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### EATING DISORDER: ANOREXIA NERVOSA

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**DOI:** 10.35631/IJEPC.1061099**This work is licensed under** [CC BY 4.0](#)**Abstract:**

This paper explores Anorexia Nervosa (AN), a complex eating disorder influenced by psychological, biological and social factors. Using a literature review methodology, the study identifies three key themes underlying the development of AN. Psychologically, a sense of self disgust is a prominent contributor. Biologically, neurochemical imbalances, genetic predisposition, and executive function deficits play significant roles in the onset and persistence of AN, with the latter contributing to rigid thinking, impaired decision-making, and difficulty adapting to healthier behaviors. Social factors, including weakened familial relationships, social isolation, lifestyle changes, and heightened sensitivity to social attention, may exacerbate AN by fostering a reduced positive environment and reinforcing preoccupation with external validation and self-image. The study also highlights treatment strategies such as family-based treatment, cognitive-behavioral therapy (CBT), deep brain stimulation and medical interventions as essential approaches to managing AN. The paper also discusses the rising prevalence of AN in the context of social media and highlights early intervention strategies to mitigate its effect. From an Islamic perspective, the concept of Amanah (trust) underscores the responsibility of caring for one's body as a divine creation, emphasizing Wasatiyyah (moderation) and self-care as core values. This study examines the interplay of psychological, biological and social factors in understanding AN, linking its prevalence to the influence of social media. It also explores the importance of early awareness and the principle of Amanah and Wasatiyyah in fostering a balanced perspective on body care.

**Keywords:**

Anorexia Nervosa, Psychological Factors, Biological Factors, Social Factors, Treatment, Social Media Influence, Early Intervention, Amanah, Wasatiyyah

**Introduction**

Anorexia nervosa (AN) is a severe and fatal illness for which despite decades of research, there are currently no physiologically informed evidence-based therapies for this disorder (Bulik et al., 2021). Anorexia nervosa is described as a psychiatric illness disorder which is caused by a huge fear of weight gain, disturbances in body image and limitation of energy intake which will lead to remarkably low body weight (American Psychiatric Association, 2014). This disorder is characterized by starving oneself, severe malnutrition and decreased quality of life which might result in many health complications later in life. These include self-imposed calorie restriction, a severe fear of obesity, obsessive body image, and amenorrhea (Mohajan & Mohajan, 2024). The individuals have a fear of gaining weight excessively so they resort to not eating or food avoidance even though they are either in average weight or underweight. They perceive continued weight loss as an achievement and successful self-control while even a slight increase in weight will be viewed as a sign of weakness and failed self-control (Pattanayak et al., 2022). Anorexia Nervosa is most experienced by adolescents and younger adults with a peak between 15-19 years old and is more prevalent in females (Lukas et al., 2022; Mohajan & Mohajan, 2024).

Mohajan and Mohajan (2024) stated that AN is a complex illness that branches into multiple aspects such as behavioral, emotional, cognitive, and physiological. Genetic predisposition and an interaction of social, cultural, and environmental variables are linked to this disorder. Some of the physical consequences of these disorders include arrhythmias, dizziness, anemia,

hypotension, leukopenia and amenorrhea (Robert-McComb et al., 2013). Due to its severe complications from multiple aspects, this disease could become life-threatening if no prevention and intervention are taken to the individuals who struggle with this illness. This disease is a complex disorder that requires a comprehensive approach to treatment which addresses not only the physical aspects but also the psychological and social factors that sustain it.

### **Methodology**

A comprehensive and systematic search strategy was employed to compile the literature used in this review. The search was conducted through online academic databases such as Google Scholar, National Library of Medicine, Science Direct and a few library databases for electronic books. To expand and specify search results, Boolean operators (AND, OR) were applied during the search process. Additionally, related keywords were used such as, “eating disorder,” “anorexia nervosa,” “the physiology of anorexia nervosa,” “therapeutic approach,” and “treatments of anorexia nervosa.”

### ***Inclusion and Exclusion Criteria***

The publications included in this review were articles with original research, article reviews, chapters from relevant books and case studies on patients with AN, published between January 2017 to December 2024. To limit the scope of research, we excluded thesis and dissertation publications and grey literature. Additionally, all papers published in languages other than English were excluded to avoid misinterpretation of data.

### ***Data Extraction***

A standardized form was developed for this review, allowing a specific and systematic data extraction. The data extracted included the research design, the objective(s) of study, research findings and limitation of research for future directions. Lastly, the information gathered was organized in a meaningful narrative.

### **Findings**

#### ***Psychological Factors***

Glashouwer and Jong (2021) argue that a core motivational driver in anorexia nervosa (AN) is **self-disgust**—a pervasive, aversive emotional response directed towards the self. In AN, self-disgust commonly manifests as intense rejection of food, body shape, and body weight. This response is often amplified in contexts where social norms equate attractiveness with thinness and convey the message that deviation from a narrow “ideal” body is unacceptable. When thinness is treated as a prerequisite for social approval, individuals who are vulnerable to negative self-evaluation may develop an escalating fear of weight gain and increasingly rigid attempts to control eating.

Adolescence is a particularly sensitive developmental period for these processes. Heightened self-consciousness and perceived social evaluation can increase susceptibility to body image concerns, especially when adolescents believe they are constantly observed and judged. For some, this may lead to repetitive body checking (e.g., mirror-checking) and a progressively distorted body perception, in which the body is experienced as larger than it is. Such distortion can intensify shame, reduce help-seeking, and promote withdrawal from supportive relationships. Consistent with this, Pattanayak et al. (2022) note that media-driven messages

and social pressure—particularly those directed at women—may contribute to the adoption of extreme weight-control behaviours, including prolonged fasting or severe caloric restriction.

Importantly, self-disgust and harsh self-criticism can become obstacles to recovery. When individuals view themselves as fundamentally flawed or unworthy, engagement with treatment may be reduced and relapse risk may increase. For this reason, it is not sufficient to focus only on eating behaviours: interventions must also address the underlying emotional and self-evaluative processes that sustain restriction and avoidance. Pattanayak et al. (2022) further suggest that AN may be tied to broader emotional motivations relating to achievement (e.g., career, education, fitness), alongside low self-esteem and persistent feelings of inadequacy. Together, these patterns indicate that psychological vulnerability in AN often involves not only body-related distress but also a wider self-schema of worthlessness and failure.

At the same time, while disgust is a normal emotion, it becomes clinically significant when it is chronic, self-directed, and translated into extreme behaviours that undermine health and functioning. Prevention therefore requires not only individual-level support but also a wider shift in the social environment. Families—especially parents—can serve as primary protective influences by modelling compassion, non-appearance-based affirmation, and balanced attitudes towards food and body image. At the societal level, it is essential to promote body diversity and reduce weight-based shaming and discrimination. Messages that encourage health should not be framed as moral judgement or a hierarchy of bodies. When media and technology represent diverse body shapes respectfully, they can challenge rigid beauty narratives and reduce the belief that worth is conditional on appearance.

However, prevention efforts should also avoid simplistic solutions. For example, “quick transformation” dieting trends, including liquid-diet practices pursued for rapid weight change, may normalise harmful restriction and increase risk for disordered eating. A public health approach must therefore prioritise safe, evidence-informed messaging that discourages extreme methods and reduces stigma, while supporting resilience, identity development, and self-esteem in adolescents.

## ***Biological Factors***

### ***Neurochemical Imbalances***

Biological mechanisms can contribute to both the emergence and maintenance of AN, particularly through neurochemical and hormonal dysregulation. Restrictive intake may reduce dietary **tryptophan**, an essential amino acid required for the synthesis of **serotonin (5-HT)**. Reduced serotonin availability can be associated with low mood and disruptions in appetite and satiety regulation, potentially increasing vulnerability to rigid eating patterns and affective symptoms. In addition, hunger-signalling hormones may become dysregulated during prolonged restriction. For instance, **ghrelin** (often described as a hunger hormone) may rise during starvation states, yet changes during refeeding can complicate hunger regulation and contribute to distress during nutritional rehabilitation.

Neurotrophic pathways have also been linked to eating-related regulation. **Brain-derived neurotrophic factor (BDNF)** may influence appetite and energy balance through its receptor-binding mechanisms (Robert-McComb et al., 2013). Disruption across these interrelated

systems can contribute to the persistence of AN by altering mood, reward processing, and hunger cues.

### ***Physiological Consequences and Neurocognitive Effects***

The physical consequences of prolonged restriction can be severe and systemic. Individuals with AN may present with markedly low body weight and visible signs of malnutrition; the integumentary system can be affected (e.g., brittle nails, hair loss, lanugo) (Robert-McComb et al., 2013). Gastrointestinal adaptation may also occur, including delayed gastric emptying and sensations of fullness and bloating, which can make normal eating patterns difficult to re-establish. In severe cases, the body prioritises immediate survival needs at the expense of reproductive function; amenorrhoea can occur due to disrupted hormonal regulation and insufficient energy availability.

Beyond physical symptoms, malnutrition can impair daily functioning through fatigue, weakness, and reduced endurance. Cognitive effects—including reduced cognitive flexibility, impaired concentration, and memory difficulties—are clinically important because they can undermine treatment engagement and decision-making. Hypercortisolism associated with prolonged stress and nutrient deficiency may further impair mental clarity (Glashouwer & Jong, 2021; Robert-McComb et al., 2013). These biological and cognitive consequences can create a self-reinforcing cycle: physical depletion worsens cognitive control and emotional regulation, which in turn reduces capacity to adhere to treatment plans.

### ***Executive Function and Cognitive Rigidity***

Executive function deficits are increasingly recognised in AN, particularly difficulties in set-shifting (cognitive flexibility), planning, and attention regulation (Zanella & Lee, 2022). Such deficits may contribute to inflexible, rule-bound thinking and make behavioural change more challenging. Impaired impulse control may also sustain compulsive restriction or excessive exercise despite awareness of harm. Attention regulation difficulties can manifest as persistent hyper-focus on calorie counting and body checking, limiting the ability to shift attention towards adaptive coping and recovery-oriented goals (Zanella & Lee, 2022).

### ***Genetic Factors***

Evidence suggests that genetic vulnerability contributes meaningfully to AN. Donato et al. (2022) and Pattanayak et al. (2022) describe substantial heritability estimates, and note increased risk among first-degree relatives. Multiple candidate systems have been discussed in the literature, including serotonergic and dopaminergic pathways, opioid signalling, appetite-regulating hormones (e.g., leptin, ghrelin), the endocannabinoid system, and vitamin D3-related mechanisms (Donato et al., 2022). These systems are relevant because they intersect with appetite, reward sensitivity, anxiety, mood regulation, and cognitive control—domains commonly affected in AN.

Nevertheless, genetic predisposition should not be framed as determinism. Genetic factors likely interact with environmental influences (e.g., social pressure, relational stressors) and psychological traits (e.g., perfectionism, self-criticism). Clinically, this supports a biopsychosocial understanding: treatments are most effective when they address behavioural patterns, emotional drivers, relational contexts, and biological stability together.

Your final paragraph in this section usefully links pathways to treatment options (e.g., SSRIs, olanzapine, nutritional rehabilitation, vitamin D3 supplementation), but it will read more



academically if you present these as potential adjuncts rather than direct “solutions,” because medication response in AN is variable and nutritional restoration remains foundational.

### ***Social Factors***

Lukas et al. (2022) examined the roles of parental and peer relationships and alexithymia (difficulty identifying and describing emotions) in adolescents with AN. Their sample included 35 female adolescents with AN and 40 healthy controls (aged 12–18), using self-report measures of relationship quality, alexithymia, and eating-disorder symptoms. The authors reported poorer perceived relationships and higher alexithymia in the AN group. Alexithymia fully mediated the association between poor parental relationships and eating-disorder symptoms and partially mediated the association with peer relationship quality.

This work highlights two clinically relevant points. First, relational strain may increase vulnerability when emotional awareness and expression are limited. Second, improving emotional literacy may be a mechanism through which relational interventions reduce symptoms. At the same time, the study’s reliance on self-report and its group composition (female adolescents) are important limitations to acknowledge when generalising to wider populations.

The case series by Ünver et al. (2020) provides further context by describing three adolescent cases of AN emerging during the COVID-19 pandemic. The paper illustrates how abrupt routine disruption, confinement, and increased online exposure may coincide with rapid symptom development in vulnerable individuals. However, as a three-case report, it cannot establish prevalence, causality, or typicality. Its strength lies in highlighting plausible risk pathways during crises and reinforcing the need for early detection and responsive support systems.

More recently, socio-cognitive processes such as social attention have also been discussed. Kerr-Gaffney et al. (2021) reported atypical patterns of social attention in individuals with AN, including reduced time attending to faces during social interaction tasks. Reduced attention to facial cues may limit social learning and emotional decoding, potentially contributing to isolation and weakening protective relationships. Notably, the study suggested that these attentional differences were not fully explained by self-reported social motivation, pointing towards perceptual or neuropsychological contributors (Kerr-Gaffney et al., 2021). Clinically, this supports interventions that target not only family dynamics but also emotion recognition, social skills, and attention training, where appropriate.

### **Treatments and Intervention Models**

A useful way to integrate treatment options is to link them to a cognitive-behavioural maintenance model of AN. In many patients, restrictive eating is maintained by overvaluation of shape/weight, fear of weight gain, anxiety reduction through control, rigid rules, and reinforcement from social environments. Interventions target these maintaining mechanisms at different levels—behavioural, cognitive, emotional, familial, and (in severe cases) neurobiological.

#### ***Family-Based Treatment (FBT)***

Family-Based Treatment (FBT), also termed the Maudsley method, is widely used for adolescents (Rienecke, 2017 as cited in Muratore & Attia, 2021). FBT typically progresses

through three phases: (1) parents take responsibility for restoring nutrition and interrupting restrictive patterns; (2) control is gradually returned to the adolescent as weight and behavioural stability improve; and (3) therapy shifts toward adolescent identity development and family relationships. Within a maintenance model, FBT can be understood as altering the home environment so that restrictive behaviours are no longer inadvertently reinforced, while strengthening consistent support for re-feeding and recovery.

A key strength of FBT is its fit with adolescent developmental needs and family dependence. A practical improvement to your paper would be to note that FBT is often viewed as especially effective for **younger adolescents and shorter illness duration**, while acknowledging that not all families can implement it equally due to stress, resources, or conflict—factors that can affect adherence.

### ***Cognitive-Behavioural Therapy (CBT) And Third-Wave Approaches (ACT, DBT)***

CBT is another widely used approach, focusing on dysfunctional beliefs about weight/shape, rigid dietary rules, and behavioural routines that sustain restriction (Muratore & Attia, 2021). The treatment commonly emphasises normalising eating patterns, reducing compensatory behaviours, and challenging overvaluation of shape and weight through cognitive and behavioural techniques. Your citation notes improvements in weight and symptoms (Dalle Grave et al., 2013 as cited in Muratore & Attia, 2021). To strengthen the academic tone, you can add that CBT may be particularly relevant for **older adolescents** and individuals with higher capacity for insight and autonomous change, though motivation and readiness are key moderators of outcome.

Third-wave therapies such as ACT and DBT extend CBT by targeting emotion regulation, experiential avoidance, distress tolerance, and values-based living (Muratore & Attia, 2021). These approaches are often relevant when affective dysregulation, anxiety, or self-disgust are prominent. In a maintenance model, third-wave approaches may reduce the emotional reinforcement that restriction provides (e.g., a short-term sense of control), replacing it with adaptive strategies for coping with distress.

### ***Cognitive Rehabilitation and Executive Function Support***

Given evidence of cognitive rigidity and executive function difficulties, targeted cognitive remediation or neurocognitive rehabilitation may be helpful, particularly when inflexibility undermines progress (Muratore & Attia, 2021; Zanella & Lee, 2022). These interventions typically aim to strengthen cognitive flexibility, planning, and adaptive problem-solving. Framing this as an adjunct is important: cognitive support can improve engagement with behavioural change, but it does not replace nutritional rehabilitation or psychotherapy.

### ***Neurological Intervention: Deep Brain Stimulation (DBS)***

Deep brain stimulation (DBS) has been explored for severe, treatment-refractory AN. Bilge et al. (2018) describe DBS as the surgical implantation of electrodes to modulate activity in targeted brain regions implicated in anxiety, reward, and decision-making. You cite a small investigation involving four teenagers reporting weight increases following DBS to the nucleus accumbens (Hutton, 2013 as cited in Muratore & Attia, 2021). This is important, but it requires cautious academic framing: small samples and limited long-term follow-up mean that DBS in adolescents remains a specialised, high-risk intervention with significant ethical

considerations. It should be presented as experimental or reserved for exceptional clinical circumstances.

### *Treatment Outcomes and Integration*

You note that outcomes remain mixed, with Mohajan and Mohajan (2024) reporting only partial recovery for many individuals. This is a helpful realism point; you can strengthen it further by emphasising that treatment response likely varies by age, comorbidity, illness duration, family resources, and social context. Finally, combined approaches (e.g., CBT with family support; telehealth augmentation; coordinated nutritional rehabilitation plus psychotherapy) may improve accessibility and adherence, particularly for underserved or remote populations.

## **Discussion**

### *Application to Current Issues*

AN remains a major public health concern, and contemporary social media environments may intensify risk through appearance-focused content and rapid social comparison. However, academic wording must distinguish **association** from **causation**. Social media exposure is frequently **correlationally linked** with body dissatisfaction and disordered eating, and algorithmic amplification may increase exposure to harmful content for users who engage with it. Your TikTok example can be retained, but you should add methodological detail (e.g., sample characteristics, how “toxic content” was operationalised, and potential selection bias), because algorithm-audit studies can vary substantially in design and inference strength (Griffiths et al., 2024).

Prevention programs that address thin-ideal internalisation and body dissatisfaction show promise. Cognitive dissonance-based interventions (e.g., the Body Project) aim to reduce internalisation by encouraging critique of unrealistic ideals, while media literacy programs such as Media Smart strengthen critical engagement with media messaging (Koreshe et al., 2023). A key limitation, as you note, is that many programs target older adolescents even though body dissatisfaction can emerge in early childhood. This supports developmentally tailored prevention strategies for younger age groups, while also recognising that effectiveness may differ across cultures and contexts (Koreshe et al., 2023).

Early intervention is likewise critical: delays in seeking help are common due to stigma, shame, and low awareness, and only a minority of those meeting diagnostic criteria pursue treatment (Koreshe et al., 2023). Practical steps include screening pathways in schools and primary care, telehealth services to improve access, and public campaigns that normalise help-seeking. You can strengthen this section by briefly noting implementation challenges, for example, variable resources across schools, uneven digital access, and the need for culturally appropriate messaging.

### *Islamic Perspective*

Islam frames the human body as an Amanah (trust) from Allah SWT, implying a duty of care, protection, and responsible stewardship. The Qur’anic prohibition against self-harm— “And do not kill yourselves [or one another]. Indeed, Allah is to you ever Merciful” (4:29)—can be understood as a moral foundation for safeguarding health and seeking treatment when needed.



In AN, severe restriction can become life-threatening; therefore, neglecting nutrition may be viewed as a violation of this trust.

The principle of Wasatiyyah (moderation and balance) further supports a healthy relationship with food and the body. The Qur'an states: "And eat and drink, but be not excessive. Indeed, He likes not those who commit excess" (7:31). This verse can be applied clinically as reinforcement for balanced nourishment and avoidance of extremes—whether deprivation or harmful compensatory behaviours. Crucially, Islamic guidance can also function as a cognitive reframe: self-worth is not reducible to appearance. As narrated in Sahih Muslim, the Prophet Muhammad SAW said: "Indeed, Allah does not look at your appearance or wealth, but He looks at your hearts and actions." This aligns well with recovery goals that shift identity away from weight/shape and toward character, meaning, and virtuous action.

To avoid misunderstanding, it is important to state explicitly, Islamic guidance complements evidence-based clinical interventions; it does not replace medical, nutritional, or psychological treatment. Practically, Islamic resources can support recovery by encouraging self-compassion, gratitude, purposeful living, and emotional regulation through spiritually grounded practices (e.g., dua, dhikr), alongside professional care.

## Conclusion

This review synthesised psychological, biological (including neurochemical and genetic), and social factors implicated in anorexia nervosa, and outlined key treatment approaches. Psychologically, self-disgust, harsh self-criticism, and distorted body perception may contribute to the maintenance of restrictive behaviours (Glashouwer & Jong, 2021; Pattanayak et al., 2022). Biologically, neurochemical and hormonal dysregulation, malnutrition-related systemic effects, and executive function difficulties can intensify symptom persistence and complicate treatment adherence (Robert-McComb et al., 2013; Zanella & Lee, 2022). Socially, relational strain, alexithymia, isolation during crises, and atypical social attention patterns may undermine protective connections and worsen vulnerability (Kerr-Gaffney et al., 2021; Lukas et al., 2022; Ünver et al., 2020).

Evidence-based interventions include FBT and CBT, with third-wave therapies and cognitive rehabilitation offering additional support depending on emotional and cognitive profiles (Muratore & Attia, 2021; Zanella & Lee, 2022). Neuromodulation such as DBS remains specialised and requires cautious interpretation, particularly for adolescents. Finally, contemporary challenges such as social media exposure highlight the need for prevention, early intervention, and multi-level responses that involve healthcare systems, families, educators, and policymakers (Griffiths et al., 2024; Koreshe et al., 2023). Islamic concepts of Amanah and Wasatiyyah provide complementary ethical and motivational grounding for balanced self-care, reinforcing—rather than replacing—clinical recovery pathways.

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