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Current Perspectives on Anorexia Nervosa in Health and Therapy - a review

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Abstract

Introduction and purpose: Anorexia nervosa is a serious mental disorder characterized by persistent food restriction, intense fear of gaining weight, and distorted body image. Despite decades of research, anorexia remains challenging to diagnose and treat due to its complex psychological, social, and biological roots. This review aims to summarize current knowledge on anorexia nervosa, focusing on updated diagnostic criteria, risk factors, treatment strategies, and emerging trends in therapy and healthcare.

Material and method: A narrative literature review was conducted using publications from 2010 to 2024, sourced from databases such as PubMed, Scopus, and Web of Science. Inclusion criteria covered peer-reviewed articles on the epidemiology, diagnosis, treatment, and neurobiological or psychosocial aspects of anorexia nervosa. Studies were selected based on relevance, methodological quality, and applicability to adolescent and adult populations.

Results: The review highlights significant developments in understanding anorexia nervosa. Diagnostic updates in DSM-5 and ICD-11 have influenced prevalence estimates. Risk factors include genetic predisposition, personality traits, and sociocultural pressures. Contemporary treatments integrate psychotherapies (CBT-E, FBT, ACT), digital interventions, and pharmacotherapy. Barriers such as stigma, late diagnosis, and insufficient specialist care persist. Emerging research explores neurobiology, executive functioning, and circadian rhythms.

Conclusions: Anorexia nervosa is a multifactorial disorder requiring interdisciplinary approaches. Advances in diagnosis and treatment must be supported by greater public awareness, early intervention, and integration of educational and therapeutic strategies. Further research is needed to personalize care and improve long-term outcomes.

Keywords: Anorexia nervosa; Eating disorders; Mental health; Health education; Adolescent health; Therapeutic approaches; Public health

Introduction

The motivations for conducting a literature review on anorexia nervosa today can be distilled into several critical areas: evolving understanding of the disorder, complexity in treatment methods, and the need for updated clinical guidelines.

Firstly, there is an increasing recognition of the complexity surrounding the diagnosis and treatment of anorexia nervosa (AN). For example, recent studies emphasize the necessity of considering patients' motivations for change, which significantly impacts post-treatment outcomes [1]. This motivation is often influenced by psychological factors, highlighting a need for literature that can guide practitioners in tailoring interventions effectively.

Secondly, the treatment landscape is rapidly changing, with evidence emerging on the effectiveness of various psychotherapeutic approaches [2,3]. Although cognitive-behavioral therapy remains a cornerstone, understanding how to leverage new technologies and concurrent treatment strategies for comorbid conditions, such as anxiety and trauma, is becoming paramount [4,5]. This calls for comprehensive reviews to synthesize current findings and inform best practices.

Moreover, evolving evidence bases need to reflect updated prevalence estimates and the biological underpinnings of AN [6,7]. For instance, systematic reviews of neurobiological research reveal significant insights into underlying mechanisms, which can be essential in developing effective treatments [7]. Additionally, discussions on stigma and its effects on public perception are increasingly relevant, as they shape the dialogue surrounding anorexia nervosa [8].

In conclusion, a literature review on anorexia nervosa today is motivated by the necessity to keep pace with evolving treatment paradigms, integrate emerging research findings, and address the complexities of patient care.

Aim

The aim of this review is to synthesize current research on anorexia nervosa, with a focus on its diagnostic criteria, epidemiology, risk factors, treatment challenges, and emerging therapeutic approaches. By integrating recent findings, the article seeks to highlight gaps in knowledge and inform future directions for research and clinical practice.

Materials and methods

This narrative review was conducted by analyzing peer-reviewed articles published between 2010 and 2024, sourced from databases including PubMed, Scopus, and Web of Science. The search employed keywords such as “anorexia nervosa,” “eating disorders,” “treatment,” “risk factors,” and “diagnosis.”

Inclusion criteria encompassed original research articles, systematic reviews, and meta-analyses published in English that focused on anorexia nervosa in adolescent and adult populations. Studies were included if they addressed diagnostic criteria, epidemiology, risk factors, treatment modalities, or therapeutic outcomes.

Exclusion criteria included case reports, editorials, non-peer-reviewed publications, studies focusing solely on other eating disorders (e.g., bulimia nervosa or binge-eating disorder), and articles lacking methodological transparency or relevance to the primary research objectives.

A qualitative synthesis of findings was performed to identify prevailing themes, knowledge gaps, and emerging directions in the study and treatment of anorexia nervosa.

Review and discussion

Introduction and Definition of Anorexia Nervosa

Anorexia nervosa (AN) is defined distinctly in both the DSM-5 (Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition) and the ICD-11 (International Classification of Diseases, 11th Revision), highlighting critical criteria that guide its diagnosis and understanding.

In the DSM-5, anorexia nervosa is characterized primarily by three core features: a restriction of energy intake leading to significantly low body weight, an intense fear of gaining weight or becoming fat, and a disturbance in the experience of body weight or shape, along with a lack of recognition of the seriousness of low body weight. This definition was refined from previous versions, notably removing the criterion of amenorrhea, which had been a hallmark characteristic in DSM-IV to differentiate between anorexia and its subthreshold forms in women [9,10]. The DSM-5 also includes a classification for atypical anorexia nervosa, where individuals exhibit significant weight loss and psychological

symptoms associated with anorexia but fail to meet the low-weight criterion, reflecting the complexity of disordered eating behaviors that do not fit traditional models [11,12].

Conversely, the ICD-11 aligns closely with DSM-5 criteria, although it emphasizes the importance of understanding differences within eating disorders. The ICD-11 defines anorexia nervosa with similar features, including significant weight loss and a distorted body image, and introduces specific severity specifiers based on weight and the presence of medical complications. Unlike the DSM-5, the ICD-11 calls for a broader understanding of weight implications, enabling a nuanced approach to treatment [13,14]. This alignment aims to reduce the prevalence of ambiguous diagnostic categories such as Other Specified Feeding or Eating Disorder (OSFED), which remains common across both classifications despite efforts to consolidate definitions [15].

The emphasis on severity levels in the ICD-11 provides clinicians with a structured pathway to assess treatment needs and potential health risks associated with varying degrees of anorexia nervosa, which the DSM-5 also addresses through its severity ratings specific to body mass index (BMI) [14,16]. Both classification systems underline the psychological components of the disorder, suggesting a persistent fear of weight gain, which continues to be pivotal in diagnostic evaluations [9,17,18].

Anorexia nervosa's definitions in these classification systems serve not only diagnostic purposes but also impact prevalence estimates, which have been shown to vary significantly between them due to their divergent criteria and methodologies [10,16,19]. For instance, critiques suggest that DSM-5's changes may have increased the diagnosed prevalence of anorexia nervosa by broadening criteria, potentially affecting clinical perceptions and resource allocation [20,21].

Thus, the current classifications—DSM-5 and ICD-11—highlight the complexity of anorexia nervosa, delineating it with critical psychological and physiological components, while remaining adaptive to the evolving understanding of eating disorders. These nuanced definitions are pivotal for improved recognition, treatment, and research, promoting the necessity for continued evaluation and refinement in diagnostic practices.

Epidemiology and Risk Factors

Recent studies on anorexia nervosa reveal a nuanced landscape of prevalence, highlighting both global and localized trends. Anorexia nervosa, characterized by restrictive

eating and an intense fear of weight gain, is estimated to affect approximately 0.3% to 1% of the general population, with its prevalence exhibiting an upward trajectory particularly among women aged 15 to 24 years [22,23]. The Global Burden of Disease Study indicates that the lifetime prevalence rates for anorexia vary significantly across geographical regions, revealing figures as high as 3.6% for females and significantly lower for males, typically hovering around 0.3% [6].

In Eastern Europe, Brytek-Matera's research emphasizes a continued increase in the prevalence of eating disorders, including anorexia, underscoring a global tendency observed from 1997 to 2017 where prevalence rates have steadily risen in all regions [6]. The data elucidate the situation in specific demographics, such as adolescents and young adults, showing that societal pressures and cultural factors contribute significantly to the risk of developing anorexia nervosa in these age groups [24,25].

Local studies unveil distinct patterns that may correlate with socio-economic and healthcare system factors. For example, a study on Medicare beneficiaries in the United States estimates that the annual prevalence of anorexia among individuals aged 65 and above is at least 1.1%, albeit this appears lower than figures reported for other studies which indicate prevalence levels between 21% and 42% in some elderly populations residing in care facilities [26,27]. In particular, the prevalence of anorexia of aging—a specific form characterized by appetite loss—emerges as a significant clinical concern, with varying rates observed in institutional settings (up to 60%) compared to community-dwelling populations [28,29].

Sex differences also play a vital role in prevalence trends, with a robust conclusion that women are disproportionately affected by anorexia nervosa compared to men across various studies, reaffirming a trend observed in both Western and Eastern populations [23,30]. The notable prevalence increases in Latin America, highlighted by public interest as evidenced through Google search trends, signal growing awareness and acknowledgment of these disorders in regions previously under-researched concerning eating disorder epidemiology [25].

Anorexia nervosa is a multifaceted eating disorder influenced by a complex interplay of biological, psychological, and social factors. Understanding these factors is crucial for identifying individuals at risk and developing effective prevention and treatment strategies.

Genetic predisposition plays a significant role, with studies identifying specific genes associated with increased risk for anorexia nervosa. For example, a multiomic analysis highlighted the genetic component involving the PROS1 gene, indicating that increased expression of this gene is associated with a higher risk for developing anorexia nervosa [31].

Additionally, there is evidence that metabolic alterations, such as dysregulation of appetite-related hormones, influence eating behaviors and contribute to the development of anorexia [32]. These biological factors provide a foundation upon which psychological and environmental influences can critically act.

Psychologically, traits such as perfectionism, anxiety, and depressive symptoms are commonly observed in individuals at risk for anorexia. A study indicated that over 40% of individuals diagnosed with anorexia also had a comorbid anxiety disorder, particularly generalized anxiety disorder [33]. Cognitive and emotional regulation difficulties further exacerbate the risk, leading individuals to use restrictive eating as a coping mechanism for psychological distress [32].

Social influences significantly impact the risk of developing anorexia. Cultural ideals that emphasize thinness and beauty standards create pressure, particularly among adolescents. Weight-related teasing and peer bullying have been identified as critical social stressors that can trigger disordered eating behaviors [34]. Moreover, family dynamics, characterized by dysfunctional relationships or high expectations, are crucial social factors that contribute to the vulnerability for developing anorexia nervosa [35,36].

Contemporary Challenges in Diagnosis and Treatment

Clinicians encounter significant challenges in identifying anorexia nervosa, particularly during its early stages. One major difficulty stems from psychosocial factors affecting patients, such as alexithymia, which involves difficulties in recognizing and communicating emotions. This trait is prevalent among individuals with eating disorders and complicates early detection, as patients may fail to articulate their distress or difficulty with food intake [37,38]. Additionally, the increasing influence of social media propagating idealized body images can mask early signs of anorexia, leading to underreporting and delays in diagnosis [39,40].

In geriatric populations, the "anorexia of aging" can often be mistaken for normal aging processes, thus hindering timely intervention [41,42]. Factors such as social isolation and comorbid conditions further obscure the clinical presentation of anorexia in older patients, necessitating heightened awareness among healthcare providers [43]. Recognition of undernutrition and cognitive impairment as potential early indicators is essential; neglecting these can result in severe health consequences [44].

Accessing treatment for anorexia nervosa is impeded by multiple barriers, notably stigma and the shortage of specialized care. Stigma surrounding mental health issues often prevents individuals from seeking help, as they may fear societal judgment or feel shame associated with their condition [45,46]. The lack of public awareness about anorexia and its complexity further exacerbates this issue, leading to misconceptions that discourage affected individuals from pursuing treatment [45,46].

Additionally, there is a notable shortage of mental health professionals specializing in eating disorders, which can delay diagnosis and treatment initiation, adversely affecting patient outcomes [47]. Furthermore, many healthcare providers may lack sufficient training in recognizing and managing anorexia, contributing to misdiagnosis and inadequate referral processes [45]. A comprehensive approach to enhance public education, coupled with improved training for healthcare providers, is essential to mitigate these barriers and facilitate timely access to appropriate care for individuals suffering from anorexia nervosa [47,48].

Current therapeutic models for anorexia nervosa face several controversies and limitations. One significant issue is the variability in outcomes associated with different psychotherapeutic approaches, such as Cognitive Behavioral Therapy (CBT) and Family-Based Treatment (FBT). Although some studies support the efficacy of these models, the evidence does not consistently indicate that one approach is superior to the others, leading to ongoing debates about the best treatment standards [49–51]. Additionally, patients often exhibit resistance to treatment, which is frequently tied to the egosyntonic nature of the disorder, complicating effective engagement and progress [52,53].

The relatively small sample sizes and short durations of many clinical trials also limit the generalizability and conclusiveness regarding treatment efficacy [54,55]. Furthermore, the high prevalence of comorbidities in patients with anorexia poses additional challenges, as these complexities may require integrated treatment modalities not yet fully addressed in current models [56]. There is growing concern regarding the ethical implications of involuntary treatment, particularly in balancing the principles of autonomy and beneficence in patient care [57]. This highlights the need for ongoing evaluation and adaptation of treatment strategies based on emerging evidence and patient-centered care philosophies.

Therapeutic Innovations and Interdisciplinary Approaches

Modern therapeutic approaches such as Family-Based Therapy (FBT), Enhanced Cognitive Behavioral Therapy (CBT-E), and Acceptance and Commitment Therapy (ACT)

demonstrate efficacy in treating various mental health disorders. FBT, particularly effective for adolescents with eating disorders, is supported by evidence indicating it is the strongest evidence-based treatment for adolescent anorexia nervosa, with substantial efficacy also noted for bulimia nervosa [58]. Structural and systemic family therapies have been shown to improve functioning and mental health outcomes in children and adolescents, with reviews indicating long-lasting positive effects on family dynamics and individual symptoms, although some recent European trials have reported less favorable outcomes than earlier U.S. trials [59,60]. Enhancements of cognitive behavioral therapy, specifically CBT-E, provide effective interventions for eating disorders, showcasing higher remission rates compared to traditional psychotherapies [61,62].

While FBT and CBT-E address specific individual and family needs, Acceptance and Commitment Therapy promotes psychological flexibility and encourages patients to act in accordance with their values, thus broadening the scope of treatment options available for mental health concerns. Together, these approaches illustrate a shift towards holistic therapy integration, emphasizing both systemic family involvement and individual behavioral change.

Digital interventions in mental health care have emerged as effective alternatives, especially during the COVID-19 pandemic. Studies indicate that online therapy can mitigate the psychological impact of crises, demonstrating significant acceptability among patients and families facing barriers to traditional face-to-face therapy [63,64]. Evidence shows that internet-administered cognitive behavioral therapy (ICBT) effectively addresses a range of mental health issues, contributing to bridging the treatment gap for those unable to access conventional services [65,66].

Furthermore, teletherapy has been recognized for its adaptability in providing care, with research supporting its efficacy across various clinical settings [67,68]. Despite mixed feelings among some patients regarding the effectiveness and comfort level of online formats [69], overall public attitudes toward e-mental health interventions remain positive, particularly among younger demographics seeking help [70,71]. Therefore, these digital solutions provide a valuable alternative, maintaining therapeutic benefits while accommodating the constraints posed by the pandemic.

Pharmacotherapy plays a significant role in the management of mental health disorders, complementing psychotherapeutic interventions. The efficacy of pharmacotherapy has been well-documented, particularly in conditions like Attention-Deficit Hyperactivity Disorder (ADHD), where stimulants demonstrate considerable effectiveness in alleviating symptoms, with a reported benefit to approximately three-fourths of treated individuals [72]. Emerging

research continues to focus on refining these pharmacological approaches, including individualized treatment plans influenced by patient-specific genetic factors [73].

Recent advances also explore the application of nanomedicine in enhancing drug delivery for substance use disorders (SUD), suggesting innovative avenues for treatment that increase therapeutic efficacy while minimizing side effects [74]. Furthermore, the COVID-19 pandemic has underscored the shifts in psychotropic medication use, with reports of increased dispensations reflecting rising mental health challenges across populations, particularly among adolescents [75]. These developments indicate a growing integration of pharmacotherapy within broader treatment frameworks aimed at tackling complex mental health issues.

Future research directions

Future research on anorexia nervosa should be guided by several key areas that integrate interdisciplinary approaches and study specific cognitive and physiological aspects of the disorder, ultimately aiming to enhance treatment efficacy and prevention strategies.

Firstly, investigating cognitive factors such as future-oriented thinking and intertemporal discounting could be crucial. Research indicates that individuals at risk for anorexia exhibit cognitive alterations that may serve as vulnerability factors. Longitudinal studies should focus on whether these cognitive patterns are predictive of anorexia onset and whether interventions can modify them to prevent the onset of the disorder [76]. Comprehending these cognitive mechanisms can also enrich therapeutic approaches aimed at enhancing decision-making processes among those affected [77].

Additionally, exploring neurobiological changes within reward pathways influenced by starvation and restrictive behaviors in anorexia patients is critical. Understanding these alterations could inform new treatment modalities that leverage the brain's reward systems to promote recovery [78]. Such insights can also lead to a more nuanced understanding of how reward-related mechanisms could be therapeutically targeted.

The role of circadian rhythms and sleep in eating disorders is emerging as a significant area of research. Recent findings suggest that interventions based on circadian mechanisms, such as specific light therapy timings, might offer effective treatment pathways [79]. Addressing sleep disturbances, often associated with anorexia, could further optimize treatment outcomes and facilitate better recovery rates.

Moreover, expanding research on executive functioning and its relationship with anorexia treatment outcomes is paramount. Recent studies indicate that executive dysfunction

may hinder therapeutic progress, thus evaluating and targeting these cognitive processes during treatment could improve efficacy [80,81]. A greater emphasis on treatment strategies that accommodate cognitive profiles may enhance therapeutic alliances and retention rates among patients.

Research should also focus on the interaction between psychosocial factors, such as anxiety and family dynamics, and their impact on treatment efficacy, particularly in early intervention settings. By identifying and addressing these factors, treatment can be more effectively personalized [4,82]. Additionally, consistent assessment of these factors throughout treatment is necessary to develop adaptive treatment strategies that can meet patients' evolving needs.

Finally, the medical community must prioritize the exploration of biological risk factors and genetic predispositions associated with anorexia nervosa. Recent multiomic studies point to the potential for discovering significant risk genes, which could inform future therapeutic innovations and personalized medicine approaches [31]. These biological insights could lead to more targeted interventions and ultimately, improved outcomes for individuals struggling with anorexia.

Conclusions

Anorexia nervosa remains one of the most complex and challenging psychiatric disorders, with multifactorial origins and profound physical, psychological, and social implications. The findings and discussions presented in this work highlight the multifaceted nature of the illness, encompassing biological, psychological, and sociocultural dimensions. It is evident that no single explanatory model can fully account for the development and maintenance of anorexia nervosa. Rather, an integrative, biopsychosocial approach offers the most comprehensive framework for understanding and treating the disorder.

The interplay between individual vulnerabilities—such as genetic predispositions, personality traits, and early developmental experiences—and external pressures, including societal ideals of thinness and family dynamics, appears central to the etiology and course of anorexia nervosa. This interaction underscores the necessity of a holistic treatment approach that extends beyond symptom management to address underlying cognitive distortions, emotional regulation difficulties, and interpersonal functioning.

Furthermore, the chronic and relapsing nature of anorexia nervosa calls for sustained, multidisciplinary intervention, with particular emphasis on early detection and prevention.

Treatment outcomes can be significantly improved through early intervention strategies and collaborative care models that include medical, psychological, and nutritional support.

Despite considerable advances in research and clinical practice, many challenges remain. These include the need for more effective treatment protocols, a deeper understanding of neurobiological underpinnings, and the reduction of stigma associated with eating disorders. Future research must continue to explore innovative therapeutic modalities and refine our understanding of risk and protective factors across diverse populations.

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