11]. In another review of 34 studies on orthorexia nervosa, the diagnosis was defined as an obsession with healthy eating, which leads to a restrictive diet and health problems [12]. Those diagnosed with orthorexia nervosa were noted to have symptoms that were similar to anorexia and bulimia symptoms, but they were thought to serve as a coping mechanism for anorexia, providing a sense of control. The risk factors that were given for orthorexia included eating disorders, losing weight, exercising heavily, developing relationship problems, and having a diagnosis of "body dysmorphic disorder".

Healthy orthorexia, in contrast, has been described as an interest in a healthy diet independent of psychopathology, suggesting a less severe fixation on a healthy diet [13]. In this sample of healthy adults (N=927), those with orthorexia nervosa had lower scores on physical activity than those with healthy orthorexia, suggesting that those with healthy orthorexia were also in better physical condition.

Negative and Positive Effects of Eating Disorders

Both negative and positive effects have been noted for eating disorders in this current literature. The negative effects include self-criticism and low self-compassion, non-suicidal self-injury and medical complications, and the positive effects include low pain, post-traumatic growth and self-compassion (see table 2).

Table 2: Negative and positive effects of eating disorders (and first authors).

Negative effects	First Authors
Self-criticism and low self-compassion	Paranjothy
Non-suicidal self-injury	Kirkpatrick
Medical complications	Baenas
Positive effects	
Low pain	Fazia
Posttraumatic growth	Eaton

In a meta-analysis, 135 eating disorder studies were included (N= 42,952 participants) [14]. In this analysis, a positive relationship was noted between disordered eating and **self-criticism** and a negative relationship was noted between disordered eating and **self-compassion**.

In a review paper entitled "Non-suicidal self-injury among individuals with an eating disorder", 79 studies were reviewed (N= 32,334 participants) [15]. In these studies on individuals

with eating disorders, 35% were said to have **non-suicidal self-injury**. That injury was specifically noted in 23% of those with an anorexia diagnosis, 37% with bulimia, 42% with a bingeing/purging disorder, 21% with binge eating disorder and 38% with other specified feeding and eating disorders.

Medical complications have also been noted for those diagnosed with anorexia nervosa, bulimia nervosa and binge eating disorder [16]. In those adults with anorexia, malnutrition was noted, which was considered reversible with re-nutrition and weight restoration. For those with bulimia and binge eating disorder, hydro-electrolyte and acid-base disturbances were noted which were thought to be less correctible.

Low pain is one of the positive effects of eating disorders. In a study on a comparison between those with an eating disorder (N= 90) and those who were called healthy controls (N= 55), those with eating disorders had less self - reported pain intensity [17]. The relationship between eating disorders and low pain was mediated by depression. Not surprisingly, those who were less depressed had less pain. Again, unequal sample sizes were a statistical problem.

In a study entitled "**Posttraumatic growth** and eating disorder recovery", the title suggests the results [18]. In this sample of those recovering from an eating disorder (N= 28), high scores were noted on the Post-Traumatic Growth Inventory.

Comorbidities of Eating Disorders

Several comorbidities have been noted for eating disorders in this current literature. They include gastrointestinal problems, sleep disorders, mood disorders, PTSD and substance use disorder (see table 3). In a study entitled "Shared genetic influences between eating disorder and gastrointestinal disease", the results are reflected in the title [19]. In this research on female twins (N= 2980) and male twins (N= 2903), eating disorders and **gastrointestinal diseases** were noted to have similar genetic profiles. In this cross-sectional study, directionality could not be determined, but the eating disorders and the gastrointestinal diseases were likely bi-directional or reciprocal. Each could be both a cause and an effect. Concordance data on the identical versus non-identical twin samples would have been informative.

Table 3: Comorbidities of eating disorders (and first authors).

Comorbidities	First Authors
Gastrointestinal diseases	Pascoe
Sleep disturbances	Degasperi
Anxiety	Ho, Bravo, Barlow
Depression	Bremerton, Meier, Fazia
Obsessive-compulsive disorder	Keski-Rahkonen
Mood disorders, PTSD and substance use disorder	Bremerton

In a meta-analysis on 27 studies that focused on sleep quality in adults with eating disorders (N= 711 adults with eating disorders and 653 healthy controls), **abnormal physiological sleep qualities** were noted but only in those with anorexia [1]. In this intervention study, as in most eating disorder intervention studies, cognitive behavioral therapy was the most frequently used therapy.

In a large sample study on the associations between mood disorders and eating disorders, 76% of those adults with eating disorders also had **mood disorders** (N= 2155 patients with eating disorders) [2]. These included depression and anxiety. This sample also experienced more frequent traumatic events and more frequent diagnoses of **PTSD and substance use disorder**.

Predictors/Risk Factors for Eating Disorders

Several predictors/risk factors have been the focus of research on eating disorders. They include childhood sexual abuse, excessive social media, neuroticism, impulsivity, fearfulness, self-criticism, and body dissatisfaction (see table 4). A couple research groups identified multiple predictors/risk factors for the different types of eating disorders.

Table 4: Predictors/Risk Factors for eating disorders (and first authors).

Predictors/Risk Factors	First Authors
Childhood sexual abuse	Eilsen
Excessive social media	Ladwig
Appearance comparison	Fioravanti
Hopelessnes, neuroticism and impulsivity	Zhang
Fears of negative evaluations and intolerance of uncertainty	Battera
Harm avoidance	Ruiz-Gutierrez
Fear of weight gain	Meier
Perfectionism	Mansueto
Self-criticism	Paranjothy
Body dissatisfaction	Zhu
Sociocultural and psychological risk factors	Keski-Rahkonen

In a study on eating disorder inpatients (N = 84), **childhood sexual abuse** was over-represented in those with persistently high eating disorder symptom levels [20]. Those individuals also experienced more severe long-term outcomes.

Excessive social media has been implicated in a couple studies on adults with eating disorders. In one study entitled "Risks and benefits of social media trends", an experiment was conducted that involved showing images of different female body types to adults with eating disorders (N= 172) and adults without eating disorders (N= 210) [21]. An increase in body dissatisfaction occurred after viewing images of thin-muscular women promoting health and wellness. A decrease in body dissatisfaction occurred after viewing images of larger female bodies motivating women to love their bodies.

In a study entitled "The relationship between problematic Instagram use and eating disorder", those with an eating disorder (N=152) versus those without an eating disorder (N = 234) engaged in more Instagram use [22]. The greater use of Instagram led to greater **appearance comparison** and psychological investment in physical appearance. That, in turn, led to body uneasiness which led to eating disorders and interpersonal difficulties. It is unclear why researchers have recruited larger healthy control groups than eating disorder groups, but it is a statistical limitation that pervades this literature.

In a paper entitled "Distinct personality profiles associated with disease risk and diagnostic status in eating disorders", **hopelessness, neuroticism and impulsivity** were salient characteristics of those with anorexia and bulimia [23]. However, these characteristics only explained 12% of the variance in the eating disorder diagnoses. These characteristics may have also been present prior to the eating disorder which the authors assumed in labeling them as risk factors. However, like many of the eating disorder studies, this was a cross-sectional not a longitudinal study, making it impossible to determine direction of effects or causality.

Fearfulness is another personality characteristic that has been reported for adults with eating disorders by a couple research groups. The fears have included fear of negative evaluation and intolerance of uncertainty, the fear of harm, and the **fear of weight gain**. In a study entitled "Fear of negative evaluation and intolerance of uncertainty: Assessing potential internalizing correlates of eating disorders" (N= 236 adults in outpatient treatment for eating disorders), greater **fears of negative evaluations and intolerance of uncertainty** led to greater clinical impairment [24]. Those adults with anorexia and atypical anorexia had greater fear of negative evaluations and those with anorexia, bulimia and atypical anorexia had greater intolerance of uncertainty. These results highlight the differences in personality characteristics across different eating disorders and they suggest that eating disorders should not be assessed collectively but rather compared as different disorders.

In still another study on personality characteristics and eating symptoms in those with eating disorders (N=320) versus healthy controls (N=192), those with eating disorders had less self-directedness and **greater harm avoidance** [25]. Another research group explored the fears that mediated the relationship between depression and eating disorders [26]. They reported that the fear of others seeing you eating and the **fear of weight gain** and loss of control and overeating mediated the relationship between depression and eating disorders. But they also noted that there was a loss of interest, low self-esteem and sad feelings among those showing depressive symptoms which could have also contributed to the relationship between depression and eating disorders. And those with eating disorders also ate "in secret". Multi-variable studies like these would have been more informative if regression analyses or structural equation modeling had been conducted to determine the relative contribution of the different personality characteristics as risk factors for the eating disorders.

Perfectionism and self-criticism have also been reported for adults with eating disorders. In a paper entitled "The mediating role of emotional dysregulation in association between perfectionism and eating psychopathology symptoms combined", the results are given in the title [27]. **Perfectionism** led to emotional dysregulation which led to shape and weight concern which led to eating disorders. The problem with mediation analysis is that the predictor and mediating variables are selected in advance, typically based on the theoretical orientation of the researcher, suggesting potentially biased results.

In a paper entitled "A meta-analysis of disordered eating and its association with self -criticism and self-compassion", 135 studies were included (N = 42,952 participants) [14]. Greater **self-criticism** was positively related to eating disorders and negatively related to self-compassion.

Body dissatisfaction has been a frequently noted risk factor for eating disorders. Daily instability in body dissatisfaction has also been described based on diary recordings that were made five times a day for 14 days in a recent study (N =166 adults with eating disorders and 44 healthy controls) [28]. In this study, those with eating disorders showed daily instability of body dissatisfaction.

In a review of the recent literature on eating disorders, several **sociocultural and psychological risk factors** were elaborated [29]. The sociocultural risk factors included several seemingly disparate factors including the pressure to conform to gendered body ideals, increased obesogenic environment, COVID, screen time, sports and traumatic life events. The psychological factors included disgust sensitivity, low self-esteem, perfectionism, neuroticism, impulsivity and emotional dysregulation. Pre-existing mental health conditions included anxiety, depression, obsessive compulsive disorder, PTSD, autism and ADHD. Many of the risk factors included in this database have appeared as separate risk factors in the current (2024) eating disorder literature. Unfortunately, this rich multi-variable database was not analyzed for the relative variance explained by these different variables.

Buffers and Interventions for Eating Disorders

Buffer

Only one study in this current literature suggested a buffer for an eating disorder [30]. **Body appreciation** predicted lower levels of symptoms in a sample of adult women with orthorexia nervosa (N= 1,253, mean age= 34). In this study, body appreciation at baseline led to fewer orthorexia nervosa symptoms three months later. Given that body dissatisfaction was a frequently noted risk factor in earlier literature on eating disorders, body appreciation as reported here for orthorexia nervosa could be a relevant buffer for several other types of eating disorders.

Interventions

Several interventions have appeared in this current literature on eating disorders. They include cognitive behavioral therapy (CBT) as well as different CBT behavioral change techniques and exposure, Internet therapies, alternative therapies including music, art and movement therapies and psychedelics (see table 5).

Cognitive behavioral therapy has been the most frequently studied intervention for eating disorders. In a study on CBT for eating disorders (N= 226), social anxiety disorder symptoms were decreased [31]. In a review of 50 studies (N=4,299 participants), large effects were noted at post-treatment and follow-up assessments nine months later [32]. However, an attrition rate of 26% was high as was the rate of bias.

In another review on CBT for adults with eating disorders, two eating disorders were involved including anorexia and bulimia [33]. For anorexia, family therapy was effective, but no medications were approved. For bulimia, CBT was the most effective therapy and only one medication was approved (Fluoxetine).

Table 5: Buffers and interventions for eating disorders (and first authors).

Buffer	First Authors
Body appreciation	Liu
Interventions	
Cognitive behavioral therapy	Ho, Ost, Grilo
Internet-based cognitive behavioral therapy	Hamid, Penwell
Behavior change techniques	Thomas
Compassion focused therapy	Vrabel
Imaginal focused therapy	Williams
Alternative therapies	
Art and music therapies	Bettin
Movement therapies	Bravo
Psychedelics	Cuerva
Compliance and attrition	Blackburn

CBT has rarely been compared with other forms of treatment, although in this current literature it was compared to **compassion focused therapy** (CFT) in two studies by the same research group. In the first of these, CBT was compared to CFT in a randomized controlled trial [34]. In this sample (N=130 adults with eating disorders, mean age =31, mean duration eating disorder=14 years), the therapies were expected to decrease compulsive exercise. The CFT was more effective than CBT for decreasing compulsive exercise. The underlying mechanism for this difference was not suggested by these authors.

In another paper by the same authors on the same sample, compassion focused therapy was referred to as compassion focused therapy for eating disorders (CFT-E) [35]. The result reported in this paper was that CFT-E maintained greater benefits at a one-year follow-up assessment for those who specifically had a childhood trauma history.

At least two **Internet-based** CBT studies have appeared in this current literature on eating disorders. In one of these studies, cognitive symptoms showed greater improvement than behavior symptoms [36]. In another study, traditional CBT was compared with virtual CBT [37]. Binge eating decreased in the virtual therapy group, while body mass index decreased in the traditional CBT group. The reduction in binge eating following internet-based CBT is promising as that form of CBT could be available to more individuals with eating disorders in general for its easy delivery and cost-effectiveness.

Behavior change techniques within digital interventions for treatment of eating disorders were the focus of a current literature review [38]. In all the intervention studies in this review, 14 behavior change techniques were studied. In all the interventions, self-monitoring of behavior was a primary technique. In 75% of the effective interventions, the behavior change techniques included problem-solving, information about antecedents, feedback on behaviors, self-monitoring of outcomes of behavior and action planning.

In a paper entitled "State mechanisms of change in eating disorder symptoms and fears", four sessions of **imaginal exposure therapy** were given (N=143) [39]. This behavior change technique reduced body dissatisfaction, but not drive for thinness.

Alternative Therapies

Only a couple papers on alternative therapies have appeared in this current literature on eating disorders. They include music, art, and movement therapies. In a review on 8 studies on visual **art and music** - based interventions, both types of interventions reduced negative emotional states in adults with eating disorders [40].

In a review on 11 studies on **movement therapies** (N= 437 eating disorder patients), yoga, body awareness therapy, dance, and psychomotor therapy were assessed [41]. Following these movement therapies, eating disorder symptoms decreased along with anxiety, emotional dysregulation, and self- criticism. In addition, self-confidence, self-compassion, body attitudes, and quality of life increased.

Psychedelics were the only medicinal intervention found in this current literature on treatments for eating disorders. In a systematic scoping review on 17 studies, a reduction was noted in eating disorder symptoms [42].

Unfortunately, despite these effective treatments, **compliance and attrition rates** have been reportedly high in at least one review (N= 671) [43]. According to these authors, only 34% of referred eating disorder patients started treatment and only 16% completed treatment. The referral acceptance rate was correlated with younger age. The commencement rate was correlated with comorbid depression and anxiety disorder, and no previous suicide attempts. The treatment completion rate was correlated with no previous hospitalizations for psychiatric issues, no previous suicide attempts, a history of psychiatric medication use, and family-based therapy. Unfortunately, these data were not submitted to analyses that assessed the relative contribution of these variables to the compliance/completion rates.

Potential Underlying Biological Mechanisms for Eating Disorders

Potential underlying biological mechanisms have been reported in the current literature on eating disorders. They include a dysfunctional adrenergic system, inflammation, orexins, depleted tryptophan and serotonin and dysregulated connectivity (see table 6).

Table 6: Potential underlying biological mechanisms for eating disorders (and first authors).

Mechanism	First Authors
Adrenergic dysregulation	Pruccoli
Inflammatory biomarkers	Dani
Orexins/hypocretins	Steward
Increased and decreased functional connectivity	Chen

In a systematic review on the involvement of the adrenergic system in eating disorders, 31 studies reported **adrenergic dysregulation** [44]. In this model, greater epinephrine agents

regulating adrenaline-noradrenaline neurotransmission (for example, duloxetine) decreased eating disorder symptoms for anorexia, bulimia, and binge eating.

In a systematic review and analysis of 51 studies on **inflammatory biomarkers** and eating disorders, the disorders included anorexia, bulimia and binge eating [45]. The inflammatory biomarkers contributing to these eating disorders included TNF - alpha, and IL -beta.

Orexins/hypocretins have also been implicated in eating disorders [46]. These neuropeptides that regulate arousal, wakefulness and appetite can lead to overeating, or they can be used as a supplement for conditions like anorexia to facilitate weight gain.

In a paper entitled "New perspectives on anorexia nervosa: tryptophan-kynurenine pathway hypothesis", **decreased tryptophan** in anorexia led to less **serotonin synthesis**" [47]. This could have resulted from eating less food containing tryptophan.

In a paper entitled "Neuroimaging studies of resting state functional magnetic resonance imaging and eating disorders", both **decreased and increased functional connectivity** were noted in different regions of the brain [48]. Decreased functional connectivity was reported for areas associated with facial information processing and social cognition, including the dorsal anterior cingulate cortex. Increased connectivity was noted in regions linked to sensory stimulation, aesthetic judgment, and social anxiety. These regions included the posterior cingulate cortex and the medial prefrontal cortex.

Methodological Limitations of this Literature

Methodological limitations can be noted for the literature reviewed here. This literature was primarily comprised of systematic reviews and meta-analyses with very few empirical studies. This may be related to the significant advances that had been made in earlier research on eating disorders, suggesting that it was now possible to conduct systematic reviews and meta-analyses. However, in the meta-analyses, different types of eating disorders were included (typically anorexia, bulimia and binge eating). Several studies comparing these disorders reported different negative effects and risk factors for the different disorders, suggesting that combining the different disorders may have resulted in the low effect sizes and inconclusive data reported for several meta-analyses.

In the case of the empirical studies, most were cross-sectional with one data point as opposed to being longitudinal, making directionality or causality impossible to determine. Several variables have been treated as both predictors and negative effects by different researchers, suggesting bi-directionality of risk factors and effects.

Very few multi-variable studies appeared in this literature, making it difficult to determine the relative significance of the risk factors or the severity of the negative effects. In those few multi-variable studies that appeared in this literature, the predictors/risk factors were not entered into regressions or structural equation modeling, so their relative contributions to the eating disorder were not determined. The relative severity of these disorders and the degree to which they contributed to the negative effects were also not determined.

Comorbidities, for example, substance use disorder, that are often comorbid with eating disorders were rarely considered. The rarity of potential underlying mechanism papers was also a limitation of this literature

In those studies that involved comparison groups, the samples were often unequal sizes which is a statistical problem. The absence of active control groups in the therapy studies is problematic as having passive control groups leads to inconclusive findings. Surprisingly, waitlist control groups were not used. Further, although many of the intervention researchers reported positive effects, the eating disorder symptoms were not always decreased. And,surprisingly, none of the intervention studies focused on medications even though they are increasingly being used for eating disorders.

Despite these methodological limitations, this current eating disorders literature has been informative with respect to effective interventions. The negative effects literature highlights the need for more empirical studies on risk factors to identify those who need intervention.

References

1. Degasperi G, Meneo D, Curati S, Cardi V, Baglioni C, et al. Sleep quality in eating disorders: A systematic review and meta-analysis. Sleep Med Rev. 2024. 77: 101969.
2. Brewerton TD, Gavidia I, Suro G, Perlman MM. Associations between major depressive and bipolar disorders and eating disorder, PTSD, and comorbid symptom severity in eating disorder patients. Eur Eat Disord Rev. 2024. 32: 188-200.
3. Kjaersdam Telléus G, Simonsen CB, Jakobsen AG, Dalgaard MK, Rasmussen SM, et al. A multifaceted approach to assessment of mentalization: the mentalization profile in patients with eating disorders. Nord J Psychiatry. 2024. 78: 146-152.
4. Mitchell JS, Huckstepp T, Allen A, Louis PJ, Anijärv TE, et al. Early adaptive schemas, emotional regulation, and cognitive flexibility in eating disorders: subtype specific predictors of eating disorder symptoms using hierarchical linear regression. Eat Weight Disord. 2024. 29: 54.
5. Sandri E, Sguanci M, Cantín Larumbe E, Cerdá Olmedo G, et al. Influence of Nutrition, Lifestyle Habits, and Socio-Demographic Determinants on Eating Disorder Symptoms in the Spanish Young Adult Population: A Cross-Sectional Nationwide Survey. Medicina (Kaunas). 2024. 60: 1565.
6. Fitterman-Harris HF, Han Y, Osborn KD, Faulkner LM, Williams BM, et al. Comparisons between atypical anorexia nervosa and anorexia nervosa: Psychological and comorbidity patterns. Int J Eat Disord. 2024. 57: 903-915.
7. Johnson-Munguia S, Negi S, Chen Y, Thomeczek ML, Forbush KT. Eating disorder psychopathology, psychiatric impairment, and symptom frequency of atypical anorexia nervosa versus anorexia nervosa: A systematic review and meta-analysis. International Journal of Eating Disorders. 2024. 57: 761-779.
8. Messer M, Eckley T, Milesi M, Storey L, Linardon J. An inflexible adherence to food rules mediates the longitudinal

association between shape/weight overvaluation and binge eating. J Psychiatr Res. 2024. 169: 378-381.
9. Attia E, Guarda AS. OSFED Subtypes: The Need for Better Definitions. Int J Eat Disord. 2024. 57: 2053-2055.
10. Lupi M, Carano A, Carlucci M, Acciavatti T, Pettorruso M, et al. Prevalence of Orthorexia Nervosa in a sample of italian young adults. Clin Ter. 2024. 175: 125-127.
11. Huynh PA, Miles S, de Boer K, Meyer D, Nedeljkovic M. A systematic review and meta-analysis of the relationship between obsessive-compulsive symptoms and symptoms of proposed orthorexia nervosa: The contribution of assessments. Eur Eat Disord Rev. 2024. 32: 257-280.
12. Łucka I, Mazur A, Łucka A, Sarzyńska I, Trojniak J, et al. Orthorexia as an Eating Disorder Spectrum-A Review of the Literature. Nutrients. 2024. 16: 3304.
13. Brodock JL, Hopfer H, Masterson TD, Hayes JE. Orthorexia Nervosa and Healthy Orthorexia in a Physically Active North American Population. Nutrients. 2024. 16: 1107.
14. Paranjothy SM, Wade TD. A meta-analysis of disordered eating and its association with self-criticism and self-compassion. Int J Eat Disord. 2024. 57: 473-536.
15. Kirkpatrick RH, Breton E, Biorac A, Munoz DP, Booij L. Non-suicidal self-injury among individuals with an eating disorder: A systematic review and prevalence meta-analysis. Int J Eat Disord. 2024. 57: 223-248.
16. Baenas I, Etxandi M, Fernández-Aranda F. Medical complications in anorexia and bulimia nervosa. Med Clin (Barc). 2024. 162: 67-72.
17. Fazia G, Carbone EA, Rania M, Quirino D, Aloi M, et al. Pain experience in eating disorders: The mediating role of depression, alexithymia and interoceptive awareness. Eur Eat Disord Rev. 2024. 32: 148-160.
18. Eaton CM, Phillips KE. Posttraumatic growth in eating disorder recovery. Arch Psychiatr Nurs. 2024. 49: 38-46.
19. Pascoe LA, Mikhail ME, Burt SA, Culbert KM, Klump KL. Shared genetic influences between eating disorders and gastrointestinal disease in a large, population-based sample of adult women and men. Psychol Med. 2024. 54: 1184-1195.
20. Eielsen HP, Ulvenes P, Hoffart A, Rø Ø, Rosenvinge JH, et al. Childhood trauma and outcome trajectories in patients with longstanding eating disorders across 17 years. Int J Eat Disord. 2024. 57: 81-92.
21. Ladwig G, Tanck JA, Quittkat HL, Vocks S. Risks and benefits of social media trends: The influence of "fitspiration", "body positivity", and text-based "body neutrality" on body dissatisfaction and affect in women with and without eating disorders. Body Image. 2024. 50: 101749.
22. Fioravanti G, Cassioli E, Rossi E, Lucherini Angeletti L, Casale S, et al. The relationship between problematic Instagram use and eating disorders psychopathology: an explanatory structural equation model. Soc Psychiatry Psychiatr Epidemiol. 2024. 59: 1617-1627.
23. Zhang Z, Robinson L, Campbell I, Irish M, Bobou M, et al.; IMAGEN; ESTRA; STRATIFY Consortia. Distinct personality profiles associated with disease risk and diagnostic status in eating disorders. J Affect Disord. 2024. 360: 146-155.
24. Bottera AR, Dougherty EN, Todorov S, Wildes JE. Fear of negative evaluation and intolerance of uncertainty: Assessing potential internalizing correlates of eating disorder-related clinical impairment and differences across diagnostic presentations. Eat Behav. 2024. 53: 101869.
25. Ruiz-Gutiérrez J, Miras-Aguilar MDM, Rodríguez-Pérez N, Ventura L, González Gómez J, et al. Bridging personality dimensions and eating symptoms: A transdiagnostic network approach. Eur Eat Disord Rev. 2024. 32: 930-942.
26. Meier M, Summers BJ, Buhlmann U. Which Symptoms Bridge Symptoms of Depression and Symptoms of Eating Disorders?: A Network Analysis. J Nerv Ment Dis. 2024. 212: 61-67.
27. Mansueto G, Sassaroli S, Ruggiero GM, Caselli G, Nocita R, et al. The Mediating Role of Emotion Dysregulation in the Association Between Perfectionism and Eating Psychopathology Symptoms. Clin Psychol Psychother. 2024. 31: e3020.
28. Zhu LY, Trolio V, Miller AE, Bicaker E, Racine SE. Daily instability in body dissatisfaction in individuals with and without eating disorders. Body Image. 2024. 49: 101688.
29. Keski-Rahkonen A. Eating disorders: etiology, risk factors, and suggestions for prevention. Curr Opin Psychiatry. 2024. 37: 381-387.
30. Liu C, Messer M, Anderson C, McClure Z, Linardon J. Body appreciation predicts lower levels of orthorexia nervosa symptoms: Prospective findings. Body Image. 2024. 48: 101684.
31. Ho PL, Erceg-Hurn DM, McEvoy PM, Campbell BNC, Mathersul DC, et al. Examining co-occurring social anxiety in cognitive behavioral therapy for eating disorders: Does it change and does it moderate eating disorder outcomes? Int J Eat Disord. 2024. 57: 1776-1782.
32. Öst LG, Brattmyr M, Finnes A, Ghaderi A, Havnen A, et al. Cognitive behavior therapy for adult eating disorders in routine clinical care: A systematic review and meta-analysis. Int J Eat Disord. 2024. 57: 249-264.
33. Grilo CM. Treatment of Eating Disorders: Current Status, Challenges, and Future Directions. Annu Rev Clin Psychol. 2024. 20: 97-123.
34. Vrabel KR, Waller G, Goss K, Wampold B, Kopland M, et al. Cognitive behavioral therapy versus compassion focused therapy for adult patients with eating disorders with and without childhood trauma: A randomized controlled trial in an intensive treatment setting. Behav Res Ther. 2024. 174: 104480.
35. Vrabel KR, Bratland-Sanda S. Effects of inpatient treatment on compulsive exercise in adults with longstanding eating disorders: Secondary analysis from a randomized controlled trial with 12-month follow-up. Int J Eat Disord. 2024. 57: 437-449.
36. Hamid N. Internet-based cognitive behaviour therapy for the prevention, treatment and relapse prevention of eating disorders: A systematic review and meta-analysis. Psych J. 2024. 13: 5-18.
37. Penwell TE, Smith M, Ortiz SN, Brooks G, Thompson-Brenner H. Traditional versus virtual partial hospital programme for eating disorders: Feasibility and preliminary comparison of effects. Eur Eat Disord Rev. 2024. 32: 163-178.
38. Thomas PC, Curtis K, Potts HWW, Bark P, Perowne R, et al. Behavior Change Techniques Within Digital Interventions for the Treatment of Eating Disorders: Systematic Review and Meta-Analysis. JMIR Ment Health. 2024. 11: e57577.

39. Williams BM, Brown ML, Levinson CA. State mechanisms of change in eating disorder symptoms and fears during an online imaginal exposure treatment for eating disorders. J Affect Disord. 2024. 351: 499-506.
40. Pedra Cruz Bettin B, Urquiza Nogueira L, Bertasso de Araujo PA, Antunes LC. Visual art- and music-based interventions as adjuvants in the treatment of eating disorders: a systematic review and a theoretical model. Arts Health. 2024. 16: 167-188.
41. Bravo C, Hernández-García D, Trinidad-Fernández M, Badia G, Solé S, et al. Movement Awareness Therapies in Eating Disorders: A Systematic Review and Meta-Analysis. Nurs Health Sci. 2024. 26: e13181.
42. Cuerva K, Spirou D, Cuerva A, Delaquis C, Raman J. Perspectives and preliminary experiences of psychedelics for the treatment of eating disorders: A systematic scoping review. Eur Eat Disord Rev. 2024. 32: 980-1001.
43. Blackburn R, Tonta KE, Erceg-Hurn DM, Raykos BC, McEvoy PM. Opportunities lost? Rates and predictors of attrition in an eating disorders outpatient service. Eat Behav. 2024. 54: 101898.
44. Pruccoli J, Parmeggiani A, Cordelli DM, Lanari M. The involvement of the adrenergic system in feeding and eating disorders. A systematic review. World J Biol Psychiatry. 2024. 25: 1-15.
45. Dani C, Tarchi L, Cassioli E, Rossi E, Merola GP, et al. A transdiagnostic and diagnostic-specific approach on inflammatory biomarkers in eating disorders: A meta-analysis and systematic review. Psychiatry Res. 2024. 340: 116115.
46. Steward T. Endocrinology-informed neuroimaging in eating disorders: GLP1, orexins, and psilocybin. Trends Mol Med. 2024. 30: 321-323.
47. Alberts C, Owe-Larsson M, Urbanska EM. New Perspective on Anorexia Nervosa: Tryptophan-Kynurenine Pathway Hypothesis. Nutrients. 2023. 15: 1030.
48. Chen X, Ai C, Liu Z, Wang G. Neuroimaging studies of resting-state functional magnetic resonance imaging in eating disorders. BMC Med Imaging. 2024. 24: 265.
49. Barlow IU, Lee E, Saling L. Orthorexia nervosa versus healthy orthorexia: Anxiety, perfectionism, and mindfulness as risk and preventative factors of distress. Eur Eat Disord Rev. 2024. 32: 130-147.
50. Velkoff EA, Lusich R, Kaye WH, Wierenga CE, Brown TA. Early change in gastric-specific anxiety sensitivity as a predictor of eating disorder treatment outcome. Eur Eat Disord Rev. 2024. 32: 905-916.